Five Mile Building 9

BC02 - Architectural Specification

Five Mile Lane / Murchison Rd , Frankton, Queenstown, New Zealand

Project Ref: 90371

Date: 31 July 2026



PROJECT SPECIFICATION Works, materials and workmanship for construction in accordance with the accompanying drawings.

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1013 DOCUMENT CONTROL

1 DOCUMENT CONTROL

Document Control

1.1 PREPARED BY

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1.2 DOCUMENT DETAILS

Project Name:	Building 9, Five Mile Shopping Centre
Project Number:	90371
File Reference:	14.1 BC02
Client:	Naylor Love
Client Contact:	Andrew Blackford
Version:	

1.3 REVISION CONTROL

Issue:	Building Consent 02
Revision:	A
Amendment Details:	
Issued to:	Naylor Love
Date of Issue:	July 31st 2026

1.4 AUDIT CONTROL

Date:	July 2026
Author:	Matthew Charles
Approved by:	Plus



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1220 PROJECT

1 GENERAL

This general section describes the project including:

- A description of the work
- Design construction safety
- Principal's Health & Safety matters
- Site description, features and restrictions
- Design parameters for design by contractor
- Archaeological discovery

1.1 READ ALL SECTIONS TOGETHER

Read all general sections together with all other sections.

1.2 DESCRIPTION OF THE WORK

This is a DESIGN AND BUILD CONTRACT under Naylor Love. The specification notes the material elements within the project. The Contractor may substitute materials as required following the contractual obligations to the client

Refer to 'client requirements' for the materials and client aspects to be delivered under the contract between Naylor Love and Developer

- The project (called **Building 9**) is a 6 level retail and office building with a 3 level carpark structure built over an existing basement servicing Building 2 tenant
- Their may be DESIGN AND BUILD Subcontractors on the project which include (Services Contractors). Hence coordination of services and locations of exposed fittings may be altered from the Building Consent issue documentation, but are to follow the Architectural intent for set-out

Base Building

- Building Structure is mainly steel frame with concrete slabs, detailed coordination of base build services protruding through the structural elements has been undertaken
- Facade is technically documented by STARKE, once Facade shop drawings have been developed some details, their drawings will take precedence. Plus Studio have setout all the main curtain wall elements based on technical details provided by Starke
- Seismic and Wind loading to window and door systems supplied by engineer and confirmed by Starke
- General areas (Lobbies and other amenities) are being fitted out by the main contractor based on Plus Studio documentation.
- Coordination of any builder's work required for this is to be lead by main contractor

Tenancy splits / fit out

- The tenancy splits are ongoing, reference to Plus Studio drawing **A1200 series**
- **Proof of Concept - for services to future tenancy fit outs has been undertaken. Tenancy fit outs will impact services design and runs.**
- **Tenancy types will impact the base building lobbies per level. Intent is drawn in Plus Studio Documentation,** fine tuning will be needed once tenancy designed are locked down.
- Any spaces not tenanted during construction may require walls around the lobby areas to be undertaken as part of base build. Configuration of these will need to be worked through with the developer.

1.3 NO RESTRICTED BUILDING WORK

This project does not include Restricted Building Work.

Design Construction Safety

1.4 DESIGN CONSTRUCTION SAFETY

The project designers are unaware of unusual or atypical features, which a reasonably experienced contractor may not be aware of, that may present a hazard or risk during a typical construction process. The Contractor is still required to undertake its own assessment, to determine if they consider there are any further safety matters and provide for these in carrying out the construction of the work.

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Principal's Health & Safety Matters

1.5 PRINCIPAL'S SITE HEALTH AND SAFETY PLAN

Obtain a copy of the principal's site health and safety plan. Safety in Design has been undertaken by all consutlattants under Naylor Love leadership through the design pahses.

Site

1.6 SITE

The site consists of: Refer to survey docuemtnation and titles for this site
As shown on drawing: Location Plan - refer to A0010
Existing Site Plan - refer to A0012
Proposed Site Plan - refer to A0013

1.7 LEGAL DESCRIPTION

The site of the works, the street address and the legal description are shown on the drawings.

1.8 EXISTING SERVICES

Naylor Love have been leading the understanding and documentation of existing services. Care has been taken to understand existing services and approach to construct the new development with these being considered.

Site environment - Durability

1.9 EXPOSURE ZONE

The exposure zone is to NZS 3604, Section 4 Durability, 4.2 Exposure zones and NZBC E2/AS1.

The site zone is: B

Site environment - Wind

1.10 WIND DESIGN PARAMETERS - SPECIFIC DESIGN

The design wind pressures are to AS/NZS 1170.2:2011

SLS Refer to Structural Engineering Specification
ULS Refer to Structural Engineering Specification

Site environment - Seismic

1.11 EARTHQUAKE - SPECIFIC DESIGN

The earthquake design is to NZS 1170.5, in particular the intent of NZS 1170.5, 1.2 **Determination of earthquake actions**.

Refer to Structural Engineers Specification	Building type, importance level (to AS/NZS 1170.0, table 3.2)

Archaeological discovery

1.12 REPORT FINDING ANY ANTIQUITIES AND ITEMS OF VALUE

Report the finding of any fossils, antiquities and other items of value, to the Contract Administrator. All to remain undisturbed until approval is given for removal.

Pre-1900, items or evidence of human activity on the site, come under the Heritage New Zealand Pouhere Taonga Act 2014. If such items or evidence is discovered work must stop immediately and the Contract Administrator must be notified immediately. The site may be classified as an Archaeological Site under the Act, and the Contract Administrator or Owner must contact the Heritage New Zealand for authority to proceed.

Post-1900 items remain the property of the owner, pre-1900 items may remain the property of the owner or the Crown subject to what is found.
Known archaeological information relating to this site includes the following: -

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1222 REFER TO THE FOLLOWING SEPARATE SPECIFICATIONS

1 GENERAL

1.1 SEPARATE SPECIFICATIONS

STRUCTURAL	**Structus**
SEISMIC ENGINEERING	**Structus**
SERVICES	**Powell Fenwick**
FACADE	**Starke** - supplier **JFS Engineers** - performance specification
H1 Report	**Powell Fenwick**
FIRE	**Cosgroves-Stantec**
CIVIL	**Clark Fortune McDonald**



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1232 INTERPRETATION & DEFINITIONS

1 GENERAL

This general section relates to definitions and interpretation that are used in this specification.

Definitions

1.1 DEFINITIONS

Hold point:	A stage of the construction where the contract administrator and any other nominated person requires notice to be given that particular work is to be carried out. Work may not proceed on that particular part until the contract administrator and any other nominated person has advised that work can continue. A notice period of 2 Working Days is required unless stated otherwise.
Notification point:	A stage of the construction where the contract administrator and any other nominated person requires notice to be given that particular work is to be carried out. Work may continue and the contract administrator and any other nominated person may choose whether or not they wish to witness the particular work being carried out. A notice period of 2 Working Days is required unless stated otherwise.
Product:	A thing or substance produced by natural process or manufacture.
Proprietary:	Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
Provide and fix:	"Provide" or "fix" or "supply" or "fix" if used separately mean provide and fix unless explicitly stated otherwise.
Required:	Required by the documents, the New Zealand Building Code or by a statutory authority.
Review:	Review by the contract administrator and other consultants is for general compliance only. Review does not remove the need for the contractor to comply with the stated requirements, details and specifications of the manufacturers and suppliers of individual components, materials and finishes. Neither can the review be construed as authorising departures from the contract documents.
Working day:	Working day means a calendar day other than any Saturday, Sunday, public holiday or any day falling within the period from 24 December to 5 January, both days inclusive, irrespective of the days on which work is actually carried out.
Workplace:	Workplace means the place where work is being carried out, or is customarily carried out, for a business or undertaking including any place where a worker goes, or is likely to be, while at work (under Health and Safety at Work Act 2015).

1.2 PERSONNEL

Owner:	The person defined as "owner" in the New Zealand Building Code.
Principal:	The person defined as "Principal" in the conditions of contract.
Contractor:	The person contracted by the principal to carry out the contract.
Contract administrator:	The person appointed by the principal to administer the contract on the principal's behalf. Where no person has been appointed by the principal, it means the principal or the principal's representative.

1.3 ABBREVIATIONS

The following abbreviations are used throughout the specification:

AAMA	American Architectural Manufacturers Association
AS	Australian Standard
AS/NZS	Joint Australian/New Zealand Standard

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ASTM	American Society for Testing and Materials
AWCINZ	Association of Wall and Ceiling Industries of New Zealand Inc.
BCA	Building Consent Authority
BPIR	Building Product Information Requirements
BPIS	Building Product Information Sheet
BPS	Building Product Specifications
BRANZ	Building Research Association of New Zealand
BS	British Standard
COP	Code of practice
CSIRO	Commonwealth Scientific and Industrial Research Organisation
HERA	Heavy Engineering Research Association
LBP	Licensed Building Practitioner
MBIE	Ministry of Business, Innovation and Employment
MPNZA	Master Painters New Zealand Association Inc
NZBC	New Zealand Building Code
NZS	New Zealand Standard
NZS/AS	Joint New Zealand/Australian Standard
NZTA	New Zealand Transport Agency
NUO	Network Utility Operator
OSH	Occupational Safety and Health
PCBU	Person Conducting a Business or Undertaking (under Health and Safety at Work Act 2015)
RBW	Restricted Building Work
SARNZ	Scaffolding and Rigging New Zealand Inc
SED	Specific Engineering Design
TA	Territorial Authority
TNZ	Transit New Zealand (Transit New Zealand is now New Zealand Transport Agency NZTA - some specifications are still prefixed TNZ)

1.4 DEFINED WORDS

Words defined in the conditions of contract, New Zealand Standards, or other reference documents, to have the same interpretation and meaning when used in their lower case, title case or upper case form in the specification text.

1.5 WORDS IMPORTING PLURAL AND SINGULAR

Where the context requires, words importing singular only, also include plural and vice versa.

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1232S1 EXPLANATION OF SCHEDULE SECTIONS

1 GENERAL

This general section provides an explanation of schedule sections and their relationship to general sections and work sections. Specific schedule sections contained within this specification are also identified.

1.1 EXPLANATION OF SCHEDULE SECTIONS

A schedule section identifies work sections that contain common requirements, as identified in the title of the schedule section. For example 1235S1 SCHEDULE OF SHOP DRAWINGS identifies work sections that have requirements for shop drawings. Details of the requirements are contained in the identified work sections with additional requirements contained in the general section 1235 SHOP DRAWINGS.

Some schedule sections are identified by the 4 digit CBI (Co-ordinated Building Information) number of the general section that they relate to, followed by the letter "S" followed by a numeral (1-9). The numeral allows for multiple schedule sections to be associated with the same general section.

Other schedule sections that do not share a common CBI number with a general section, have their own unique 4 digit CBI number, followed by the letter "S" followed by a numeral. These schedule sections contain additional subject content relating to the schedules and the identified work sections.

1.2 SCHEDULE SECTIONS

The following Schedule sections are contained within the specification:

1235S1	Schedule of Shop Drawings
1238S1	Schedule of As Built Documentation
1239S1	Schedule of Operation & Maintenance Info
1270S1	Schedule of Samples & Prototypes
1270S2	Schedule of Spares & Maintenance Products
1278SR	Schedule Of Slip Resistance Testing

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1233 REFERENCED DOCUMENTS

1 GENERAL

1.1 REFERENCED DOCUMENTS

Throughout this specification, reference is made to various New Zealand Building Code Compliance Documents (NZBC __), acceptable solutions (__ AS_) and verification methods (__ VM_) for criteria and/or methods used to establish compliance with the New Zealand Building Code.

Reference is also made to various standards produced by Standards New Zealand (NZS, AS/NZS, NZS/AS), overseas standards and to listed Acts, Regulations and various industry codes of practice and practice guides. The latest edition (including amendments and provisional editions) at the date of this specification applies unless stated otherwise.

It is the responsibility of the contractor to be familiar with the materials and expert in the techniques quoted in these publications.

Documents cited both directly and within other cited publications are deemed to form part of this specification. However, this specification takes precedence in the event of it being at variance with the cited documents.

1.2 DOCUMENTS

Documents referred to in the GENERAL sections are:

NZBC F5/AS1	Construction and demolition hazards
AS/NZS 1170.2:2011	Structural design actions - Wind actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
AS/NZS 3012	Electrical installations - Construction and demolition sites
NZS 3109	Concrete construction
NZS 3114	Specification for concrete surface finishes
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings
NZS 4210	Masonry construction: Materials and workmanship
NZS 4781	Code of Practice for Safety in Welding and Cutting
AS/NZS 5131	Structural steelwork - Fabrication and erection
NZS 6803	Acoustics - Construction Noise

Building Act 2004
Building Regulations 1992
Health and Safety at Work Act 2015
Health and Safety at Work (General Risk and Workplace Management) Regulations 2016
Health and Safety at Work (Hazardous Substances) Regulations 2017
Health and Safety in Employment Regulations 1995
New Zealand Building Code
Heritage New Zealand Pouhere Taonga Act 2014
Resource Management Act 1991
Smoke-free Environments Act 1990

WorkSafe	Guidelines for the provision of facilities and general safety in the construction industry
WorkSafe	Good Practice Guidelines - Excavation Safety
WorkSafe	Scaffolding in New Zealand - Good Practice Guidelines
WorkSafe	Managing Work Site Traffic - Good Practice Guidelines

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1234 DOCUMENTATION

1 GENERAL

This general section relates to documentation required by the Territorial Authority / Building Consent Authority for compliance with the New Zealand Building Code. It also includes documentation relating to:

- Substitutions
- Manufacturers' documents

Building Consent Authority documentation

1.1 BUILDING CONSENT

Obtain the original building consent forms and documents from the owner and keep them on site, preserve the condition of consent forms and documents. Liaise with the building consent authority for all notices to be given and all inspections required during construction to ensure compliance. Return the consent form and documents to the owner on completion.

1.2 BUILDING CONSENT COMPLIANCE

It is an offence under the Building Act 2004

- to carry out any work not in accordance with the building consent.
- to carry out Restricted Building Work by anyone other than a Licensed Building Practitioner licensed for that type of work.

The resolution of matters concerning building code compliance to be referred to the contract administrator for a direction and then if required to the BCA for consent.

Where any alteration is requested by the territorial authority or any other authority, do not undertake such alteration until the matter has been referred to the contract administrator for direction.

1.3 PROJECT PERSONNEL

Provide names and contact details of the contractor's key personnel and tradespersons who are involved with the project. Review the list once a month and reissue it if changes have been made.

Compliance information

1.4 DOCUMENTATION REQUIRED FOR CODE COMPLIANCE

Information may be required either as a condition of the contract documents or as a condition of the building consent. It may include the following:

- Applicators approval certificate from the manufacturer / supplier
- Manufacturer's / supplier's warranty
- Installer / applicator's warranty
- Producer Statement (PS1) - Design
- Producer Statement (PS3) - Construction from the applicator / installer
- Producer Statement (PS4) - Construction review from an acceptable suitably qualified person

Refer to the general sections for the requirements for compliance information to be provided by the contractor.

Refer to the building consent for the requirements for compliance information to be provided by the contractor.

Obtain required documents from the relevant parties for delivery to the contract administrator after the final inspection has been carried out by the BCA.

1.5 PRODUCER STATEMENTS

When producer statements verifying construction are required, provide copies to both the Building Consent Authority and the Contract Administrator. Provide producer statements in the form required by the BCA.

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Substitutions

1.6 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.7 PROPOSED SUBSTITUTIONS

The contractor may propose substitutions to products within work sections, when the contractor has determined that the proposed substitution is an alternative to the specified product.

Amendments to issued Building Consent

1.8 CONTRACTOR AMENDMENTS TO BUILDING CONSENT

Where the contractor has sought acceptance of a substitution or a variation which is for the contractor's own convenience and the substitution or variation requires an amendment to the Building Consent, the contractor must apply for and obtain the required amendment.

The contractor must:

- Obtain approval for substitutions from the contract administrator.
- Prepare and provide to the BCA all documentation required for the amendment.
- Pay all fees and other costs associated with this amendment.
- Where the amendment affects other approved plans, also amend those plans.

1.9 PRINCIPAL AMENDMENTS TO BUILDING CONSENT

Where the principal is proposing a substitution or a variation which requires an amendment to the Building Consent, the contractor must provide to the principal information that the contractor has that is required for the amendment.

The principal will:

- Prepare and provide to the BCA all documentation required for the amendment.
- Pay all fees and other costs associated with this amendment.
- Where the amendment affects other approved plans, also amend those plans.

Manufacturer's documents

1.10 MANUFACTURER'S AND SUPPLIER'S INSTALLATION REQUIREMENTS

Manufacturer's and supplier's requirements, instructions, specifications or details mean those issued by them for their particular product, material or component and are the latest edition.

1.11 CONTRACTOR TO OBTAIN CURRENT DOCUMENTATION

Where manufacturer’s installation, application and execution requirements are referred to in this specification, the Contractor must ensure they are fully aware of this documentation. Whenever necessary obtain and keep on site the relevant latest version of such documentation and make it available to workers carrying out that part of the work.

1.12 DOCUMENTATION PROVIDED FOR BUILDING CONSENT

Documentation including manufacturer’s installation instructions, specification data sheets, producer statements, BRANZ and similar appraisals may be included in the issued Building Consent. These documents have been provided only to demonstrate compliance with the NZBC.

Branded work sections

1.13 BRANDED PRODUCTS / SYSTEMS

Where branded products and systems are specified, all products and components of the system must be as per the specification.

1.14 CROSS REFERENCED WORK SECTIONS

If any related work is cross referenced to a generic work section, but only the equivalent branded section is included in the specification, use that branded section. Confirm with the contract administrator if there is any doubt.



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1235 SHOP DRAWINGS

1 GENERAL

This general section relates to common requirements for the preparation, submission and review of shop drawings referred to in this specification and in separate specifications/documents relating to this project. Detailed requirements for shop drawings for particular parts of the work are included in the specific work section.

1.1 SCHEDULE SECTION

Refer to 1235S1 SCHEDULE OF SHOP DRAWINGS for work sections contained in this specification that have requirements for shop drawings.

1.2 SHOP DRAWING FORMAT

Prepare shop drawings at appropriate scales to enable good legibility. Unless otherwise specified in a work section, submit shop drawings in the format as listed in SELECTIONS.

1.3 PROGRAMME FOR SHOP DRAWINGS

Allow time in the programme for the preparation, coordination and review of shop drawings. Allow also for such resubmission and further review as may be required prior to fabrication. No extension of time will be allowed for resubmission and further review.

1.4 COMMUNICATION WITH SHOP DRAWING DETAILER

Agree and arrange for such direct contact as is appropriate between detailer, consultant and others whose input may be required in the preparation of the shop drawings. Such direct communication does not relieve the contractor of the need to carry out their own coordination and check of shop drawings.

1.5 CONTRACTOR COORDINATION OF SHOP DRAWINGS

Before submitting the shop drawings for review, carry out coordination to ensure that allowance has been made for all other parts of the work that relate to the work detailed in the shop drawings.

1.6 COORDINATION WITH SITE MEASURE

The contractor is solely responsible for coordination of shop drawing dimensions with site measurements. The reviewer's dimensional review is limited to visual/aesthetic matters only

1.7 SHOP DRAWING REVIEW

Submit shop drawings to the named reviewers for review, in due time to ensure conformance with the contract programme.

- Where no time is stated in a specific section allow 10 working days for review by the reviewer. Where a large number of drawings are involved more time will be necessary.
- Where no person is named as the reviewer, submit the shop drawings to the contract administrator.

Shop drawing review indicates only that the shop drawing interpretation of the design concept has been reviewed without the need for further modification, other than the corrections indicated by the reviewer.
The reviewer may advise that:

- The shop drawings have been reviewed and work may proceed; or
- The shop drawings have been reviewed and work may proceed subject to notes, annotations or comments provided; or
- The shop drawings have been reviewed and work may proceed subject to notes, annotations or comments provided. Resubmitted revised shop drawings shall be provided for the record, or
- Work may not proceed. Revise and resubmit shop drawings

1.8 RESPONSIBILITY

Review of shop drawings does not relieve the contractor of responsibility for the correctness of the shop drawings, site dimensions, the overall design, coordination and performance, or for ensuring the work is carried out in compliance with the contract documents. It does not remove the need for the contractor to comply with the stated requirements, details and specifications of the manufacturers and suppliers of individual components, materials and finishes. Review cannot be construed as authorising departures from the contract documents.

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1.9 RESUBMISSION OF SHOP DRAWINGS

Reviewed drawings which are required to be resubmitted to correct comments or notations indicating where the shop drawings are at variance with the contract documents, are to be modified and resubmitted to the reviewer for re-review. Allow 5 working days for re-review by the reviewer.

1.10 WORK MAY PROCEED

Before proceeding with any fabrication, installation or erection, advice must be obtained from the named reviewers that work may proceed. Where no named reviewer has been nominated advice must be obtained from the contract administrator.

2 SELECTIONS

2.1 SHOP DRAWING FORMAT

Submit the shop drawings in the following format

	Format/Size
Hardcopy	Full Size
Electronic copy	PDF
CAD file	BIM Model (**Revit**) or (**IFC files**) and **.dwg**



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1235S1 SCHEDULE OF SHOP DRAWINGS

1 GENERAL

This schedule section identifies work sections in the specification that have requirements for the preparation, submission and review of shop drawings.

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1235 SHOP DRAWINGS
- Identified Work Sections

Shop drawings

1.2 SHOP DRAWINGS

Refer to the following sections:

4571	Automatic Doors
4861MT	Monkeytoe Walkway, Platform & Access Systems
4933	Aluminium Metalwork
5211PP	Potter Aluminium Internal Partitions
5214DP	DuraPlan Toilet Partition Systems
5512DL	Duraplan Commercial Bathroom Fixtures
7451AL	Allproof Level Threshold Drainage Systems
7938PB	Monkeytoe Fall Protection Systems

1.3 SHOP DRAWINGS - ADDITIONAL ITEMS

Refer to separate documentation for shop drawing requirements not contained within this specification.

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1238 AS BUILT DOCUMENTATION

1 GENERAL

This general section relates to common requirements for the preparation, submission and review of as built documentation referred to within this specification and referred to within separate specifications/documents relating to this project. Detailed requirements for as built documentation for particular parts of the work may be included in specific work sections.

1.1 SCHEDULE SECTION

Refer to 1238S1 SCHEDULE OF AS BUILT DOCUMENTATION for work sections contained in this specification that have requirements for as built documentation.

1.2 AS BUILT DOCUMENT REQUIREMENTS

REFER TO AGREEMENT BETWEEN CONTRACTOR AND CLIENT THAT HAS ALREADY BEEN AGREED.

That will take precedence over the below standard as-built requirements

Where requirements for the as built documents and records are not stated in a specific section, they shall include:

As built drawings recording:

- The actual positions as constructed of all sewer, stormwater, sanitary plumbing, piped and ducted services, electrical and mechanical services.
- Inverts and locations of services at key points within the building and at the property lines.
- Dimension services in relation to the structure and building grid lines.
- Ductwork, piping, conduit and equipment, including such items provided for future use.
- Depth of various elements of foundations in relationship to the ground floor level
- Field changes of dimensions
- Other significant deviations and changes which are concealed in construction and cannot be identified by visual inspection
- Access doors and panels

Records of:

- Products and materials selected for alternatives specified
- Approved substitutions and accepted alternatives
- Other approved changes and deviations to items specified.

1.3 PROVISIONAL AS BUILT DOCUMENTS

Prior to practical completion provide provisional/draft as built documents in sufficient detail to allow the principal to operate, maintain, adjust and re-assemble the contract works and to allow for review by the reviewer. Where no named reviewer has been nominated, submit the as built documentation to the contract administrator. Submit in hard copy and electronic form.

1.4 AS BUILT DOCUMENT REVIEW

As built document review indicates only that the reviewer is satisfied that the documents are legible. The review is not a check of the accuracy or completeness of the documents, however the reviewer may comment on any aspect of the documentation and require the documents to be revised and resubmitted. Review of as built documents does not relieve the contractor of responsibility for their correctness.

Where no time is stated in a specific section, allow 10 working days for review by the reviewer. Where a large amount of documentation is involved more time will be necessary.

1.5 COMPLETE AS BUILT DOCUMENTS

Prior to the end of the defects notification/liability period, provide complete as built documents reflecting any review requirements, with all Information of good quality and properly titled, numbered, cross-referenced and dated. Provide documents in sufficient detail to allow the principal to operate, maintain, adjust and re-assemble the contract works. Submit in hard copy and electronic form to the contract administrator.

1.6 AS BUILT DOCUMENTS - ELECTRONIC COPY

Provide an electronic copy of the as built documents in the following format:



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Drawings:	PDF format (in addition provide DWG files if available)
Other documents:	PDF format

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1238S1 SCHEDULE OF AS BUILT DOCUMENTATION

1 GENERAL

This schedule section identifies work sections in the specification that have requirements for the submission of as built documentation.

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1238 AS BUILT DOCUMENTATION
- Identified Work Sections

As built documents

1.2 AS BUILT DOCUMENTS

Refer to the following sections:

5311PI Interior Suspended Ceiling Systems - By Potters

1.3 AS BUILT DOCUMENTS - ADDITIONAL ITEMS

Refer to separate documentation for as built documentation requirements not contained within this specification.

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1239 OPERATION & MAINTENANCE

1 GENERAL

This general section relates to operation and maintenance (O&M) documentation referred to within this specification and referred to within separate specifications/documents relating to this project. This documentation is required by the principal so that they can operate and maintain the contract works.

1.1 SCHEDULE SECTION

Refer to 1239S1 SCHEDULE OF OPERATION & MAINTENANCE INFO for work sections contained in this specification that have requirements for:

- Information for operation and maintenance
- Operation and maintenance manuals
- Maintenance contract proposals

Operation and maintenance documents

1.2 OPERATION AND MAINTENANCE INFORMATION

Provide operation and maintenance documentation necessary to operate and maintain the works. This documentation is to include:

- Contractors name and contact details.
- A complete list of subcontractors' names, addresses and telephone numbers noting which portions of the contract each provided.
- A complete list of equipment and appliances including serial numbers, manufacturers' names and sources of supply.
- Copies of all manufacturers' and suppliers' product literature containing maintenance requirements/instructions, for any products in the building work.
- Information for operation and maintenance as required by work sections.
- Operation and maintenance manuals as required by work sections.
- Maintenance contract proposals as required by work sections.
- Final as built documents.
- Originals of all warranties and guarantees properly executed.
- Other information listed or referred to in this general section.
- Operation and maintenance information required by other project documents.

1.3 MAINTENANCE REQUIREMENTS

Provide details of any maintenance requirements required by the Building Act. In addition provide maintenance requirements for items including:

- Details of suggested building washing programme.
- Details of suggested re-painting programme.
- Location of flushing points for sub soil drainage systems.
- Location of surface water filter systems requiring regular cleaning.
- Overflow relief gully location and means of keeping charged.

1.4 EQUIPMENT AND APPLIANCE MANUALS AND OPERATING INSTRUCTIONS

Provide equipment and appliance manuals and operating information including details of all isolating valves and switches.

1.5 SELECTIONS INFORMATION

Provide details of actual selections used in the construction of the works including:

- Tapware type and supplier details.
- Sanitary ware including accessories type and supplier details.
- Light fitting type and supplier details.
- Door hardware type and supplier details.
- Carpet type and colour including underlay and the supplier details.
- Vinyl flooring type and colour including supplier details.
- Overlay timber floor type and supplier details.
- Tile type and supplier details.
- Fire supplier details.
- Aluminium joinery system and finish.
- Paint type and colours used.

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Include brochures and other information included with the items supplied.

1.6 SELECTIONS INFORMATION - SUBSTITUTIONS

Provide details of any selections used in the construction of the works that are different from what was specified.

Documentation format

1.7 O&M DOCUMENTATION FORMAT

Unless otherwise specified in a work section,

- Provide O&M drawings at scales appropriate to the detail to enable good legibility.
- Provide manufacturers documentation at the original scale.
- Provide written text generally in A4 format using a font not less than 10 point.

Submit O&M documentation in both hard copy and as electronic portable document format (PDF) files.

Submission and review

1.8 O&M DOCUMENTATION SUBMISSION & REVIEW

Unless otherwise specified in a work section, provide draft O&M documentation no later than the date of practical completion or the date on which the principal takes occupation of the works, whichever occurs first.

Submit O&M documentation to the named reviewer for review.

- Where no time is stated in a specific section, allow 10 working days for review by the reviewer. Where a large amount of documentation is involved more time will be necessary.
- Where no person is named in a specific section as the reviewer, submit the O&M documents to the contract administrator.
- Submit a proposed index system (as required for final documentation) to the contract administrator for review.

O&M review indicates only that the reviewer is satisfied that the documents are legible. The review is not a check of the accuracy of the documents, however the reviewer may comment on any aspect of the documentation and require the documents to be revised and resubmitted. Review of operation and maintenance documentation does not relieve the contractor of responsibility for the correctness of the documentation.

The reviewer may advise that:

- The O&M documentation has been reviewed and has been accepted without the need for further modification. The information can be included in the final documentation; or
- The O&M documentation has been reviewed and the information can be included in the final documentation subject to revision required by notes, annotations or comments provided; or
- The O&M documentation has been reviewed and is not acceptable, refer to notes, annotations or comments provided. Resubmit corrected/altered documentation for review.

Amalgamate the reviewed accepted and corrected O&M documentation into the final O&M documentation

Final documentation

1.9 SUBMISSION OF FINAL DOCUMENTATION

Prior to the end of the defects notification/liability period, provide complete O&M documentation in both hardcopy and electronic form.

1.10 FINAL O&M DOCUMENTATION - HARDCOPY

Provide the hard copy version of the O&M documentation in a loose-leaf binder with a contents index identifying operation and maintenance documents, requirements, manuals, operating instructions and selections. In addition include the project name, contractor's name and the date of practical completion on the index page.



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Include indexed sections to identify all operation and maintenance manuals that are not contained within the binder. Provide a copy of the front cover or other identifying feature of the manual within the section with a note stating "this manual has been provided separately".

Provide a title on the binder edge "Operation and maintenance instructions for (project name)". If more than one binder is required identify each binder by number and ranking (e.g. Volume 2 of 3) and group information logically between the binders for ease of reference.

Provide operation and maintenance manuals clearly and neatly marked on the spine or front cover so as to identify the project name. Where operation and maintenance manuals are a collection of loose leaf documentation, provide documentation in a loose-leaf binder as described above.

1.11 FINAL O&M INFORMATION - ELECTRONIC COPY

Provide a copy of all hardcopy information in PDF format arranged in logical named folders. In addition provide DWG files of documentation if available.

1.12 REVIEW OF FINAL DOCUMENTATION

The contract administrator may review the final documentation and require alteration and resubmission.

2 SELECTIONS

O&M Documentation

2.1 FINAL DOCUMENTATION - INFORMATION FOR OPERATION AND MAINTENANCE

Provide a complete electronic copy to the contract administrator.

Provide two hardcopy sets of completed O&M documentation to the contract administrator. At least one set is to contain all available original documentation. The contractor is to retain a third hardcopy set for their records.

Provide any documentation (including required original documentation) as required to the relevant territorial authority.

2.2 FINAL DOCUMENTATION - OPERATION AND MAINTENANCE MANUALS

Provide a complete electronic copy to the contract administrator.

Provide two hardcopy sets of completed maintenance manuals to the contract administrator. At least one set is to contain all available original documentation. The contractor is to retain a third hardcopy set for their records.

Provide any documentation (including required original documentation) as required to the relevant territorial authority.

Maintenance contract proposals

2.3 MAINTENANCE CONTRACT PROPOSALS

Unless otherwise specified in a work section, provide maintenance contract proposals to the contract administrator no later than the date of Practical Completion. Provide in electronic and hardcopy form.



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1239S1 SCHEDULE OF OPERATION & MAINTENANCE INFO

1 GENERAL

This schedule section identifies work sections in the specification that have requirements for the submission of:

- Information for operation and maintenance
- Operation and maintenance manuals
- Maintenance contract proposals

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1239 OPERATION & MAINTENANCE
- Identified Work Sections

Information for operation and maintenance

1.2 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the following sections:

4241DC	Dimond Dimondclad Interlock Cladding
4571	Automatic Doors
5171HI	James Hardie® Internal Fire & Acoustic Wall Systems
5214DP	DuraPlan Toilet Partition Systems
5241HF	Hallmark Fire & Acoustic Doors & Windows
5311PI	Interior Suspended Ceiling Systems - By Potters
6411AD	Advance Vinyl Surfacing
6413A	Advance Rubber Surfacing
6512AC	Advance Carpet Tiles
6612AM	Advance Entry Mats & Carpet
6614JT	Jacobsen Tredsafe Nosings & Transitions
6745R	Resene Protective Coatings - Steelwork
8262VW	Vanguard Vehicular Management

Operation and maintenance manuals

1.3 OPERATION AND MAINTENANCE MANUALS

Refer to the following sections:

7938PB	Monkeytoe Fall Protection Systems

Maintenance contract proposals

1.4 MAINTENANCE CONTRACT PROPOSALS

Refer to the following sections:

7938PB	Monkeytoe Fall Protection Systems

Additional Items

1.5 ADDITIONAL ITEMS

Refer to separate documentation for the submission of operation and maintenance requirements not contained within this specification.



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1270 CONSTRUCTION

1 GENERAL

This GENERAL section relates to common requirements for construction issues including:

- Quality control and assurance
- Noise and nuisance
- Set-out and tolerances
- Common execution requirements
- Qualifications
- Common product requirements
- Common requirements for samples and prototypes
- Common requirements for spare and maintenance products
- Cleaning during the works
- Removal of protection
- Completion requirements
- Commissioning
- Practical completion submission
- Defects period submissions
- Completion submissions

1.1 SCHEDULE SECTION

Refer to 1270S1 SCHEDULE OF SAMPLES & PROTOTYPES for work sections contained in this specification that have requirements for samples and prototypes.

Refer to 1270S2 SCHEDULE OF SPARES & MAINTENANCE PRODUCTS for work sections contained in this specification that have requirements for spares and maintenance products.

Quality control and assurance

1.2 QUALITY ASSURANCE

Carry out and record regular checks of material quality and accuracy, including:

- Concrete quality and finish.
- Dimensional accuracy of structural column locations (following completion of foundations).
- All perimeter columns and frames for plumb.
- Levels of all floors relative to the site datum.
- Framing timber moisture content.

Where any material, quality or dimension falls outside specified or required tolerances, obtain written direction from the contract administrator. Where building consent approval is affected, confirm remedial action with the Building Consent Authority.

Provide all materials, plant, attendances, supervision, inspections and programming to ensure the required quality standards are met by all project personnel.

1.3 PROVIDE QUALITY PLAN

Prepare a quality plan for the execution of the contract works and submit a copy of the quality plan to the Contract Administrator within 10 Working Days of the date of award of the contract. The quality plan shall describe the procedures for meeting the requirements of the contract in respect of:

- Materials and workmanship
- Monitoring and maintaining subcontractors' performance
- Record keeping
- The level of documentation for signing off the contract works as complete
- Procedures to ensure that all persons engaged in undertaking the contract works are qualified, experienced and trained for the work they are undertaking
- Inspection and testing required by the contract
- Auditing the quality plan

1.4 NOTIFIABLE WORK

Lodge notice of the intention to commence any notifiable work and any work that will at any time include any notifiable work, in accordance with Health and Safety in Employment Regulations 1995.

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Noise and nuisance

1.5 LIMIT CONSTRUCTION NOISE

Minimise the effects of noise generation by including in the planning of the work such factors as placing of plant, programming the sequence of operations and other management functions. Limit construction noise to comply with the requirements of NZS 6803, the requirements of the Resource Management Act sections 326, 327 and 328 and the Health and Safety in Employment Regulations 1995 clause 11.

1.6 ACCEPTABLE NOISE LEVELS

Refer to NZS 6803 Tables 2 and 3 for the upper limits of construction work noise received in residential zones, dwellings in rural areas, industrial areas and commercial areas, note also the allowed adjustments. Do not exceed these limits or any limits imposed by regional councils or territorial authorities.

1.7 PROVIDE INFORMATION TO NEIGHBOURS

Provide information to neighbours of any noise generation from the site liable to constitute a problem. Explain to them the means being used to minimise excessive noise and establish with them the timings most suitable for the noise generating work to be carried on.

Discuss with any complainant the measures being used to minimise noise. Where possible modify these measures to accommodate particular circumstances. Finally, determine the sound level at the location under discussion using methods and observation reporting as laid down in NZS 6803. If the noise level is above the upper limits of NZS 6803, table 2 and table 3, cease the noise generating operation and remedy the problem.

1.8 INCONVENIENCE TO OTHERS

When the works are to be carried out in or around occupied premises, ascertain the nature and times of occupation and use. Carry out the works in a manner to minimise inconvenience, nuisance and danger to occupants and users.

1.9 ROADWAY AND FOOTPATH

Keep the adjacent footpath and road clear at all times. Where work must be carried out in the roadway or footpath, obtain required consents from the territorial authority. Where temporary use is made of the footpath or roadway for deliveries and the like ensure that public safety is protected and the goods and materials moved as soon as practicable. Sweep, wash and otherwise clean the roadway/footpath and restore it to its previous condition.

1.10 VEHICLE CROSSING

Make good damage that has occurred as a result of carrying out the contract works. Where there has been significant damage, contact the territorial authority and obtain instructions for making good. Pay the territorial authority costs associated with making good.

1.11 TRAFFIC SAFETY

The management of traffic safety on-site and related traffic off-site, to WorkSafe Managing Work Site Traffic - Good Practice Guidelines. Movement on- and off-site also to territorial authority and/or NZTA requirements.

1.12 DIRT AND DROPPINGS

Remove dirt and droppings deposited on public or private thoroughfares from vehicles servicing the site to the satisfaction of the appropriate authorities and the contract administrator.

1.13 DAMAGE AND NUISANCE

Take precautions to prevent damage and nuisance from water, fire, smoke, dust, rubbish and all other causes resulting from the construction works.

1.14 SMOKE FREE REQUIREMENTS

In accordance with the Smoke Free Environments Act 1990 smoking is not allowed on site.

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Set-out and tolerances

1.15 SURVEY INFORMATION

Locate and verify survey marks and datum points required to set out the works. Where these do not exist or cannot be located advise the contract administrator who will arrange for the required points to be established.

Record and maintain their position. Re-establish and replace disturbed or obliterated marks.

1.16 DATUM

Establish a permanent site datum to confirm the proposed levels and their relationship to all other existing and new levels.

1.17 SET-OUT

Set out the work to conform with the drawings.

1.18 SET-OUT BY LICENSED CADASTRAL SURVEYOR

Before commencing construction provide the contract administrator with a certificate prepared by a licensed cadastral surveyor that the set-out is complete and that the building is accurately placed on the site.

During construction provide the contract administrator with a certificate, prepared by the same licensed cadastral surveyor confirming the set-out of the foundations and grid lines. Necessary adjustments are to be determined and agreed to by the contract administrator before proceeding further.

1.19 USE OF SET-OUT INSTRUMENTS

Permit without charge, the use of instruments already on site for checking, setting out and levels.

1.20 CHECK DIMENSIONS

Check all dimensions both on drawings and site, particularly the correlation between components and work in place. Take all dimensions on drawings to be between structural elements before linings or finishes, unless clearly stated otherwise.

1.21 TOLERANCES

All work to be level, plumb, and true to line and face. Unless otherwise specified in specific work sections of this specification, tolerances for structural work shall comply with the following:

Concrete construction:	To NZS 3109 Concrete construction Clause 3.9 Tolerances for reinforcement Table 5.1 Tolerance for precast components Table 5.2 Tolerance for in situ construction To NZS 3114 Concrete surface finishes
Masonry construction:	To NZS 4210 Masonry construction: Materials and workmanship Clause 2.6.5 Tolerances Table 2.2 Maximum tolerances
Structural steelwork:	To NZS 3404.1 Steel structures standard Section 14.4 Tolerances (after fabrication) Section 15.3 Tolerances (erection)
Timber framing:	To NZS 3604 Timber-framed buildings Clause 2.2 Tolerances Table 2.1 Timber framing tolerances

Refer to work sections for tolerance requirements for finishes.

Execution

1.22 EXECUTION GENERALLY

Construct the work in accordance with the documents issued for construction including any direction that may have been given by the contract administrator that varies the construction document.

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1.23 EXECUTION - NO DETAIL IS PROVIDED

The documents issued for construction will not include all details relating to every material, junction and interface with other materials.

Where the detail provided is of a general nature, or where no detail is provided, refer to the manufacturer's documents for information relating to installation and execution of that part of the work.

Where there is more than one method or detail appropriate to the part of the work in question, refer the options to the Contract Administrator for direction as to which detail or method to use.

1.24 EXECUTION - ACCEPTABLE SOLUTION IS REFERRED TO

Where a NZBC Acceptable Solution is referred to in the specification but not shown on the plans, obtain a copy of that Acceptable Solution and make it available to the workers carrying out that part of the work.

1.25 MINIMISE DELAYS DUE TO WEATHER

Use appropriate techniques and methods to prevent damage and minimise delays due to weather.

Defective or damaged work

1.26 DEFECTIVE OR DAMAGED WORK

Repair defective, damaged and marked elements, or replace them where repair is not possible or will not be acceptable. Adjust operation of equipment and moving parts not working correctly. Refer to individual work sections for any special requirements.

Hot work - fire safety

1.27 HOT WORK

Generally, to NZS 4781 Code of Practice for Safety in Welding and Cutting, includes but not limited to: Welding; flame cutting; disc cutting; grinding; bitumen blowers; blow lamps; brazing; burning off; soldering; use of hot air guns.

Note - where the standard refers to the use of asbestos, alternative fire-resistant materials are to be used.

1.28 COMBUSTIBLE MATERIAL

Manage fire risk to adjacent combustible materials by isolating hot work at a safe distance away, or store combustible materials away from fire hazards. Additional precautions may be necessary if combustible material cannot be separated from hot work, refer to NZS 4781, 6.1.4.

1.29 HOT WORK PERMIT

A hot work permit, issued by the main contractor, is required when it is not possible to isolate hot work from adjacent fire hazards. Refer to example in NZS 4781, Appendix A.

1.30 FIRE SYSTEMS

Fire systems should remain operational where possible while welding or cutting work is performed. Where required, shield fire systems to NZS 4781 clause 6.4.

1.31 DURING SUSPENDED WORK

Maintain a fire watch at least 30-minutes after hot works are suspended e.g. during lunch breaks or overnight, to NZS 4781, clause 6.2.7.

For hot works in confined spaces, prevent potential ignition of flammable gases, to NZS 4781 clause 6.5.

Qualifications

1.32 QUALIFICATIONS GENERALLY

The work is to be carried out by workers and / or supervisors who are experienced, competent and familiar with the materials and the techniques specified. Workers must also be familiar with the manufacturers' and suppliers' installation and application instructions and standard details provided by them in relation to the use of the products for this project. If requested provide evidence of qualification / experience.

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1.33 QUALIFICATIONS WORKERS – RESTRICTED BUILDING WORK

Where restricted building work (RBW) forms part of the contract works, workers, or supervisors of that work must be licensed building practitioners (LBP) holding current licenses for the particular restricted building work.

For rare instances where non-RBW also requires an LBP refer to individual work sections for details.

1.34 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Where required by a manufacturer or supplier, workers must be specifically trained /approved / accredited / registered / licensed / certified by them. Refer to individual work sections for details.

1.35 QUALIFICATIONS WORKERS – LICENSED UNDER STATUTE

Where workers and / or supervisors of work are required to be licensed, registered or similar under legislation, they must have a current license before they start the work and maintain currency until their part of the work has been completed and all documentation that is required has been provided.

1.36 QUALIFICATIONS WORKERS – INDUSTRY QUALIFICATION REQUIREMENTS

Where workers and / or supervisors of work are required to be trained / licensed / certified or similar under industry rules or contractual requirements, they must have a current qualification before they start the work and maintain currency until their part of the work has been completed. Refer to individual work sections for details.

1.37 QUALIFICATIONS – PRODUCER STATEMENTS

Where producer statements are required for parts of the work, ensure that person is suitably qualified and authorized to issue such producer statements.

Products

1.38 NEW PRODUCTS

Products to be new unless stated otherwise, of the specified standard, and complying with all cited documents.

1.39 COMPATIBILITY OF PRODUCTS

Ensure all parts of a construction or finish are compatible and their individual use approved by the manufacturers and suppliers of other parts of the system. Source all parts of a system from a single manufacturer or supplier.

1.40 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Protect products during transit and delivery on site and / or off site. Reject and replace goods that are defective or damaged or will not provide the required finish.

Handle products carefully to avoid damage and distortion and in accordance with codes of practice and the manufacturer's or supplier's requirements. Avoid any contact with potentially damaging surfaces or conditions.

Store products to avoid visual damage, environmental damage, mechanical damage and distortion. Store in accordance with codes of practice and the product manufacturer's or supplier's requirements. Maintain the proper condition of any protective packaging, wrapping and support.

Refer to individual work sections for any special requirements.

1.41 SUBSTRATE CONDITIONS

Ensure substrate conditions are within the manufacturer's or supplier's stated guidelines both before and during the installation of any material, product or system. Obtain written instructions on the necessary action to rectify unsatisfactory conditions.

1.42 INSTALLING PRODUCTS

Install in accordance with the manufacturer's or supplier's technical literature. Ensure that all installers are familiar with the required substrate conditions and the manufacturer's or supplier's specified preparation, fixing and finishing techniques.


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1.43 COMPLY WITH STANDARDS

Comply with the relevant and/or cited Standard for any material or component. Obtain certificates of compliance when requested by the contract administrator.

1.44 CONDITION OF PRODUCTS

To be in perfect condition when incorporated into the work.

1.45 INCOMPATIBLE PRODUCTS

Separate incompatible materials and metals with separation layers, sleeves or gaskets of plastic film, bituminous felt or mastic or paint coatings, installed so that none are visible on exposed surfaces.

Samples

1.46 SAMPLES FOR REVIEW

Where specified in the work sections submit samples and any nominated supporting documentation to the named reviewer and notify the contract administrator of the submission. Where no person is named as the reviewer, submit to the contract administrator.

Samples for review may be described as a portable sample for review, portable control sample, fixed sample for review or fixed control sample. A portable sample refers to a sample that is easily movable, convenient for carrying. A fixed sample refers to a sample that is not portable. If the location of a fixed sample is not defined in the work section, obtain direction from the contract administrator.

For samples that are located on site, or by agreement with the contract administrator are located off site, notify the reviewer and contract administrator of their location and availability for review.

Timing for the provision and review of samples is to be included in the contract programme. Where no time is stated in a work section allow 10 working days for each review. Allow for such resubmission and further review as may be required. No extension of time will be allowed for resubmission and further review.

Obtain written instructions in relation to the samples from the contract administrator. Do not proceed further with related work items until advised to continue.

Samples may be incorporated in the finished work if confirmed in writing by the contract administrator, otherwise allow to completely remove any fixed samples. Remove from the site any rejected samples.

Refer to SAMPLES clauses in work sections for further detail.

1.47 CONTROL SAMPLES

Samples become control samples if an instruction is given by the contract administrator to that effect. Control samples will be used for comparison purposes throughout the contract. Control samples may be portable or fixed in place, refer to SAMPLES clauses in work sections for further detail.

Control samples that are to remain on site, or otherwise in the care of the contractor, are to be maintained in original condition.

If confirmed by the contract administrator, fixed control samples may be incorporated in the finished work, otherwise allow to remove fixed control samples from site when instructed by the contract administrator.

1.48 OTHER SAMPLE REQUIREMENTS

Where specified in the work sections obtain samples for the purposes described.



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Prototypes

1.49 PROTOTYPES - TESTING

Where specified in the work sections provide and test prototypes. Timing for the provision, testing, disassembling, re-assembling, retesting and review of prototypes and test results is to be included in the contract programme. Where no time is stated in a work section allow 10 working days for each review of test results. Submit test results to the named reviewer and to the contract administrator. Where no person is named as the reviewer submit test results to the contract administrator.

Obtain written instructions in relation to the prototype from the contract administrator. Do not proceed further with related work items until advised to continue.

Refer to PROTOTYPES - TESTING clauses in work sections for further detail.

1.50 PROTOTYPES - REVIEW

Where specified in the work sections provide prototypes for review. Timing for the provision, disassembling, re-assembling and review of prototypes is to be included in the contract programme. Where no time is stated in a work section allow 10 working days for review by the named reviewer. Where no person is named as the reviewer notify the contract administrator for direction.

Obtain written instructions in relation to the prototype from the contract administrator. Do not proceed further with related work items until advised to continue.

Refer to PROTOTYPES - REVIEW clauses in work sections for further detail.

1.51 PROTOTYPES - GENERAL

Refer to the PROTOTYPES - TESTING and PROTOTYPES - REVIEW clauses in work section for details on what is to happen after the review and or testing of the prototype is complete. Where no information is provided refer to the contract administrator for direction.

Prototypes may become control samples if an instruction is given by the contract administrator to that effect.

Spares & maintenance products

1.52 SPARES & MAINTENANCE PRODUCTS

Collect, protect, package, label and store safely all spares and maintenance products specified in the work sections. Give the contract administrator an inventory of all spares and maintenance products.

If no instruction is given within a work section for the location of spares and maintenance products, then deliver to the owner ~.

If no instruction is given within a work section for timing in relation to the provision of spares and maintenance products, then provide at practical completion.

Refer to SPARES & MAINTENANCE PRODUCTS clauses in work sections for further detail.

Cleaning during the works

1.53 PERIODIC SITE CLEANING

Carry out periodic site cleaning during the contract period. Place waste material in appropriate storage pending removal from the site. Keep food waste separate from construction waste.

1.54 TRADE CLEANING

Keep the work area clean, remove of all debris, unused and temporary materials and elements from the site as work progresses and on completion. Refer to individual work sections for any specific requirements.

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Remove protection

1.55 REMOVE PROTECTION

Remove all temporary markings, labels, packaging and coverings to products unless instructed otherwise, or where they are required for protection.

Maintain temporary protection until removal is required by the manufacturer/supplier, the execution of the work or the requirements of individual work sections. Re-establish protection as necessary.

Remove temporary protection and special protection immediately prior to practical completion or before when there is no further risk of damage.

Refer to individual work sections for any special removal requirements.

Completion

1.56 SPECIAL REQUIREMENTS

Refer to individual work sections for any special completion requirements.

1.57 LEAVE WORK

Leave work to the standard required for the following procedures.

1.58 COMPLETION - TESTS & CERTIFICATION

Carry out tests as detailed in the work sections. If testing identifies a failure to meet performance requirements, notify the contract administrator and any nominated recipient, identify and correct the cause of failure and repeat the test. Submit test results and certification documentation to the contract administrator and any nominated recipient.

1.59 REMOVE CONSTRUCTION WASTE

Remove all debris, unused materials and the like from the site. Arrange for material to be recycled to be collected or delivered to the recycler.

1.60 COMPLETE ALL SERVICES

Ensure all services are complete and operational, with all temporary labelling removed, required labelling fixed and service instructions provided.

1.61 CLEANING BY CONTRACTOR

Clear the contract works of all construction materials, waste, dirt and debris. Clean the contract works including:

- Wipe all surfaces to remove construction dust.
- Clean out service ducts and accessible concealed spaces.
- Clean out all gutters and rainwater heads.
- Wipe dust from both sides of glass. Take particular care when removing paint or cementitious materials to not damage the glass. Do not use metal scrappers that may damage the glass.
- Remove adhesive residue left by labels and other temporary protection/markings.
- Clean out the interior of all cabinetry.
- Wash down external concrete including driveways and concrete masonry. Take care when waterblasting to not cause damage to the surface or allow water to enter the building.
- Remove rubbish and building material from the area immediately adjacent to the contract works.

Commissioning

1.62 SPECIAL REQUIREMENTS

Refer to individual work sections for any special commissioning requirements.

1.63 MOVING PARTS

Adjust, ease and lubricate all doors, windows, drawers, hardware, appliances, controls and all moving parts to give easy and efficient operation.

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1.64 COMMISSIONING - TESTS & CERTIFICATION

Carry out tests as detailed in the work sections. If testing identifies a failure to meet performance requirements, notify the contract administrator and any nominated recipient, identify and correct the cause of failure and repeat the test. Submit test results and certification documentation to the contract administrator and any nominated recipient.

1.65 INSTRUCTION AND DEMONSTRATION

Provide instruction and demonstration to the owner/occupier to the extent that is listed below and as required for them to reasonably occupy and use the building. This is to include at least the following:

- Location and isolation of all services connections.
- Operation of all emergency systems.
- Locking and security arrangements.
- Operation of basic building services including lighting, heating, mechanical ventilation, air conditioning and security.
- Special cleaning requirements and procedures.
- Any other features that the owner/occupier needs to know about.

1.66 SECURITY AT COMPLETION

Remove any temporary lock cylinders and complete final keying prior to handing over keys to the principal on completion of the works. Leave the works secure with all accesses locked. Account for all keys/cards/codes and hand to the principal along with an itemised schedule, retaining a duplicate schedule signed by the principal as a receipt.

Practical completion submission

1.67 ADDITIONAL PRACTICAL COMPLETION INFORMATION

In addition to requirements in the contract and contained elsewhere in the specification provide the following information submissions for practical completion:

- All documents which the contractor has obtained on behalf of the owner/occupier.
- Information required by the owner/occupier to be able to use the building.
- Advice that NUO accounts in the contractor's name have been closed and as appropriate changed to be in the name of the owner/occupier.
- A list of persons to be contacted to carry out any emergency or remedial work including 24 hour/7 day contact details.

1.68 ADDITIONAL PRACTICAL COMPLETION REQUIREMENTS

Refer to the conditions of contract for the definition of practical completion and the conditions relating to practical completion.

In addition to the requirements in the contract, the following conditions also apply:

- ~

Defects period submissions

1.69 DEFECTS REMEDIATION - SUBMISSIONS

Provide the following at periods required by the contract administrator, where no period is stated, provide this information monthly:

- A copy of the contractor's check list identifying remaining defects and omissions to be completed recording progress made in completing and correcting the items.
- A copy of lists issued by the principal/employer identifying omissions and defects recording progress made in completing and correcting the items.
- A copy of lists issued by the contract administrator identifying omissions and minor defects recording progress made in completing and correcting the items.

Completion submissions

1.70 FINAL COMPLETION - SUBMISSIONS

In addition to requirements in the contract and contained elsewhere in the specification provide:

- Contractors advice that all defects have been corrected and omissions and deferred work completed.
- All documents which the contractor has obtained on behalf of the owner/occupier.

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1270S1 SCHEDULE OF SAMPLES & PROTOTYPES

1 GENERAL

This schedule section identifies work sections in the specification that have requirements for:

- The submission of samples
- The submission of prototypes for review
- The provision and testing of prototypes

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1270 CONSTRUCTION
- Identified Work Sections

Samples

1.2 SAMPLES

Refer to the following sections:

4933	Aluminium Metalwork
6745R	Resene Protective Coatings - Steelwork

1.3 SAMPLES - ADDITIONAL ITEMS

Refer to separate documentation for sample requirements not contained within this specification.

Prototypes

1.4 PROTOTYPES - REVIEW

Refer to the following sections:

4821	Flashings

1.5 PROTOTYPES - TESTING

There are no work section requirements.

1.6 PROTOTYPES - ADDITIONAL ITEMS

Refer to separate documentation for prototype requirements not contained within this specification.



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1270S2 SCHEDULE OF SPARES & MAINTENANCE PRODUCTS

1 GENERAL

This schedule section identifies work sections in the specification that have requirements for spares and maintenance products.

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1270 CONSTRUCTION
- Identified Work Sections

Spares & maintenance products

1.2 SPARES & MAINTENANCE PRODUCTS

Refer to the following sections:

6211	Wall Tiling Systems
6221	Floor Tiling Systems
6512AC	Advance Carpet Tiles

1.3 SPARES & MAINTENANCE PRODUCTS - ADDITIONAL ITEMS

Refer to separate documentation for sample requirements not contained within this specification.

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1278SR SCHEDULE OF SLIP RESISTANCE TESTING

1 GENERAL

This section relates to the testing of surfaces for slip resistance. It includes:

- test methods and minimum test values required for slip resistance testing.
- general reporting requirements.

This section includes schedules identifying work sections with:

- slip resistant surfaces exempt from testing and slip resistant surfaces that have been tested and comply with NZBC D1/AS1 requirements for testing.
- surfaces that require slip resistance testing.

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- Work sections identified in the schedule(s)

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

BPN	British Pendulum Number
COF	Coefficient of friction
SDV	Slope design value
SRV	Slip resistance value

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC D1/AS1	Access routes
AS 4586	Slip resistance classification of new pedestrian surface materials

Slip resistance - surfaces not requiring testing

1.4 SLIP RESISTANCE - SURFACES EXEMPT FROM TESTING

Walking surfaces on access routes that do not require testing for slip resistance include surfaces identified in NZBC D1/AS1, Table 2 as acceptable. These surfaces are covered in the following Work sections:

6221	Floor Tiling Systems
6411AD	Advance Vinyl Surfacing

1.5 SLIP RESISTANCE - PREVIOUSLY TESTED SURFACE

Walking surfaces on access routes that have previously been tested for slip resistance and found to comply with NZBC D1/AS1 requirements are covered in the following Work sections:

6411AD	Advance Vinyl Surfacing
6413A	Advance Rubber Surfacing
6614JT	Jacobsen Tredsafe Nosings & Transitions

Slip resistance - surfaces requiring testing

1.6 SLIP RESISTANCE - SURFACES REQUIRING TESTING

There are no work section requirements.

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1.7 TEST METHODS & MINIMUM TEST VALUES

Refer to tables below for test methods and minimum test values required for the stated test condition.

Test condition:	Minimum test value required:	Test method:
Level access wet	39 SRV	Wet pendulum test method of AS 4586, Appendix A using the Slider 96 rubber.
Sloping access wet	Refer to sloping access wet table below, select BPN value for stated slope.	Wet pendulum test method of AS 4586, Appendix A
Stairs wet - with slip resistant nosings	39 SRV	Wet pendulum test method of AS 4586, Appendix A using the Slider 96 rubber.
Stairs wet - without slip resistant nosings	50 BPN	Wet pendulum test method of AS 4586, Appendix A
Wet areas primarily used barefoot	“B” Classification	Obtain classification from the ramp method of AS 4586, Appendix C
Level access dry	0.4 COF	Obtain slip resistance value from the dry floor friction test method of AS 4586, Appendix B
Sloping access dry	Refer to sloping access dry table below, select COF value for stated slope.	Obtain slip resistance value from the dry floor friction test method of AS 4586, Appendix B
Stairs dry - with slip resistant nosings	0.4 COF	Obtain slip resistance value from the dry floor friction test method of AS 4586, Appendix B
Stairs dry - without slip resistant nosings	0.525 COF	Obtain slip resistance value from the dry floor friction test method of AS 4586, Appendix B
Contaminated walking surfaces	R~	Obtain classification from the oil-wet inclining platform test method of AS 4586, Appendix D

Sloping access wet - minimum test values required for a given slope

Minimum test value required (SDV)	Maximum gradient	Maximum slope in degrees
42 BPN	1 in 39	1.5°
43 BPN	1 in 29	2.0°
44 BPN	1 in 23	2.5°
45 BPN	1 in 20	3.0°
45 BPN	1 in 17	3.5°
46 BPN	1 in 15	4.0°
47 BPN	1 in 13	4.5°
48 BPN	1 in 12	5.0°
49 BPN	1 in 11	5.5°
50 BPN	1 in 10	6.0°

Sloping access dry - minimum test values required for a given slope

Minimum test value required (COF)	Maximum gradient	Maximum slope in degrees
0.433	1 in 39	1.5°
0.444	1 in 29	2.0°
0.455	1 in 23	2.5°
0.466	1 in 20	3.0°
0.477	1 in 17	3.5°

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0.488	1 in 15	4.0°
0.499	1 in 13	4.5°
0.504	1 in 12	4.76°
0.521	1 in 11	5.5°
0.525	1 in 10	5.7°
0.543	1 in 9	6.5°
0.557	1 in 8	7.125°

1.8 GENERAL REPORTING REQUIREMENTS

Provide slip resistance test results to the contract administrator, including a statement that the tested surface meets or exceeds the nominated minimum test value. Refer to individual work sections for additional requirements. If no time is nominated for the submission of test results in the work section, then provide test results prior to practical completion.

If testing identifies a failure to meet performance requirements, notify the contract administrator and manufacturer/supplier. Consult with the manufacturer/supplier to identify the cause, then correct the failure and repeat the test.

Slip resistance - additional items

1.9 SLIP RESISTANCE - ADDITIONAL ITEMS

Refer to separate documentation for slip resistance requirements not contained within this specification.



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2242 BACKFILLING

1 GENERAL

Refer to Structural Engineering specification for requirements



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3102 CONCRETE WORK - STANDARD

1 GENERAL

This section relates to formwork, reinforcement, concrete mixes and the placing of concrete. **REFER TO STRUCTURAL ENGINEERS DOCUMENTATION WHICH SHALL TAKE PRECEDENCE IN TERMS OF STRUCTURE.**

1.1 RELATED WORK

Refer to the appropriate concrete section for concrete requirements

Refer to Engineers Specification and Drawings

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

DPM	Damp proof membrane
MPa	Megapascal
CCANZ	Concrete NZ (Legacy Documents)

The following definitions apply specifically to this section:

ACRS	Australasian Certification Authority for Reinforcing and Structural Steels - An independent certification scheme for reinforcing steel and structural steel. Certifies compliance with Australia/New Zealand Standards. Web site - www.steelcertification.com
CNZ PAS:	Concrete New Zealand Plant Audit Scheme - an independent audit scheme for the production of concrete which certifies compliance with NZS 3104 Specification of Concrete Production. Web site: http://rmcplantaudit.org.nz

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B1/AS1	Structural provisions for buildings
NZBC E2/AS3	External moisture provisions for concrete and concrete masonry buildings
AS 1366.3	Rigid cellular plastics for thermal insulation - Rigid cellular polystyrene - Moulded (RC/PS - M)
AS 1478	Chemical admixtures for concrete, mortar and grout - Admixtures for concrete.
AS/NZS 2269.0	Plywood - Structural - Specifications
AS/NZS 3000	Electrical installations
NZS 3101.1	Concrete structures standard
NZS 3104	Specification for concrete production
NZS 3109	Concrete construction
NZS 3114	Specification for concrete surface finishes
NZS 3121	Water and aggregate for concrete
NZS 3122	Specification for Portland and blended cements (General and special purpose)
NZS 3125	Specification for Portland-limestone filler cement
NZS 3604	Timber-framed buildings
NZS 3631	New Zealand timber grading rules
NZS 4229	Concrete masonry buildings not requiring specific engineering design
AS/NZS 4671	Steel reinforcing materials

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AS/NZS 4672.1 Steel prestressing materials - General requirements
Concrete NZ TR3 Alkali silica reaction

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

To be confirmed by Contractor

Requirements

1.5 QUALIFICATIONS

Workers to be experienced, competent trades people familiar with the materials and techniques specified.

Performance

1.6 TESTING

Carry out sampling and concrete acceptance tests during construction to NZS 3109.9. **Concrete acceptance tests during construction**. Conduct 7 day strength tests. After a 7 day test result of less than 60% of the specified strength, stop concrete placement until it is shown that the suspect concrete compiles with the specification.

Carry out slump tests, yield tests and air content tests to NZS 3112.1, sections 4, 5 and 9, and evaluate to NZS 3104.2.15. **Control tests and their evaluation**. Make available all test records to the contract administrator on request.

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1.7 STEEL REINFORCING COMPLIANCE

Steel reinforcing and steel prestressing materials for concrete to AS/NZS 4671 or AS/NZS 4672.1, respectively. Steel reinforcing to be manufactured in New Zealand, or by an overseas manufacturer holding a current valid NZ S Mark or ACRS certificate for that type of steel.

If requested, the supplier to provide certification upon delivery that reinforcing steel complies with the grades specified on the drawings.

Steel that fails to meet these requirements is not to be used (or ordered) without the contract administrators written approval, further proof and/or testing may be required.

1.8 INSPECTIONS

Refer to Structural Specification for requirements

Refer to Consent conditions for requirments

1.9 QUALITY ASSURANCE

Carry out the whole of this work to the requirements of NZS 3109.

Quality assurance procedures to include all aspects of concrete construction including;

- Formwork construction
- Reinforcing steel placing
- Cast in items
- Concrete supply
- Concrete placing and compaction
- Concrete finishes
- Construction tolerances

2 PRODUCTS

Materials

2.1 CEMENT

Portland cement to NZS 3122.

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2.2 CEMENT, FILLER

Portland limestone filler cement to NZS 3125.

2.3 SAND

To NZS 3121

2.4 COARSE AGGREGATE, NORMAL CONCRETE

To NZS 3121, except as modified by NZS 3104: clause 2.5.3, Coarse aggregate. The provisions of Concrete NZ TR3 apply when the aggregate is potentially reactive.

2.5 WATER

To NZS 3121.

2.6 ADMIXTURES, SITE OR PLANT

To AS 1478.

For concrete defined as Normal Concrete(N) to NZS 3104, admixtures may be added at the Plant Engineers discretion as required by concrete producers mix design, subject to the following requirements:

- The quantity of admixture used and the method of mixing to be in accordance with manufacturers recommendations.
- Admixtures containing calcium chloride will not be permitted.
- Concrete must comply with the entrained air requirements of NZS 3101 when the surface is subject to freeze-thaw cycles.
- Additional admixtures may be added to concrete at the Contractor's request to control the set, in response to weather or environmental factors, subject to approval by Engineer.
- Admixtures containing calcium chloride will not be permitted where steel reinforcing is present.

Concrete

2.7 NORMAL CONCRETE

Normal concrete 17.5, 20, 25 MPA up to 50 MPa grade, maximum aggregate size 37.5mm, ready-mixed to NZS 3104 section 2 Provisions for Ready-Mixed Concrete. Refer to SELECTIONS.

Reinforcement

2.8 GRADE 300E STEEL

To AS/NZS 4671. Round bars are shown by symbol "R" and deformed bars by symbol "D", followed by the diameter in millimetres.

2.9 GRADE 500E STEEL

To AS/NZS 4671. Round bars shown by symbol "HR" and deformed bars by symbol "HD" followed by diameter in millimetres.

2.10 WELDED WIRE FABRIC

Hard drawn steel wire spot welded with correct gauge to AS/NZS 4671 Class E, smooth or deformed and to the spacings and dimensions either specified or shown on the drawings.

2.11 MESH FOR SLABS TO NZS 3604 OR NZS 4229

For concrete slab-on-ground designed to NZS 3604 or NZS 4229, mesh to be in accordance to NZBC B1/AS1, welded reinforcing mesh to AS/NZS 4671, Class E, minimum - Grade 500E, 2.27kg/m2 (1.14kg/m2 in each direction).

2.12 TYING WIRE

Mild drawn steel wire not less than 1.2mm diameter.

2.13 SPACERS AND CHAIRS

Precast concrete or purpose made moulded PVC to approval. Where concrete spacer blocks are used in exposed concrete work use blocks similar to surrounding concrete.

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Formwork

2.14 TIMBER BOARDS

Dressing or merchantable grade radiata pine to NZS 3631 for shutter face, to obtain the concrete finish specified.

2.15 PROPRIETARY STEEL

An approved proprietary steel formwork and shutter system for primary concrete pours

2.16 STRUCTURAL PLYWOOD

To AS/NZS 2269.0 for shutter face with plywood grade as necessary to obtain the concrete finish specified.

2.17 RELEASE AGENT

A release agent that will not stain or adhere to the concrete, contaminate reinforcing steel or construction joints, or have a detrimental effect on any finished surface or applied finishes.

Damp proof membrane

2.18 DAMP-PROOF MEMBRANE

0.25mm minimum polyethylene to NZS 3604, 7.5.4, **Damp-proof membrane**.

Accessories

2.19 WATERPROOFING ON CONCRETE SLABS

Refer to Structural Specification for requirements that have been worked through with Naylor Love

2.20 CELLULAR POLYSTYRENE INSULATION

Proprietary polystyrene foam board to AS 1366.3. Refer to SELECTIONS.

3 EXECUTION

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Handle and store reinforcing steel and accessories without damage or contamination. Store on timber fillets on hard ground in a secure area clear of any building operation. Lay steel fabric flat. Ensure reinforcement is clean and remains clean so that at the time of placing concrete it is free of all loose mill scale, loose rust and any other contamination that may reduce bonding capacity.

3.2 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Installation/application

3.3 TOLERANCES OF CONCRETE SURFACE FINISHES

Unless stated otherwise on the drawings, permissible abrupt, offset and gradual deviations for the specified surface finish to remain within the tolerances laid down in NZS 3114: table 3, Tolerances for abrupt deviations or offsets and gradual deviations.

Fix formwork

3.4 LOADINGS

Design and construct formwork and falsework in accordance with in accordance with NZS 3109 Section 5 and sound engineering principles to withstand the worst combination of:

- dead loads of formwork, reinforcement, concrete and precast elements such as floor planks
- construction loads including dynamic effects of placing, compacting and construction traffic
- wind and snow loads

3.5 PROVIDE ALL FORMWORK

Provide formwork and falsework to NZS 3109 Section 5 and to achieve the required off-the-form surface finishes to NZS 3114. Fabricate in a manner permitting its easy removal without damage to the concrete.

Provide a 20mm x 20mm chamfer to all corners unless detailed otherwise. Protect corners from damage during and after stripping.



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Keep absorbent formwork wet before concrete is placed. Clean formwork by waterblasting.

3.6 FALSEWORK

Carry strutting down to a construction sufficiently strong and stable to afford the required support without permissible stress or deflections being exceeded. Prop through to other floors if the construction load on a particular suspended floor exceeds the design load.

3.7 EXPOSED CONCRETE

Formwork linings and surface finishes as nominated for both fair face and concealed or exposed surfaces. Unless detailed, obtain written confirmation of the type and pattern of all joints.

Special consideration to the splices/stitch joint that is exposed to car parking levels

3.8 JOINTS IN FORMS

Construct joints to prevent loss of grout between joints in form linings, as well as between forms and completed work. Column forms to have full height linings so that no horizontal joints occur on exposed faces.

3.9 CAMBERS

Cambers shown on the drawings or specified, relate to the concrete immediately before formwork is struck.

Unless otherwise shown on drawings, construct forms to achieve the following:

- maximum deflection of face materials between strutting: 1/240th of span, but not exceeding 6mm.
- maximum deflection of beams: 1/900th of span
- maximum deflection of cantilevers supporting construction loads: 1/300th of cantilever length.

3.10 STRIKING FORMWORK

Ensure the safe removal of all or any part of the formwork. Remove without shock, vibration or damage to the concrete and in such a manner as to take the imposed stresses gradually to NZS 3109.5.4. Stripping times to NZS 3109 table 5.3.

Install damp proofing

3.11 INSTALL DAMP-PROOF MEMBRANE

Install to NZS 3604.7.5.6 Polyethylene (polythene) sheet damp proof membranes. Bring granular hardfill to a suitable surface to receive the DPM using maximum 25mm sand blinding.

Lay the DPM on prepared basecourse with 150mm laps between sheets. Seal laps and penetrations with 50mm wide pressure sensitive plastic tape.
Refer to drawings for perimeter details.

Install insulation

3.12 INSTALL UNDERSLAB POLYSTYRENE INSULATION

Install polystyrene insulation system to manufacturer's requirements. Refer to Structural Engineers documentation that references LIGHT WEIGHT STRUCTURAL GRADE VH FORMER

Install reinforcing / cast-in items

3.13 CUT AND BEND

Cut and bend bars using proper bending tools to avoid notching and to the requirements of NZS 3101.1, 8 and NZS 3109: 3.3 Hooks and bends. Minimum radii of reinforcement bends to NZS 3101.1, 8 and NZS 3109: table 3.1, Minimum radii of reinforcement bends. Do not rebend grade 500E bars. Where rebending is necessary for grade 300E bars, use a purpose built tool, proper preparation and preheating.

3.14 ADJUSTMENTS

Use a purpose built tool for on site bending and to deal with minor adjustments to steel reinforcement.

3.15 TOLERANCES

To NZS 3109, 3.9, Tolerances for reinforcement.

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3.16 SECURE REINFORCEMENT

Secure reinforcement adequately with tying wire and place, support and secure against displacement when concreting. Bend tying wire back well clear of the formwork. Spacing as dimensioned, or if not shown, to the clear distance minimums in NZS 3109, 3.6, Spacing of reinforcement.

3.17 LAPPED SPLICES

Length of laps where not dimensioned on the drawings in accordance with the SELECTIONS. Provide laps only where indicated on the drawings. Tie all lapping bars to each other. Plain bars lapped splices must be hooked

Wire mesh laps to NZS 3101.1, lap one mesh square plus 50mm minimum (do not count bar extension beyond the outermost wire).

3.18 REINFORCING BAR LAPS TO NZS 3604

For foundation walls horizontal reinforcing bars to be lapped with a lap length of not less than 500mm. Corners and intersection laps shall be determined by NZS 3604 figure 6.15a

3.19 CASTING IN

Build in all grounds, bolts and fixings for wall plates and bracing elements, holding down bolts, pipes, sleeves and fixings as required by all trades and as shown on the drawings, prior to pouring the concrete.

Do not use grounds exceeding 100mm in length. Location and form of conduits to be approved in writing by the Contract Administrator. Minimum cover 40mm. Do not encase aluminium items in concrete. Do not paint steel embedded items more than 25mm into the concrete encasement. Cut back form ties to specified cover and fill the cavities with mortar.

Form all pockets, chases and flashing grooves as required by all trades and as shown on the drawings.

Wrap all pipes embedded in concrete with tape to break the bond and to accommodate expansion. Do not embed pipes for conveying liquids exceeding a temperature of 50°C in concrete.

Place concrete

3.20 CONSTRUCTION JOINTS

Locate and construct as shown on the drawings or in accordance with NZS 3109, 5.6, Type B.

3.21 PRE-PLACEMENT INSPECTION

Do not place concrete until all excavations, boxing and reinforcing have been inspected and passed by the Building Consent Authority or the requirements of the Structural Engineer.

3.22 UNFAVOURABLE CONDITIONS

Do not place concrete in high winds or other unfavourable conditions. Refer to NZS 3109: 7.2 Unfavourable conditions, for when concrete may not be placed. Remove and make good concrete damaged by frost, dry and wet conditions.

3.23 PROTECT CONCRETE WORK

Protect formwork, reinforcement, "build in" items and fresh concrete from damage, as the pour is placed, making good any damage if it occurs.

3.24 PREPARATORY WORK

Ensure at the time of placing, that surfaces to receive the concrete are clean, free of debris and with no free water present. Ensure reinforcement, cast-in items and hardened concrete against which fresh concrete is laid are free from any release agent or other deleterious surface deposit.

3.25 TRANSPORT CONCRETE

Transport concrete from agitator to final placement as quickly as possible using means that avoid segregation.

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3.26 PUMPING CONCRETE

Set up and supervise pump operation, placing and compaction of the mix to NZS 3109, 7.4, Handling and placing and NZS 3109, 7.6, Compaction Advise the ready-mix supplier of the type of pump and the slump required, in addition to the concrete grade, strength and quantity.

3.27 PLACE CONCRETE

Place concrete to NZS 3109: clause 7.4, Handling and placing. Place in layers not more than 500mm deep, compacted and vibrated. Do not place fresh concrete against the preceding layer after more than 45 minutes, or such lesser time as required by the circumstances, to NZS 3109: clause 7.4, Handling and placing.

3.28 COMPACT CONCRETE

To NZS 3109: clause 7.6, Compaction. Compact by vibration of the concrete to expel entrapped air and until settlement of the concrete is visibly evident over all areas of the surface. Maintain vibration until settlement ceases and coarse aggregate at the surface is embedded. Do not continue vibration beyond reaching this condition.

Note: compaction by vibration is not required when using Self Compacting Concrete (SCC).

3.29 VIBRATORS

Use sufficient immersion vibrators, with one spare for emergency, to ensure that vibration is achieved throughout the entire volume of each layer of concrete, and until complete compaction is reached, to NZS 3109: clause 7.6, Compaction.

Finishing

3.30 SCREED THE SURFACE

Screed the concrete surface by straight edge or vibrating screed immediately after compaction and to tolerances in NZS 3109: table 5.2, Tolerances for in situ construction.

3.31 SURFACE FINISHES

To NZS 3114, Part 1 Off-the-form surface finishes, Part 2 Exposed aggregate surface and Part 3 Floors, exterior pavements, and inverts, for slabs and pavements. Refer SELECTIONS.

3.32 SAW CUTS

Provide saw cuts in accordance to NZS 3604 clause 7.5.8.6 Shrinkage Control Joints and NZS 4229 clause 7.8.5 Shrinkage Control Joints. Cut slabs where indicated on the drawings as required to control shrinkage cracking. Form by saw cutting the slab (blade width approximately 5 mm) to a quarter of the depth of the slab (saw cutting shall take place no later than 24 hours after initial set for average ambient temperatures above 20 ºC, and 48 hours for average ambient temperatures below 20 ºC).

3.33 SAW CUTS

Cut slabs where indicated and as required to control shrinkage cracking. Carry out cutting as soon as possible, without causing tear-out of aggregate and before shrinkage cracking has occurred, generally within 24 hours of pouring. - to be worked through with Structural Engineer

SPACING OF SAW CUTS - Refer to Structural Documentation for saw cut spacing

Curing

3.34 CURING PERIOD

Cure all concrete for a minimum of 7 days. Keep time between placing of concrete and the start of curing to an absolute minimum. Ensure curing is continuous.

3.35 CURING METHOD

Notify the curing method to be used for this work - to be worked through with Structural Engineer

3.36 SECURE COVERINGS

When covering with sheet materials, ensure that edges are well secured throughout the specified curing period, to prevent draughts passing over the surfaces of the concrete.

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Defects

3.37 DEFECTS

Reject concrete with structural defects. Immediately after stripping formwork, identify all defects and obtain direction. Do not carry out any repair work until directed and then only in accordance with the direction. Repair defects by cutting out, making good and replacing, or otherwise as directed.

3.38 SURFACE DEFECTS

Make good surface defects immediately after forms are stripped. Make good hollows or bony areas with 1:2 mortar or plaster, finished to the same tolerances as the parent concrete. Fill any tie rod holes with 1:2 mortar.

Completion

3.39 REMOVE

Remove all unused materials and all concrete and reinforcing debris from the site.

4 SELECTIONS

4.1 FORMWORK

Location:	Refer to documentation or contractors construction methodology
Type:	Refer to contractors construction methodology and approval by Structural Engineer
Finish:	As per standards

4.2 LOCATION OF CONSTRUCTION JOINTS

Refer to Structural Engineer

4.3 REINFORCEMENT LAPS

Refer to Structural Engineer

4.4 WELDED WIRE FABRIC

Refer to Structural Engineer

4.5 NORMAL CONCRETE

Refer to Structural Engineer

4.6 SURFACE FINISHES

Finish Class	Location - refer to drawings
F1	Foundations
F2	All concealed concrete
F4	All exposed concrete - *that is not otherwise highlighted within this list*
Precast	Feature rough sawn timber plank precast finish
Uniform Spaces	
U3 - Trowelled	General - all areas other than noted below
U3 - steel trowel to NZS 3114	To areas receiving waterproofing membrane
U4	**General areas of Carparking that are covered -** *painted markings still to be able to be undertaken*
U5	**Lightly textured using a bass broom or hessian drag. Standard for external uncovered car parks and pedestrian access route -** *painted markings still to be able to be undertaken*
U5 / U6	New car park ramps - **Uses a wire broom or rubber-tyned rake to create deeper grooves, perfect for steep ramps or areas that require greater frictional resistance** - *painted markings still to be able to be undertaken*

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3106 BOARDMARKED PRECAST AND INSITU CONCRETE

1 GENERAL

1.1 SUPPLIER SAMPLE AND/OR PAST PROJECT REFERENCE IMAGES

Project has precast and insitu feature 'boardmarked' finish concrete at Ground level. Critical that both types of concrete manufacture provides the same look/texture finish.



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3821 TIMBER FRAMING

1 GENERAL

This section relates to the supply and erection of timber framing, as a framed structure, or as part of a partitioning system.

Deflection heads and seismic bracing to walls is to be worked through with the seismic/structural engineer. A0042 notes standard deflection heads

1.1 RELATED WORK

Refer to 4161 UNDERLAYS, FOIL AND DPC for underlays, foils and DPC.

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

FSC®	Forest Stewardship Council®
COC	Chain of Custody
PEFC	Programme for the Endorsement of Forest Certification

The following definitions apply specifically to this section:

SG Structural grade to NZS 3604, 1.3 Definitions

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B2/AS1	Durability provisions for building elements
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 2904	Damp-proof courses and flashings
NZS 3602	Timber and wood-based products for use in building
NZS 3603	Timber structures standard
NZS 3604	Timber-framed buildings
NZS 3622	Verification of timber properties
NZS 3631	New Zealand timber grading rules
NZS 3640	Chemical preservation of round and sawn timber
WorkSafe	Guidelines for the provision of facilities and general safety in the construction industry.
BRANZ BU 673	Cavity battens

***A copy of** NZS 3604 **Timber-framed building, must be held on site.**

1.4 DIMENSIONS

All timber sizes except for roof battens are actual minimum dried sizes.

Requirements

2 PRODUCTS

Materials

2.1 TIMBER FRAMING, TREATED

Species, grade and in service moisture content to NZS 3602, NZBC B2/AS1 and treatment to NZS 3640, NZBC B2/AS1. Structural grade (SG) to NZS 3604, NZS 3622 with properties to NZS 3603.



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2.2 APPEARANCE TIMBERS

Graded to NZS 3631, treated where required by NZBC B2/AS1, NZS 3602, table 1, and treatment to NZS 3640.

2.3 STRAPPING

Treated to NZBC B2/AS1, NZS 3602, table 1 and to NZS 3640, clause 6.3.1.

Species:	Radiata pine
Grade:	SG6
Size:	70mm x 45mm, 45mm x 45mm or 45mm x 19mm

2.4 EXTERIOR CAVITY WALL BATTENS - TIMBER - NON-STRUCTURAL

H3.1 Radiata pine battens, 20mm thick, 45mm minimum width, and height to match timber framing studs. To NZS 3602, table 1, reference 1D.10, Requirements for wood-based building components to achieve a 50-year durability performance.

2.5 DPC

Refer to 4161 UNDERLAYS, FOIL AND DPC section

Components

2.6 NAILS

Type to NZS 3604, section 4, **Durability**, and of the size and number for each particular types of joint as laid down in the nailing schedules of NZS 3604, sections 6 - 10.

2.7 SCREWS

Wood screws to the requirements of NZS 3604, 2.4 Fastenings and Fabrication, and section 4, Durability, and of the type, number and form required for each screw application to NZS 3604, sections 6 - 10.

2.8 BOLTS AND COACH SCREWS

Bolts and coach screws complete with washers, to the requirements of NZS 3604, clause 2.4.5 Bolts and Coach Screws, and section 4, Durability, and of the type, number and form required for each particular junction to NZS 3604, sections 6 - 10.

2.9 THREADED RODS

Use stainless steel threaded rods of the required length, with washers and nuts at both ends, when stainless steel bolts of the required length are not available.

2.10 TIMBER CONNECTORS AND FIXINGS

Supply for each particular joint the connectors and fixings as noted on the drawings. Comply with the requirements of the manufacturer, NZS 3604, section 4, Durability, and of the number and form required for each particular junction to NZS 3604, sections 6-10.

2.11 BRACING STRAPS

Nail-on type to the requirements of NZS 3604, section 4, Durability, and of the number and form required for each particular application to NZS 3604, sections 6-10.

2.12 POWDER ACTUATED FASTENERS

To type, size and charge required by the powder actuated tool manufacturer for each particular member and the substrate.

2.13 CORROSION RISKS

For interior timber, treated with copper-based timber preservatives (H3.2 or higher), use a minimum of hot-dipped galvanized steel fixings and fasteners.

For exterior timber, timber in damp areas and timber subject to occasional wetting, use only stainless steel (or equivalent) fixings and connectors, when the timber is treated with; Copper Azole (CuAz, Preservative code 58), Alkaline Copper Quaternary (ACQ, Preservative code 90), Micronise Copper Azole (code 88) or Micronised Copper Quaternary (code 89).

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3 EXECUTION

Conditions

3.1 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Maximum allowable equilibrium moisture content (EMC) for non air-conditioned or centrally heated buildings, for framing to which linings are attached.

Moisture content:	
At erection	24% EMC maximum
At enclosure	20% EMC maximum
At lining	16% EMC maximum

3.2 PROTECT TIMBER

Protect all timber against damage and from inclement weather. Ensure that any variation in moisture content is kept to a minimum, before and after erection and before enclosure.

Installation/application

3.3 STANDARDS AND TOLERANCES

Permissible deviations from established lines, grades and dimensions equal to or less than the following. Multiples of given limits are not cumulative.

- Deviation in plan, up to 10 metres, 5mm
- Deviation in plan, over 10 metres, 10mm total

- Deviation from horizontal, up to 10 metres, 5mm
- Deviation from horizontal, over 10 metres, 10mm total

- Deviation from vertical position per 3 metres, 3mm
- Deviation from horizontal and vertical, within openings, 3mm.

3.4 SEPARATION

Separate all timber framing timbers from concrete, masonry and brick by: -

- a full length polyethylene damp-proof course overlapping timber by at least 6mm; or
- a 12mm minimum free draining air space

3.5 EXECUTION

Execution to comply with NZS 3604, except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

3.6 SET-OUT

Set-out framing generally in accordance with the requirements of NZS 3604, to carry superimposed loads and as required to support sheet linings and claddings. Set back nogs 12.5mm from face of studs where required for back-blocking of plasterboard non-tapered ends or edges.

3.7 SET TIMBERS

Set timbers true to required lines and levels with mitres, butt joints, laps and housings cut accurately to provide full and even contact over the whole of the bearing surface.

3.8 TIMBER CUTTING

Select and cut spanning members to minimise allowable defects and avoiding knots and short grain on edges in the middle third, and shakes, splits and checks at mid-span and close to ends.

3.9 STRAIGHTENING STUDS

Cutting for straightening to comply with NZS 3604, 8.5.3, Straightening studs.

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3.10 TIMBER PLATES AND FURRING

Fix to steelwork with bolts and washers or approved proprietary fastenings at 1 metre maximum spacing and not less than 2 fixings to each member, or to engineering specific design.

3.11 HOLES AND NOTCHES

Limit holes and notches, checks and half-housing for the structure to those allowable in NZS 3604. Neatly form holes and notches for services without lessening the structural integrity of the member.

3.12 EXPOSED TIMBER CONNECTORS AND FIXINGS

Do not use steel timber connectors and fixings on any structural framing exposed to view unless detailed on the drawings.

3.13 POWDER-ACTUATED FASTENING TOOLS

Comply with the requirements of WorkSafe and the Health and Safety at Work Act 2015. Powder-actuated fastening tool operators to have the appropriate current Certificate and/or Licence and tools to have the appropriate certificate of fitness if necessary.

3.14 ADDITIONAL FRAMING

Position and fix all necessary members for the fixing of all services, fittings, fixtures, edges of linings or claddings, and to provide lateral support to load carrying framing.

3.15 FORM NAILED JOINTS

Fully drive nails in all structural joints with the number and location for each particular joint, to the requirements of the nailing schedules of NZS 3604. Where splitting could occur, pre-drill to 80% of nail diameter.

3.16 FORM BOLTED JOINTS

Drill for and set bolts to ensure full bearing and development of the joint strength, with tension to just set the washers into timber or to engineering specific design.

3.17 FIT CONNECTORS AND FIXINGS

Fit connectors and fixings to obtain full bearing over all contact surfaces and full development of the required loading capacity for that particular joint and in accordance with the manufacturer's requirements or to engineering specific design.

3.18 FIT JAMB BATTENS

For walls with direct fix cladding, fit 20mm (nominal) jamb battens over the wall underlay, to the jambs of window and door rough openings, to NZBC E2/AS1, Figure 9.1.9.4: General window and door opening for direct fixed. Cut around sill flashings. Fix with 60 x 2.8 flat head galvanized nails at 300mm centres.

3.19 FIT BRACING

Fit and fix subfloor, wall and roof bracing elements to the requirements of the manufacturer or to NZS 3604, to develop the full number of bracing units required.

3.20 DPC TO LOSP TREATED TIMBER

Refer to 4161 UNDERLAYS, FOIL AND DPC section

3.21 DPC TO TIMBER

Refer to 4161 UNDERLAYS, FOIL AND DPC section

Completion

3.22 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.



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4 SELECTIONS

4.1 EXTERIOR WALL FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Exterior walls:	Radiata pine	SG8	H3.2
Parapets:	Radiata pine	SG8	H3.2
Nogs	Radiata pine	SG8	H3.2
Jamb battens	Radiata pine	Merch	H3.1 or H3.2

4.2 ROOF FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Rafters:	Radiata pine	SG8	H1.2
Purlins:	Radiata pine	SG8	H3.2
Soffits	Ply	CD	H3.1
Gutters	Ply	CD	H3.2

4.3 INTERIOR WALL FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Non structural walls:	Radiata pine	SG8	H1.2
Structural and braced walls:	Radiata pine	SG8	H1.2

4.4 CEILING FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Ceiling joists:	Radiata pine	SG8	H1.2
Timber ceiling battens:	Radiata pine	SG8	H1.2
Proprietary ceiling battens:	**Manufacturer - reference Lobbies**		Reference Interior feature detail.

4.5 DPC

Refer to 4161 UNDERLAYS, FOIL AND DPC section

4.6 NAILS

Location	Type	Material	Finish
Interior Framing		Steel	Galvanized
Exterior Framing		Stainless Steel	

4.7 SCREWS

Location	Type	Material	Finish
Interior Framing		Steel	Galvanized
Exterior Framing		Stainless Steel	

4.8 BOLTS AND COACH SCREWS

Location	Type	Material	Finish
Interior Framing		Steel	Galvanized
Exterior Framing		Stainless Steel	

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4161 UNDERLAYS, FOIL AND DPC

1 GENERAL

This section relates to the application of:

- DPC/DPM
- wall underlays includes Kraft based and synthetic wall underlays
- roofing underlays *(referenced under different Specification Sections)*
- vapour barriers
- accessories

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

NZMRM	New Zealand Metal Roofing Manufacturers Inc.
W2	Wall underlay Kraft/bituminous based Heavy grade
W3	Wall underlay Synthetic based non-absorbent
W4	Wall underlay Synthetic based absorbent
R1	Roof underlay Kraft/bituminous based Heavy grade
R2	Roof underlay Kraft/bituminous based Self-supporting
R3	Roof underlay Synthetic based Heavy grade
R4	Roof underlay Synthetic based Self-supporting

The following definitions apply specifically to this section:

Wall underlay	the same meaning as defined in NZBC E2/AS1, covering kraft based and synthetic wall underlays, sometimes called, wall wraps, building wraps or building papers.

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZS/AS 1530.2	Methods for fire tests on building materials, components and structures - Test for flammability of materials
NZS 2295	Pliable, permeable building underlays
AS/NZS 2904	Damp-proof courses and flashings
NZS 3604	Timber-framed buildings
AS/NZS 4200.1	Pliable building membranes and underlays
AS/NZS 4347.0	Damp-proof courses and flashings - Methods of test - General introduction, list of methods and test specimen requirements
AS/NZS 4389	Roof safety mesh
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

Requirements

1.3 INSTALLATION SKILL LEVELS

Installers to be familiar with the manufacturer's technical literature and the NZMRM CoP NZ Metal Roof and Wall Cladding Code of Practice.

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2 PRODUCTS

Materials

DPC

2.1 POLYETHYLENE DPC

Polyethylene film to AS/NZS 2904 and to the appropriate test methods set out in AS/NZS 4347.0. Thickness 500 microns minimum, manufactured for use as a damp-proof course and concealed flashings to doors and windows.

2.2 BITUMINOUS IMPREGNATED DPC

Heavy Kraft impregnated with high grade bitumen and coated with higher heat resistant bitumen to AS/NZS 2904 and to the appropriate test methods set out in AS/NZS 4347.0.

Wall Underlays

2.3 BITUMINOUS HEAVY WEIGHT WALL UNDERLAY (W2)

Wall underlay tested to NZS 2295.

2.4 ABSORBENT SYNTHETIC WALL UNDERLAY - POLYPROPYLENE - FIRE (W4)

Absorbent, breathable, fire retardant, non-woven, white soft spun-bonded polypropylene membrane. Designed for use as fire retardant membrane, with Flammability Index of 1, when tested to NZS/AS 1530.2.

2.5 ABSORBENT SYNTHETIC WALL UNDERLAY - POLYOLEFIN - FIRE (W4)

Absorbent, breathable, fire retardant polyolefin (polyethylene) woven into sheet form with micro sized pores that allow the membrane to breathe with a fire retardant flammability index of 1, tested to NZS/AS 1530.2.

2.6 ABSORBENT SYNTHETIC WALL UNDERLAY - POLYPROPYLENE (W4)

Absorbent, breathable spun bonded polypropylene type building membrane, coated with a breathable water resistant film.

2.7 NON-ABSORBENT SYNTHETIC WALL UNDERLAY - POLYOLEFIN (W3)

Non-absorbent, breathable very fine high density white polyolefin fibres bonded with heat and pressure to form a wide sheet.

Rigid Wall Underlays

2.8 RIGID WALL UNDERLAYS

Plywood or fibre cement sheet over-fixed with flexible wall underlay to NZBC E2/AS1, paragraphs 9.1.6.2 - 9.1.6.4. Refer to the appropriate section.

Rigid Air Barriers

2.9 RIGID AIR BARRIERS

For rigid air barriers refer to the appropriate section.

Vapour Barriers

2.10 MOISTURE VAPOUR BARRIER

Moisture vapour barrier film to AS/NZS 4200.1, complete with adhesive pressure-sensitive tape required by the film manufacturer, used for the prevention of moisture damage.

Accessories

2.11 WINDOW DOOR SEALING SYSTEM

Proprietary window and door flashing tape and accessories to NZBC E2/AS1, 4.2.12 Flexible flashing tape, and 9.1.4 Wall underlays to wall openings.

2.12 WIRE NETTING

75mm galvanized hexagonal wire netting to AS/NZS 4534.

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2.13 ADHESIVE TAPE

Adhesive tapes to compliment the underlay. Pressure sensitive tapes for joining foil insulation and vapour barriers.

3 EXECUTION

Conditions

3.1 GENERAL REQUIREMENTS

To NZBC E2/AS1, Table C.2.1.1 Properties of roof underlays and wall underlays, and manufacturers technical literature.

Note: Care should be taken not to expose the underlay to continuous wet and windy conditions.

3.2 STORAGE

Store wall and roofing underlays and accessory materials, under conditions that ensure no deterioration or damage. Store rolls in an upright position on a smooth floor and protected from sunlight, UV radiation and moisture.

3.3 INSPECTION

Before starting work, check that the framing will allow work of the required standard. Carry out remedial work identified before laying underlay.

Application - DPC

3.4 POLYETHYLENE DPC TO TIMBER

Lay polyethylene DPC under treated and untreated timber, including LOSP treated timber, of all timber framed walls on concrete and concrete masonry, in a single layer with 50mm overlaps at joints to provide a waterproof barrier.

3.5 BITUMINOUS DPC TO TIMBER

Lay bituminous DPC under timber of all timber framed walls on concrete, in a single layer with 50mm overlaps at joints to provide a waterproof barrier.

NOTE: Do not use bituminous DPC under LOSP treated timber.

3.6 DPC BETWEEN DISSIMILAR MATERIALS

Lay DPC between dissimilar materials where required.

Application - Wall Underlay

3.7 WALL UNDERLAY

Fix horizontally to outside face of substrate in true alignment, with succeeding sheets overlapping 150mm to NZBC E2/AS1, 9.1.6 Wall underlay, and refer to manufacturer for requirement for fastenings. Fix to manufacturers requirements. Scribe neatly around penetrations and openings to leave no gaps. Tape all penetrations. Keep clean, undamaged and without visible weather deterioration until closed in.

Application - Water-Resistive Barrier Wall Membrane

3.8 INSTALL WATER-RESISTIVE BARRIER WALL MEMBRANE

Ensure substrate is dry, clean and free from contaminants. Install self- adhered, water-resistive barrier wall membrane over substrate in accordance with manufacturer's requirements with required minimum overlaps, with lower courses lapped under upper courses to allow for the shedding of water. If required, install joint tape in accordance with manufacturer's requirements. Installation to all penetrations including and windows and doors shall be completed in accordance with manufacturers requirements using compatible flashing tapes and sealants.

Application - Roofing Underlay

3.9 INSTALL WIRE NETTING

Lay 75mm galvanized wire netting at right angles across the purlins and drawn taut before fixing. Tie edges of netting together with galvanized wire clips.



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3.10 ROOF UNDERLAY

refer to other sections within the specification for any roof underlay under the Dimond WARM ROOR system and Nuralite WARM ROOF system and Nuralite STANDARD Roof system

Application - Vapour Barrier

3.11 FIX VAPOUR BARRIER

Fit and fix between insulation and lining with joints lapped and sealed with pressure-sensitive tape.

Completion

3.12 CLEAN UP

Clean up as the work proceeds.

3.13 LEAVE

Leave work to the standard required by following procedures.

3.14 REMOVE

Remove debris, unused materials and elements from the site.

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4161PC PRO CLIMA WALL AND ROOF UNDERLAYS, TAPES & ACCESSORIES

1 GENERAL

This section relates to the application of **Pro Clima NZ Limited** external wall and roof underlays, internal floor protection membranes, tapes and accessories.

1.1 RELATED WORK

Refer to ~ for ~

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

NZMRM	New Zealand Metal Roofing Manufacturers Association Inc.
MVTR	Moisture vapour transmission resistance
TEEE	Thermoplastic Elastomer-Ether Ester
SIPs	Structural Insulated Panels

The following definitions apply specifically to this section:

Wall underlay	the same meaning as defined in NZBC E2/AS1, covering kraft based and synthetic wall underlays, sometimes called, wall wraps, building wraps or building papers.

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B2/AS1	Durability provisions for building elements
NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZBC F2/AS1	Hazardous building materials
AS 1530.2	Methods for fire tests on building materials, components and structures - Test for flammability of materials
NZS 2295	Pliable, permeable building underlays
NZS 3604	Timber-framed buildings
AS/NZS 4200.1	Pliable building membranes and underlays - part 1: materials
AS/NZS 4389	Roof safety mesh
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice
CodeMark™ CMNZ30032 verH	SOLITEX EXTASANA Wall Underlay

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Pro Clima documents relating to work in this section are:

SOLITEX EXTASANA® Installation Guide
SOLITEX EXTASANA ADHERO® Mass Timber Application Guide
SOLITEX® ADHERO FC & SOLITEX EXTASANA ADHERO® Wall Application Guide Version 2.0 dated January 2026
SOLITEX EXTASANA ADHERO® Mass Timber Moisture Protection
SOLITEX MENTO® Application Guide 24.06.2025
BRANZ Appraisal 815 (2024) - TESCON EXTOSEAL Sill Tape
BRANZ Appraisal 838 (2024)- TESCON EXTORA Sealing Tape
BRANZ Appraisal 855 (2025)- SOLITEX MENTO 3000 Roof and Wall Underlay
BRANZ Appraisal 876 (2020) - SOLITEX MENTO 1000 Roofing Underlay
BRANZ Appraisal 953 (2024) - KAFLEX and ROFLEX Grommets

BRANZ Appraisal 989 (2023) - SOLITEX EXTASANA ADHERO® Self-adhesive Underlay - Amendment 1
BRANZ Appraisal 1163 (2021) - SOLITEX EXTASANA® Wall Underlay
SOLITEX MENTO® 1000 CONNECT Roof Underlay Installation Guide
SOLITEX UM CONNECT Application Instructions
Specification Guidelines 30 January 2026
Early-Close-In with SOLITEX EXTASANA®
SOLITEX EXTASANA® Early Close-In Application Guide for Brick Cladding
SOLITEX EXTASANA® Early Close-In Application Guide for Horizontal Cladding
SOLITEX EXTASANA® Early Close-In Application Guide for Vertical Cladding

Manufacturer/supplier contact details

Company:	**Pro Clima NZ Limited**
Web:	www.proclima.co.nz
Email:	welcome@proclima.co.nz
Telephone:	0800 pro clima (776 254)

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For Pro Clima system

- Provide this warranty on the Pro Clima standard form.
- Commence the warranty from the date of purchase of the product from the manufacturer.

Refer to the Pro Clima warranty agreement and the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer warranty:

2 years:	For installation

- Provide this warranty on the installer/standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Compliance

1.7 COMPLIANCE - CODEMARK CERTIFICATE

SOLITEX EXTASANA Wall Underlay meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CMNZ30032.

1.8 COMPLIANCE - BRANZ APPRAISAL 815

TESCON EXTOSEAL Sill Tape has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 815.

1.9 COMPLIANCE - BRANZ APPRAISAL 989

SOLITEX EXTASANA ADHERO® Self-adhesive Underlay has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 989.

1.10 COMPLIANCE - BRANZ APPRAISAL 1163

SOLITEX EXTASANA® Wall Underlay has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 1163.

Requirements

1.11 NO SUBSTITUTIONS

Substitutions are not permitted to any specified materials, or associated products, components or accessories.

1.12 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Installation to be carried out by or under the supervision of a Licensed Building Practitioner (LBP) with the relevant License Class.

Installers to be experienced in the installation of Pro Clima products and familiar with Pro Clima NZ Limited technical literature and the related documents listed in this design i.e. NZMRM CoP. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

2 PRODUCTS

Wall underlays

2.1 WALL PROTECTION MEMBRANE - MECHANICAL FIX

SOLITEX EXTASANA® wall underlay to NZS 2295, comprised of a non-porous, UV stable, water resistant TEEE film, laminated between two layers of non-woven spun-bonded polypropylene, coloured blue on the top surface and grey on the bottom. Watertight to >10,000mm water column pressure, with low MVTR (vapour open).

Has a flammability Index of ≤ 5, when tested to AS 1530.2 and meets the requirements of NZBC C/AS2, paragraph 4.12.5.2 (b), for suspended flexible fabrics, NZBC B2 Performance B2, 3.1(a), 3.1(b), 3.2, NZBC E2 Performance E2, 3.2 and NZBC F2 Performance F2, 3.1 in accordance with CodeMark™ Certificate CMNZ30032. Refer to BRANZ Appraisal 1163 for details. Supplied in rolls 1.5m x 36.5m long (55m²), 1.5m x 50m long (75m²) and 2.74m wide x 36.5m long (100m²). SOLITEX EXTASANA® must be covered and protected against weather or ultraviolet light within 180 days.

2.2 WALL PROTECTION MEMBRANE - PEEL AND STICK

SOLITEX EXTASANA® ADHERO wall underlay to NZS 2295, comprised of a non-porous, UV stable, water resistant TEEE film, laminated between two layers of non-woven spun-bonded polypropylene, coloured blue on the top surface and grey on the bottom. Pressure sensitive solid acrylic adhesive layer on underside. PE release paper. Watertight to >10,000mm water column pressure, with very low MVTR (diffusion open).

Has a Flammability Index of ≤ 5, when tested to AS 1530.2 and meets the requirements of NZBC C/AS2, paragraph 4.12.5.2 (b), for suspended flexible fabrics, NZBC B2 Performance B2, 3.1(a), 3.1(b), 3.2, NZBC E2 Performance E2, 3.2 and NZBC F2 Performance F2. Supplied in rolls 1.5m x 30m long (45m²)²) and 0.5m x 30m long (15m²) for internal and external corners. SOLITEX EXTASANA® ADHERO must be covered and protected against weather or ultraviolet light within 180 days.

Components

2.3 8mm SEPARATION MESH

Polypropylene 3D separation layer. Available in 1.4 x 30m x 8mm thick rolls.

2.4 WINDOW AND DOOR WEATHERTIGHT CONNECTION STRIP

CONTEGA® EXO exterior window and door connection tape for SOLITEX EXTASANA® wall underlay comprised of PP microfibre fleeces, used for weathertight connection to window and door frames to the wall underlay or other weathertightness layer. Supplied in rolls 85mm and 120mm wide x 30m long for different framing widths.

2.5 WINDOW AND DOOR CONNECTION TAPE

CONTEGA SOLIDO EXO-D, a full-surface adhesive plaster/window-sealing tape with an additional adhesive zone on the fleece side, for exterior use. Can be plastered over directly.

2.6 MULTI-PURPOSE ADHESIVE

ORCON® Classic multi-purpose adhesive, for bonding Pro Clima membranes to rough adjoining structural components or mineral surfaces. Supplied in a 310ml cartridge or 600ml sausage.

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2.7 PRIMER

TESCON® PRIMER RP is a solvent free acrylic copolymer used to stop water capillarity in the fleece of SOLITEX EXTASANA ADHERO® when used in low pitch roof applications. Used to pre-treat rough or dirty surfaces before applying SOLITEX® ADHERO VISTO floor protection membrane on internal floors, or before applying COMPEGO sealing tape. Supplied in a 1 litre bottle.

2.8 FAÇADE CONTROL JOINT STRIP

TFLEX façade control joint strip for inter-floor transitions wtihin the WRB layer. Comprises a sealing strip made from strong and highly flexible Thermoplastic Polyurethane for control joints and seismic movement joints in facade inter-floor transitions. Fire retardant with high UV stability, compatible with the SOLITEX EXTASANA ADHERO® or SOLITEX® ADHERO FC façade applications.

Tapes

2.9 WEATHERTIGHT SEALING TAPE

TESCON EXTORA® weathertight sealing tape, a multi-purpose, UV stable, pressure-sensitive, self-adhering tape comprised of a PP fleece protection layer, solid acrylic glue and siliconized release backing paper. Suitable for jambs and heads of framed openings only. Supplied in rolls 60mm, 100mm, 150mm and 200mm wide x 30m long.

Note: TESCON EXTORA® can be exposed to weather or ultraviolet light for a period of up to 180 days.

2.10 SILL TAPE

TESCON EXTOSEAL® Sill Tape, a butyl rubber, pressure-sensitive, self-adhering, one-piece stretchable, self-sealing, non-bitumen sill tape with a siliconized release backing paper. Workable in cold temperatures, down to - 20°C. Does not melt in the heat and can be applied to damp surfaces. Complies with NZBC E2/AS1, paragraph 9.1.4.1(b). Refer to BRANZ Appraisal 815 for details. Supplied in rolls 150mm, 200mm or 300mm wide x 20m long. TESCON EXTOSEAL® can be exposed to weather or ultraviolet light for a period of up to 180 days.

2.11 WEATHERTIGHT JOINERY SEALING TAPE

TESCON EXTORA® PROFIL weathertight joinery sealing tape, UV stable, pressure-sensitive, self-adhering tape comprised of a PP fleece protection layer, solid acrylic glue and a split, siliconized release backing paper. Applied to perimeter of joinery extrusion and joined to wall underlay. Supplied in rolls 60mm wide x 30m long.

2.12 NAIL & SCREW SEALING TAPE

TESCON® NAIDECK double-sided butyl rubber self-sealing tape, water resistant, reinforced, non-bitumen, used on the underside of a purlin / batten on roofs and behind façade clip and mounts on walls, to form a seal around nail or screw penetrations. Supplied in rolls 50mm wide x 20m long.

2.13 DOUBLE-SIDED TAPE

DUPLEX Double-sided tape comprised of siliconized release paper, used for bonding the overlaps of roof underlay SOLITEX MENTO® membranes and fixing of membranes to steel frame structures. Supplied in rolls 25mm wide x 80m long.

Accessories

2.14 STUD STRAPS - POLYPROPYLENE

Stud straps, 19mm wide polypropylene straps.

2.15 CAVITY CLOSERS, EAVES FLASHINGS, RIDGE VENT FLASHINGS

Fix cavity closers, eaves and ridge vent flashings and finishing accessories to complete the Pro Clima Roof Ventilation system in accordance with SOLITEX MENTO® Roof Application Guide and to Pro Clima Construction details.

Accessories - Early Close-In

2.16 CAP NAILS

Delfast FN-RCAP25 E-galv wire collated cap nails, incorporating plastic heads to weather-protect nail heads. For early close-in of building envelope. Refer to Pro Clima early close-in guides.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 GENERAL REQUIREMENTS

Design application and installation of Pro Clima NZ Limited products to NZBC E2/AS1, BRANZ Appraisals, Pro Clima Technical Literature and Industry Codes of Practice.

3.4 INSPECTION

Before starting work, check that the building construction phase will allow work of the required standard. Carry out remedial work identified before laying underlay.

Preparation

3.5 PREPARATION

Before starting work, ensure all surfaces are stable, dry, smooth, and free from dust, dirt, silicone and grease. Remove all unwanted material from the surface with a vacuum cleaner or cloth if necessary. Remove flaking and loose materials such as peeling paintwork, building papers and labels. Adhesion to frozen surfaces not possible, if in doubt carry out adhesion tests.

Application - wall underlay - SOLITEX EXTASANA

3.6 SCOPE LIMITATIONS - TIMBER FRAMED BUILDINGS

SOLITEX EXTASANA® Wall Protection Membrane is to be used as a flexible wall underlay on timber framed buildings within the following scope limitations:

- The scope limitations of NZBC E2/AS1, 1.1.1 Scope of this document, with regards to building height and floor plan area.
- With absorbent wall claddings directly fixed to the frame.
- With non-absorbent, non-metallic wall claddings directly fixed to the frame.
- With absorbent and non-absorbent wall claddings installed over an 18mm minimum drained cavity.
- With masonry veneer to NZBC E2/AS1.
- Situated in NZS 3604 Wind Zones up to and including Very High.

3.7 SCOPE LIMITATIONS - STEEL FRAMED BUILDINGS

SOLITEX EXTASANA® Wall Protection Membrane is to be used as a flexible wall underlay on steel framed buildings within the following scope limitations:

- The scope limitations of NZBC E2/AS1, 1.1.1 Scope of this document, with regards to building height and floor plan area.
- With Absorbent and non-absorbent wall claddings installed over an 18mm minimum drained cavity.
- With masonry veneer to NZBC E2/AS1.
- Situated in NZS 3604 Wind Zones up to and including Very High.

3.8 SCOPE LIMITATIONS - WALL PROTECTION MEMBRANE OVER RIGID WALL UNDERLAYS

SOLITEX EXTASANA® Wall Protection Membrane is to be used as a flexible wall underlay over rigid wall underlays on timber and steel framed buildings within the following scope limitations:

- The scope limitations of NZBC E2/AS1, 1.1.1 Scope of this document, with regards to building height and floor plan area.
- With absorbent and non-absorbent wall claddings installed over an 18mm minimum drained cavity.
- With masonry veneer to NZBC E2/AS1.
- Situated in NZS 3604 Wind Zones up to and including Extra High.

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3.9 SCOPE LIMITATIONS - PEEL AND STICK WALL PROTECTION MEMBRANE OVER RIGID WALL UNDERLAYS

SOLITEX EXTASANA® ADHERO Peel and Stick Wall Protection Membrane is to be used as a flexible wall underlay over rigid wall underlays on timber and steel framed buildings within the following scope limitations:

- The scope limitations of NZBC E2/AS1, 1.1.1 Scope of this document, with regards to building height and floor plan area.
- With absorbent and non-absorbent wall claddings installed over an 18mm minimum drained cavity.
- With masonry veneer to NZBC E2/AS1.
- Situated in NZS 3604 Wind Zones up to and including Extra High.

3.10 FIX WALL UNDERLAY - TIMBER FRAMING

Fix wall underlay in accordance with SOLITEX EXTASANA® Instruction Guide and as follows:

- Apply underlay to exterior walls from below bottom plate to top plate. Fix securely with fasteners e.g. "LITTLE GRIPPERS", 6mm - 8mm staples or 20mm large head galvanized clouts at 300mm centres horizontally and vertically. Provide additional fixings around window and door openings.
- For early close-in of building envelope, fix securely using Delfast FN-RCAP25 E-galv wire collated cap nails, incorporating plastic heads to weather-protect nail heads. Refer to Pro Clima early close-in guides.
- In sea spray zone (Zone D) all fixings to be stainless steel.
- Allow a 150mm minimum lap at joins and all vertical overlaps over studs and tape with Pro Clima TESCON EXTORA® to increase weathertightness. Repair any forced tears using TESCON EXTORA®.
- Pro Clima recommendation: Apply ORCON® Classic adhesive to perimeter at footing level to prevent wind wash over insulation.
- Pro Clima recommendation: Apply TESCON EXTORA® to horizontal laps to prevent wind wash over insulation.
- Note: Fastenings behind brick veneer must have equivalent service life of 50 years. Refer to NZS 3604 Tables 4.1, 4.2 and 4.3.
- When ready to install doors and windows cut at each opening at 45° from each corner. Pull SOLITEX EXTASANA® flaps inside and fasten to frame.
- Apply TESCON EXTOSEAL® sill tape.

3.11 FIX SELF-ADHESIVE WALL UNDERLAY

Fix wall underlay in accordance with SOLITEX EXTASANA® ADHERO Instruction Guide and as follows:

- Mark a horizontal line across RIGID WALL UNDERLAY as a guide.
- Apply SOLITEX EXTASANA ADHERO underlay to exterior walls from below bottom plate in horizontal application only.
- Allow a 150mm minimum lap at horizontal joins.
- Press SOLITEX EXTASANA ADHERO onto substrate using a Pressfix XL applicator tool or a hard rubber roller of approximately 150mm width.
- Tape vertical overlaps with Pro Clima TESCON EXTORA® to increase weathertightness. Repair any forced tears using TESCON EXTORA®.
- Note: Fastenings behind brick veneer must have equivalent service life of 50 years. Refer to NZS 3604 Tables 4.1, 4.2 and 4.3.
- When ready to install doors and windows cut at each opening at 45° from each corner. Pull SOLITEX EXTASANA® ADHERO flaps inside and fasten to frame.
- Apply TESCON EXTOSEAL® sill tape.

Application - wall underlay - generally

3.12 INSTALL STUD STRAPS

Where studs are at greater than 450mm centres, install 19mm wide polypropylene straps horizontally at 300mm centres over wall underlay, draw taut and fix to studs.

3.13 METAL CLADDING ON TIMBER CAVITY BATTENS

Fix strip of generic DPC as a separator between timber and metal cladding.

Application - roofing underlay

3.14 GUTTER AND UNDER FLASHINGS

Install SOLITEX MENTO® range roof underlay for use as an underlay to valley, apron flashings, and internal gutters. Lap under flashings with adjoining underlays. Fix SOLITEX MENTO® range soffit liner from top plate down 150mm past ribbon plate.

Application - tape systems

3.15 APPLY TESCON TAPE SYSTEMS

Apply TESCON tape systems in accordance with Pro Clima TESCON Installation Guides.

Note: Tapes can be specified for all joins in SOLITEX membranes to prevent wind-wash of insulation and resulting degradation of insulation performance.

Completion

3.16 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.proclima.co.nz.
Substitutions are not permitted to the following.

Materials

4.1 PRO CLIMA SOLITEX EXTASANA® MEMBRANE - MECHANICAL FIX

Location:	~
Manufacturer:	Pro Clima NZ Limited
Type:	SOLITEX EXTASANA® Wall Protection Membrane
Jointing & sealing tape:	TESCON EXTORA® weathertight sealing tape
	TESCON EXTOSEAL® sill tape
	~
Adhesive:	ORCON® Classic multi-purpose adhesive
Accessories:	~

4.2 PRO CLIMA SOLITEX EXTASANA® ADHERO MEMBRANE - PEEL AND STICK

Location:	~
Manufacturer:	Pro Clima NZ Limited
Type:	SOLITEX EXTASANA® ADHERO Peel and Stick Floor, Wall and Roof Protection Membrane
Jointing & sealing tape:	TESCON EXTORA® weathertight sealing tape
	TESCON EXTOSEAL® sill tape
	~
Adhesive:	ORCON® Classic multi-purpose adhesive
Accessories:	~

Accessories

4.3 STUD STRAPS

Location:	~
Type:	~ 19mm blue polypropylene tape

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4171HR JAMES HARDIE® RIGID AIR BARRIERS

1 GENERAL

This section relates to the supply and fixing of James Hardie® rigid air barrier products;

- HomeRAB™ Pre-Cladding
- RAB™ Board - 6mm and 9mm

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

FRR	Fire resistance rating
SED	Specific engineering design

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS1	Protection from fire for buildings with sleeping (residential) and outbuildings (risk group SH)
NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 1170.2:2011	Structural design actions - Wind actions
AS/NZS 2908.2	Cellulose-cement products - Flat sheet
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings
AS/NZS 3837	Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter

CodeMark™ Certificate CMNZ30130 RevB HomeRAB™ Pre-Cladding and RAB™ Board by James Hardie®

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie® (March 2026)
Bracing Design Manual by James Hardie®
Fire and Acoustic Design Manual by James Hardie, May 2025
BRANZ Appraisal 611(2026) - James Hardie® HomeRAB™ Pre-Cladding and RAB™ Board
BRANZ Appraisal 846 (2024) - SUPER-STICK Flexible Flashing Tape
BRANZ Appraisal 1285 (2025) - James Hardie Fire And Acoustic Wall Systems

Manufacturer/supplier contact details

Company:	James Hardie New Zealand Limited
Web:	www.jameshardie.co.nz
Email:	info@jameshardie.co.nz
Telephone:	Ask James Hardie™ on 0800 808 868.

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years:	For HomeRAB™ Pre-Cladding and RAB™ Board (refer to James Hardie® product warranty)
15 years:	For accessories supplied by James Hardie® (refer to James Hardie® product warranty)
From:	Date of purchase

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- Provide this warranty on the manufacturer's standard form.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS

Workers / Installers / applicators to be experienced, competent trades people familiar with the materials and techniques specified.

1.6 SAFE WORKING

To James Hardie® requirements for safe working practices with James Hardie® products, particularly with regards to cutting and drilling.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

Performance - Wind

1.8 PERFORMANCE, SPECIFIC DESIGN, WIND

The design wind pressures are to AS/NZS 1170.2, for specific design wind zone (beyond Extra High Wind Zone). Only specifically designed or approved details included in the Contract Documents can be used.

1.9 FIRE PROPERTIES OF EXTERNAL WALL CLADDING SYSTEMS

RAB® Board is a non-combustible material to NZBC C/AS2-AS, C7.1

2 PRODUCTS

Materials

2.1 RAB BOARD

Hardie™ RAB™ Board, 6mm or 9mm thick, manufactured from treated cellulose fibre, Portland cement, sand and water, cured by high pressure autoclaving manufactured to AS/NZS 2908.2, face and edge sealed.

Components

2.2 FASTENER TYPE

Fasteners to minimum durability requirements of the NZBC. Refer to NZS 3604, section 4 Durability, for requirements for fixing's material to be used in relation to the exposure conditions.

Refer to NZBC E2/AS1, Table C.1.1.1A: Material selection, and NZBC E2/AS1, Table C.1.1.1B: Compatibility of materials in contact, for selection of suitable fixing materials and their compatibility with other materials.

	Fixings Material
	Grade 316 Stainless

2.3 STAINLESS STEEL NAILS

316 Stainless Steel nails to James Hardie® requirements. Refer to SELECTIONS.

2.4 HORIZONTAL FLASHING - RAB™ BOARD

RAB™ uPVC Horizontal Flashing for horizontal joints.

Accessories

2.5 SEALING TAPE - VERTICAL JOINTS/CORNER JOINTS

SUPER-STICK Building Tape® (75mm wide), 3M™ All Weather Flashing Tape 8067 (75mm wide) or Thermakraft™ Premium Jointing Tape.

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2.6 FLASHING TAPE / WINDOW FLASHING TAPE

SUPER-STICK Building Tape®, 3M™ All Weather Flashing Tape 8067 or Thermaflash High Adhesion Window Flashing Tape.

3 EXECUTION

Conditions

3.1 STORAGE

Take delivery of products dry and undamaged on pallets, and keep on pallet. Protect edges and corners from damage and covered to keep dry until fixed.

3.2 HANDLING

Avoid distortion and contact with potentially damaging surfaces. Do not drag sheets across each other, or across other materials. Protect edges, corner and surface finish from damage.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

3.4 FRAMING - RAB™ BOARD

Provide framing plumb, level, in true alignment and in accordance with NZS 3604 or SED requirements. Stud and nog spacing must not exceed James Hardie® requirements. Moisture content of timber framing must not exceed the requirements specified by NZS 3602 to minimise shrinkage and movement after sheets are fixed.

Application - generally

3.5 PENETRATIONS AND FLASHINGS

Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding. Required preparatory work includes the following:

- Openings formed in accordance with the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie® .
- Materials lapped in a way that water tracks down to the exterior face of the Rigid Air Barrier.
- Underlay / tapes to openings finished and dressed off ready for the installation of window and door frames and other penetrations.
- Required holes in cladding accurately formed and cut to James Hardie® requirements, ensure (if required) services penetration grommets/sleeves/seals/tapes are in place prior to cladding installation.

3.6 CUT EDGES

Cut edges where exposed (not covered by uPVC flashing, flashing or sealing tape) must be primed prior to installation. Refer to SELECTIONS for primer.

Install Rigid Air Barriers

3.7 SHEET LAYOUT

Refer to the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie® for sheet layouts to suit general installations.

3.8 VERTICAL JOINTS

Join sheets to the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie®.

3.9 HORIZONTAL JOINTS

Join sheets to the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie®.

3.10 EXTERNAL AND INTERNAL CORNERS

Form in accordance with the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie®, using a 75mm minimum wide sealing tape.

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3.11 FIXING SHEETS

Fix in accordance with the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie® with the sealed face towards the external cladding and unsealed face towards the framing. Fix sheets to suit installation requirements for general fixing, bracing and fire rating requirements. Refer to SELECTIONS for fixing type. Use hand-driven nailing for fixing bracing sheets.

3.12 PENETRATIONS

Form in accordance with the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie®.

3.13 OPENINGS

Form in accordance with the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie®. Exposed timber framing around window, door, meter box and other penetrations must be covered with a 150mm wide minimum flashing tape or sealing tape. Flashing tapes must be lapped over the HomeRAB™ Pre-Cladding or RAB™ Board by 50mm minimum.

3.14 FLASHINGS AND JUNCTIONS

Form in accordance with the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie®. Install flashing tape over any flashings and at all junctions with other materials or building elements.

3.15 BASE CLEARANCES

Form in accordance with the HomeRAB™ Pre-Cladding and RAB™ Board Installation Manual by James Hardie®. Lining is required to extend below the bottom plate / floor joist by 15mm minimum to form a drip edge and must finish a minimum 100mm clear of finished ground. Where base of sheets are cut to suit site requirements seal the bottom edge with primer.

Completion

3.16 ROUTINE CLEANING

Carry out routine trade cleaning of this part of the work including periodic removal of all debris, unused and temporary materials and elements from the site.

3.17 REPLACE

Replace all damaged or marked elements.

3.18 LEAVE

Leave work to the standard required for following procedures.

3.19 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

For further details on selections go to www.jameshardie.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

4.1 RAB™ BOARD - RIGID AIR BARRIER 6MM

Brand/type:	Hardie™ RAB™ Board
Sheet length:	2450, 2750 or 3000mm
Sheet thickness:	6mm
Nails:	60 x 2.8mm stainless steel round head gun nails
Primer:	Dulux® 1 Step, Resene Quick Dryto exposed cut edges

4.2 RAB™ BOARD - RIGID AIR BARRIER 9MM

Brand/type:	Hardie™ RAB™ Board
Sheet length:	2450, 2750 or 3000mm
Sheet thickness:	9mm
Nails:	60 x 2.8mm stainless steel round head gun nails
Primer:	Dulux® 1 Step, Resene Quick Dryto exposed cut edges

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4223 PLYWOOD CLADDING

1 GENERAL

This section relates to the use of plywood sheets for:

- exterior cladding
- installed as bracing (as cladding or under cladding)

1.1 RELATED WORK

Refer to membrane roofing

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

FSC	Forest Stewardship Council
PEFC	Programme for the Endorsement of Forest Certification

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B1/AS1	Structural provisions for buildings
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 1604.1	Preservative-treated wood-based products - Part 1: Products and treatment
AS/NZS 2269.0	Plywood - structural - Specifications
NZS 3602	Timber and Wood-based Products for Use in Building
NZS 3604	Timber-framed buildings
NZS 4251.1	Solid plastering: Cement plasters for walls, ceilings and soffits

Performance

1.4 WIND DESIGN PARAMETERS - SPECIFIC DESIGN

Design the installation to the wind pressure parameters of AS/NZS 1170.2.

Refer to general section 1220 PROJECT for details and Structural Engineer documentation

Performance - design by contractor

1.5 FIXINGS, WIND - DESIGN BY CONTRACTOR

Design and use the fixings to the manufacturer requirements and as appropriate for the projects wind design parameters stated in the general section 1220 PROJECT.

2 PRODUCTS

Materials

2.1 PLYWOOD

Radiata pine veneer ply to AS/NZS 2269.0, face sanded, grade as scheduled.

H3 CCA treated to AS/NZS 1604.3 when used as a deck substrate. Confirm compatibility with adhesives being used with the waterproofing membrane.
F11 grade to be used as a substrate for decking membranes. F8 or F11 grades to be used for roofing

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2.2 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING

Perforated uPVC, aluminium or stainless steel trays with upstands. Upstand one side 10mm and the other 75mm. Length and width to suit cavity.

2.3 CONSTRUCTION PLYWOOD, PINE

Rotary cut radiata pine veneer ply to AS/NZS 2269.0, face sanded. Treated H3.

2.4 PROPRIETARY PLYWOOD CLADDING

Rotary cut, radiata pine veneer ply sheet to AS/NZS 2269.0. Treated H3 to AS/NZS 1604.1.

Components

2.5 NAILS

Refer to the panel manufacturer requirements. Use annular grooved or twisted shank nails for soffit sarking. For fixing finishes refer to SELECTIONS.

To fix cladding panels use a minimum of;

- 50mm x 2.8mm FH nails for direct fix
- 65mm x 3.2mm FH nails over cavity

To fix timber cover battens use a minimum of;

- 65mm x 3.2mm jolt head
- 65mm x 3.2mm rose head for clear finishes

2.6 SCREWS

Stainless steel, counter-sunk. Refer to the plywood manufacturer's requirements for size and use.

19 - 21mm plywood: No. 10 x 45mm

Under membranes
17 - 25mm plywood: No. 10 x 50mm (to E2/AS1, 8.5.5.1) - (Check with membrane supplier)

2.7 SCREWS IN STEEL

Self tapping, self countersinking. Refer to the plywood manufacturer's requirements for size and use.

Accessories

2.8 SEALANT

Refer to the plywood manufacturer requirements for elastomeric sealant to waterproof penetrations.

2.9 ADHESIVE

Single pack waterproof general purpose construction adhesive, as recommended by the manufacturer.

2.10 TIMBER FILLETS

20mm H3.2 CCA treated triangular timber internal corner fillets, for membrane installations.

3 EXECUTION

Conditions

3.1 HANDLE

Handle sheets carefully and reject those with damaged faces or edges.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check against the plywood manufacturer technical literature for the various uses

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3.4 SUBSTRATE

To NZS 3604 and the manufacturer requirements.

3.5 SUPPORT FRAMING

Ensure support framing is completed to the plywood manufacturer's stated requirements for laying plywood sheets.

3.6 EXPANSION

Provide 2-3mm gap at all edges of cladding for sheet expansion.

Installation/application

3.7 SUPPORT EDGES AND JOINTS

Fully support edges and joints on square edged sheets.

3.8 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.9 INSTALL DRAINED CAVITY

20mm minimum thickness drained cavity to NZBC E2/AS1, 9.0 Wall claddings, where required. Fix vertical cavity battens to wall framing studs. The battens are fixed by the cladding fixings which will penetrate the wall framing studs over the wall underlay and/or rigid air barrier. Seal the top of the cavity and install cavity closer at base of walls, open horizontal (or raking) junctions, over openings (windows, meters etc).

Do not use horizontal cavity battens. Use cavity spacers where fixing is required between cavity battens.

3.10 PENETRATIONS

Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding. Required preparatory work includes the following:

- wall/cladding underlay to openings finished and dressed off ready for the installation of window and door frames and other penetrations
- claddings neatly finished off to all sides of openings
- installation of flashings (those required to be installed prior to installation of penetrating elements).

3.11 SEALING

Seal cut edges of plywood before fixing with primer or sealer to suit the surface finish being used.

3.12 FIXINGS GENERALLY

A maximum of 15mm from the edge, 150mm centres along edges and 200mm centres on intermediate supports.

3.13 FIXING PLYWOOD SHEETS

Fix sheets to the plywood manufacturers requirements. Lay sheets in a staggered layout, face-grain of sheet at right-angles to support and with sheets in square, true alignment and plane. Allow a 3mm gap between square edge sheets.

3.14 FIXING PLYWOOD CLADDING

Fit and fix to E2/AS1, 9.8 Plywood sheet, and the manufacturer requirement with sheets and trim all in plumb, true alignment and face.

3.15 INSTALL FLASHINGS

Install flashings, covers and soakers as detailed on the drawings and to NZBC E2/AS1, 4.0 Flashings, and NZBC E2/AS1, 9.8 Plywood sheet.

3.16 COMPLETE

Ensure the work is complete with all flashings, finishings and trim properly installed so the cladding system is completely weathertight.

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Completion

3.17 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

4.1 RADIATA PINE CERTIFIED SUSTAINABLE TIMBER

Check local supply capabilities. Delete clause if certified sustainable timber is not required.

4.2 PLYWOOD - ROOFING SUBSTRATE & WALL BACKING SHEETS

Use/Location:	General construction / membrane substrate
Grade:	C-D
Stress grade	F8
Thickness:	12, 17-19mm
Treatment:	H3.1 CCA H3.2 CCA

4.3 PROPRIETARY PLYWOOD CLADDING

Use/Location:	Ground Floor canopy soffits and wall lining in GF lobby behind feature timber battens (for fixing)
Thickness:	12mm
Grade:	A-B
Treatment:	H3.2 CCA Requires intumescent coating or fire protection pre-treatment - refer to Fire Engineers documentation
Finish:	Stained
Fixings:	Secret Fixed

4.4 SCREWS

10g x 50mm stainless steel required by NZBC E2 /AS1 for membrane installations.

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4241DC DIMOND DIMONDCLAD INTERLOCK CLADDING

1 GENERAL

This section relates to supply and installation of Dimond Roofing Dimondclad Interlock cladding complete with all components and accessories.

1.1 RELATED WORK

Refer to 4161 UNDERLAYS, FOIL AND DPC for wall underlay
Refer to 3821 TIMBER FRAMING for cavity battens

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

BMT	Base metal thickness
NZMRM	New Zealand Metal Roofing Manufacturers Inc
MS	Modified silicone

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 2269.0	Plywood - structural
AS/NZS 2728	Prefinished / pre-painted sheet metal products for interior / exterior building applications
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS 3566	Self-drilling screws for the building and construction industries
NZS 3604	Timber-framed buildings
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
Dimond Roofing and Cladding Systems Manual
Dimond DimondClad Interlock - Installer Guide
Dimond DimondClad Interlock - Product Technical Statement
Dimond Roofing UniCote® LUX Brochure
UniCote® LUX Data Sheet
AWTA Product Testing Reports for UniCote® Lux

Manufacturer/supplier contact details

Company:	Fletcher Steel Ltd
Trading as:	Dimond Roofing
Web:	www.dimond.co.nz
Email:	roofspec@dimond.co.nz
Telephone:	0800 346 663 (0800 DIMOND)

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

tbc with supplier	For failure of coating adhesion
tbc with supplier	For weatherproofing by material penetration

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- Provide this warranty on the Dimond Roofing standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years:	For workmanship

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be trained and approved Dimond Roofing as Roofing Smiths licensed installers. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

A list of approved installers can be obtained from the Dimond Roofing web site,

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following maintenance information contained in the Dimond Roofing & Cladding Systems Manual - Routine Maintenance, as electronic PDF format.

Provide this information prior to practical completion.

Compliance information

1.10 COMPLIANCE - PROPOSED ALTERNATIVE SOLUTION

Dimond Dimondclad Interlock cladding is presented as an alternative solution for:

Clause:	E2-External moisture
Performance:	E2.3.2 Roofs and exterior walls must prevent the penetration of water that could cause undue dampness, damage to building elements, or both.

Proposed alternative solution is supported by:

- Dimond NZBC E2 Compliance Statement
- Dimond standard details and installation guidelines - always installed over a drained cavity

Performance - general

1.11 EXTERNAL FIRE SPREAD - CLADDING MATERIAL NON-COMBUSTIBLE MATERIAL

Dimond Dimondclad Interlock cladding is manufactured from a non-combustible material with a surface finish no more than 1mm in thickness applied directly to the non-combustible substrate.

Quality control and assurance

1.12 INSPECTIONS

the Contractor is required to carry out or engage consultants to carry out inspections of parts of the work. It will typically be expected that the person carrying out the inspections will be required to provide producer statements in support of the work carried out.

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2 PRODUCTS

Materials

2.1 PRE-FINISHED ALUMINIUM

Aluminium alloy series 5005 or 5052 marine grade temper H34 for flashings or H36 for roll forming to suit application, coated to AS/NZS 2728.

Components

2.2 FASTENERS GENERALLY

Fixings and fasteners are to be compatible with all materials, the environment and meeting the requirements of the NZ Building Code. Installation is to be in accordance with NZBC E2/AS1 and/or the NZMRM CoP and Dimond Roofing requirements.
For fixing requirements refer to Dimond Roofing and Cladding Systems Manual for the selected profile.

2.3 FIXING SCREWS

To AS 3566. Screws appropriate to the cladding material and the supporting structure, as required by Dimond Roofing and with a minimum Class 4 or 5 durability and not less than the material being fixed. Screw into timber to penetrate by minimum 30mm and screws into steel to penetrate by minimum 6mm. Screw fasteners to be head stamped identifying the manufacturer and class. Refer to SELECTIONS.

2.4 RIVETS - ALUMINIUM

For zinc coated, zinc/aluminium coated or aluminium roofing use sealed aluminium rivets, minimum diameter 4mm.

2.5 FLASHINGS

To NZBC E2/AS1, 4.0 Flashings. Formable grade 0.55mm BMT for galvanized, Type AZ or AM - coated and pre-painted steel and 0.90 for aluminium to the same standards as the profiled sheets, notched where across profile. Ensure flashing material matches the cladding material.

2.6 CASTELLATED EXTERIOR CAVITY WALL BATTENS - FOR VERTICAL INTERLOCK

Refer to timber framing sections.

Minimum H3.2 Radiata Pine horizontal, castellated and bevelled cavity batten, minimum 20mm thick and 45mm wide or proprietary horizontal, fluted, cavity battens.

2.7 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING

Refer to timber framing sections.

2.8 RAB SUBSTRATE

Refer to relevant rigid air barrier section.

Accessories

2.9 WALL UNDERLAY

Refer to 4161 UNDERLAYS, FOIL AND DPC.

2.10 SEPARATION STRIP

PVC tape, wall or roof underlay or DPC as a separator between the CCA treated timber battens and metal cladding.

2.11 SEALANT

Neutral curing MS sealant or MS polymer sealant as required by Dimond Roofing and used as directed.

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3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

Store on a level firm base with packs well ventilated and completely protected from weather and damage. Do not allow moisture to build up between sheets.

Do not drag sheets across each other and other materials. Protect edges and surface finishes from damage.

3.2 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Ensure moisture content is:
Timber framing: 18% maximum
Plywood substrate: 18% maximum

Inspect the wall framing and supporting structure to ensure that it is complete and fully braced ready for cladding. Ensure that all necessary framing members are positioned so that cladding & flashing fixings go through plywood substrate (if required), cavity battens and into the primary wall structure.

Ensure wall underlay has been installed before proceeding with cladding.

3.3 SEPARATION

Isolate dissimilar materials in close proximity as necessary by painting the surfaces or fitting separator strips of compatible materials. Place isolators between metals and treated timber and cement based materials.

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALLATION GENERALLY

Install Dimondclad Interlock cladding in accordance with Dimond Roofing requirements to form a complete weather cladding system, including all flashings, cappings and penetrations.

Application - Preparation

3.6 PENETRATIONS

Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding. Required preparatory work includes the following:

- wall underlay to openings finished and dressed off ready for the installation of window and door frames and other penetrations
- claddings neatly finished off to all sides of openings
- installation of flashings (those required to be installed prior to installation of penetrating elements).

3.7 INSTALL DRAINED CAVITY - FOR VERTICAL DIMONDCLAD INTERLOCK

Install and tack fix horizontal castellated or proprietary cavity battens to wall framing nog/dwang line. Ensure the beveled edge at the top slopes down to the outside. The battens will be fixed by the cladding fixings which will penetrate the wall framing. Seal the top of the cavity and install cavity closer/vermin-proofing at base of wall, open horizontal (or raking) junctions, over openings (windows, meters etc). If necessary, use cavity spacers where fixing is required between cavity battens.

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3.8 FIX RAB SUBSTRATE

Refer to relevant rigid air barrier section.

3.9 FIX UNDERLAY OVER SUBSTRATE

Refer to 4161 UNDERLAYS, FOIL AND DPC

Install underlay over the plywood / RAB substrate to the underlay manufacturer's requirements and Dimond Roofing requirements.

3.10 INSTALL SEPARATION STRIP - METAL CLADDING ON TREATED CCA TIMBER

Fix separation strip to separate metal sheeting from CCA treated timber battens, prior to fixing cladding. Ensure separator is slightly wider than the timber batten.

Application - General

3.11 SET-OUT - FOR VERTICAL DIMONDCLAD INTERLOCK

Set Dimondclad Interlock cladding to vertical plumb lines and maintain verticality. Carefully set out to allow cover flashings of equal width at the ends of the building. During installation, regularly check panel alignment at top and bottom and joint gap widths, to eliminate creep or spread. Keep fastenings in line.

3.12 FIX SHEETS

Fix Dimondclad Interlock cladding in place using screw fixings with neoprene washer through the panel flange. Install and fix the first panel, install adjacent panels by inserting male flange into the groove of the installed panel, maintain a uniform 15mm gap and fix.

For Low to High Wind Zones to NZS 3604, screw fix through single skin of fixing groove, for Very High and Extra High Wind Zones, screw fix through the double skin of groove. Ensure fixings and spans are in accordance with Dimondclad Interlock Product Technical Statement to suit project wind zone stated in the general section 1220 PROJECT or in accordance with specific design in accordance with project engineer's requirements.

Double skin fixings will be visible at the back of the panel recessed joint. All exposed fixings to be paint colour matched before installation. Ensure screw fixings have a minimum 30mm embedment for timber framing and minimum 3 threads for steel framing.

3.13 MARKING AND CUTTING

Do not use black lead pencils for marking Type AZ and Type AM coated steel products. Cut by shear only, using nibblers or hand snips. Remove all cutting and drilling debris.

3.14 END LAPS

End laps are not permitted, except where specifically detailed.

3.15 INSTALL FLASHINGS

Flash to penetrations, openings, corners and edges using sealant and rivets to details, Dimond Roofing requirements and NZMRM CoP recommendations to form a weatherproof cover.

3.16 USE OF SEALANTS

Select and use sealants only as recommended by Dimond Roofing. Apply sealant in two narrow beads transversely across flashing intersections, close to the two edges. Avoid exposing sealant on outside surfaces.

Completion & Commissioning

3.17 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.dimond.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Cladding

4.1 DIMONDCLAD INTERLOCK PANEL CLADDING

Location:	external wall cladding at GF and Basement levels and GF undercroft sofft - refer to drawings
Profile:	Dimondclad Interlock Panel Cladding
Orientation:	Vertical
BMT/material:	0.55mm Steel, 0.9mm Aluminium
Coating system:	COLORSTEEL® Maxam™, Colorcote® Zinacore™, Colorcote® Zinacore™ PLUS, Colorcote® Magnaflow™, Colorcote® Magnaflow™ PLUS, UniCote® LUX
Colour:	Weathered Iron
Protective film:	No
Framing:	Timber
Fixings:	For timber framing: class 4 / 5, Timbertite, 10gx65mm pan head screw with neoprene washers

Components

4.2 FLASHINGS

BMT/material:	Refer to drawings
Coating system:	To match roofing
Colour:	Refer to schedule for flashing powder coat colour as different to 'Weathered Iron'

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4311DW DIMOND ADVANCED ROOFING SYSTEMS

1 GENERAL

This section relates to the supply and installation of Dimond Advanced roofing systems.
It includes:

- pre-finished metal base sheets
- vapour barrier (system-dependent)
- insulation
- roofing underlay
- vented roof rails (system-dependent)
- post & rail system (system-dependent)
- pre-finished, clip-fastened or screw-fixed profiled metal roofing top sheet
- associated fastenings, flashings and other associated accessories.

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

BMT	Base metal thickness
NZMRM	New Zealand Metal Roofing Manufacturers Inc

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS1	Protection from fire for buildings with sleeping (residential) and outbuildings (risk group SH)
NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZBC G12/AS1	Water Supplies
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS 3566	Self-drilling screws for the building and construction industries
ISO 9705	Fire tests - full scale room test for surface finish
EN 10147	Continuously hot-dip zinc coated structural steels strip and sheet - technical delivery conditions
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
Web only based:
Dimond Roofing and Cladding systems Manual
Building Product Information Sheets (Advanced Vented, Advanced Non-Vented, Advanced Standard)
Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024
Pink Batts Building Insulation Blanket Product and Installation Guide
Dimond Advanced Roofing Systems CAD/PDF details

BRANZ Appraisal 238 (2023) - Pink® Batts® Insulation - Amended 23 February 2026
BRANZ Appraisal 651 (2024) Thermakraft Covertek 407 Roof and Wall Underlay
BRANZ Appraisal 917 (2020) Thermakraft Covertek 403 Roof and Wall Underlay

Manufacturer/supplier contact details

Company:	Fletcher Steel Ltd
Trading as:	Dimond Roofing
Web:	www.dimond.co.nz

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Email: roofspec@dimond.co.nz
Telephone: 0800 346 663 (0800 DIMOND)

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty, including failure of coating warranties for profiled metal sheets:

20 years	For base sheet
15 years	For vapour barrier
15 years	For insulation
15 years	For roof underlay
15 years	For post & rail system
30 years	For roofing sheet

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years	For installation of Advanced roofing system

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Applicators / installers to be experienced in the application / installation of Dimond Advanced roofing systems products and be a Dimond Adanced roofing systems recommended installer. If requested provide evidence of qualification / experience prior to commencing work, such as National Certificate in Metal Roofing and Cladding. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified Dimond Adanced roofing systems, components and associated products listed in this section.

Compliance information

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicator approval certificate from the manufacturer / importer / distributor
- Manufacturer / supplier warranty
- Installer / applicator warranty
- Producer Statement - Construction from the applicator / installer
- Other information required by the BCA in the Building Consent Approval documents.

Performance - Wind (design by contractor)

1.9 DESIGN PARAMETERS WIND - DESIGN BY CONTRACTOR

Design the installation to the manufacturer requirements and as appropriate for the project wind design stated in the general section 1220 PROJECT.

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Performance - Thermal

1.10 THERMAL PERFORMANCE - IKO ENERTHERM

IKO Enertherm ALU insulation board has an aged thermal resistance (R-value) of the following:

160mm R7.2

based on an aged thermal conductivity of 0.022 W/mK.

Performance - Acoustic

1.11 ACOUSTIC PERFORMANCE - ADVANCED VENTED / NON-VENTED

Advanced Non-Vented system for all thicknesses of insulation board has an expected performance of STC 33 and LIA 54 (dB) for a rainfall rate of 112mm/hr.

Performance - General

1.12 DRINKING WATER

Roofing for collecting potable water to NZBC G12/AS1.

2 PRODUCTS

Materials

2.1 STEEL - GALVANIZED, UNPAINTED

Formability steel sheet, G550 for roll forming or G300 for flashings, coated to AS 1397.

2.2 STEEL - TYPE AZ COATING (ALUMINIUM/ZINC ALLOY), UNPAINTED

Formability steel sheet, G550 for roll forming or G300 for flashings, coated to AS 1397.

2.3 STEEL - TYPE AZ COATING (ALUMINIUM/ZINC ALLOY), PRE-PAINTED

Formability steel sheet, G550 for roll forming or G300 for flashings, coated to AS 1397. Prefinished /pre-painted to AS/NZS 2728.

2.4 STEEL - TYPE AM COATING (ALUMINIUM/ZINC/MAGNESIUM ALLOY), PRE-PAINTED

Formability steel sheet G550 for roll forming or G300 for flashings, coated to AS 1397. Prefinished /pre-painted to AS/NZS 2728.

Components

2.5 BASE SHEET

DIMOND metal tray:

- Dimond LT7

Formability steel sheet, G550 for roll forming or G300 for flashings, coated to AS 1397. Supplied in 0.40mm & 0.55mm BMT, to suit purlin spacing and loading. Available in the following finishes:

- Type AZ coating (aluminium/zinc alloy), unpainted
- Type AZ coating (aluminium/zinc alloy), prefinished /pre-painted to AS/NZS 2728
- Type AM coating (aluminium/zinc/magnesium alloy), pre-painted to AS/NZS 2728.

Refer to SELECTIONS.

2.6 VAPOUR BARRIER

Kingspan Thermakraft CaVap Alu 1500 UV-AC vapour barrier, a self-adhesive, air and vapour barrier consisting of a multilayer aluminium composite, with a tear-resistant fabric reinforcement. Membrane is fully coated on the underside with acrylate adhesive, covered by a siliconized polyethylene liner. Refer to SELECTIONS.

2.7 INSULATION BOARD

Insulation:

- IKO Enertherm ALU insulation board, comprised of a core of hard polyisocyanurate (PIR) foam coated on both sides with tri-ply gas-tight aluminium. Supplied in various thicknesses and R-values with a standard sheet size 1000mm x 1200mm

Refer to SELECTIONS

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2.8 ROOF UNDERLAY

Roofing underlay:

- SOLITEX MENTO® 1000 Connect, a three-layer roof underlay with a monolithic Thermoplastic Elastomer Ether Ester (TEEE) functional membrane with 2 integrated self-adhesive sections. Supplied in rolls 1.5m wide x 50m long.

Refer to SELECTIONS

2.9 VENTED ROOF RAILS

Dimond steel vented roof rail of 1.45mm BMT Z450 galvanized steel with pre-drilled fixing holes. Standard profile nominally 70mm wide x 27mm high and supplied in various lengths to suit base sheet.

Accessories - Fixings

2.10 FASTENERS GENERALLY

Fixings and fasteners to be compatible with all materials, the environment and the requirements of the NZ Building Code. Installation to be in accordance with NZBC E2/AS1 and/or the NZMRM CoP and Dimond requirements.
For fixing patterns refer to Dimond Fixing Charts for the selected profile.

2.11 FIXING SCREWS

To AS 3566. Screws appropriate to the roofing material and the supporting structure, as supplied by Dimond and with a minimum Class 4 durability and not less than the material being fixed. Screw fasteners to be head stamped identifying the manufacturer and class. Refer to SELECTIONS.

Accessories - General

2.12 LAP SEAL TAPE - ROOFING UNDERLAY

Kingspan Thermakraft Premium Joining Tape for sealing end laps and repairing tears in Solitex Mento 1000 Connect underlay. A multi-layered reinforced synthetic tape with a layer of acrylic adhesive to one side of the tape.

2.13 SEALING TAPE - ROOFING UNDERLAY

Thermaflash® tape, a self-adhering flexible flashing tape. Coloured white on the top surface and printed with the name Thermaflash®. Tape incorporates a clear release liner. Available in rolls 75, 150 and 200mm wide x 23m long. Rolls are supplied individually shrink wrapped.

2.14 MULTI-PURPOSE ADHESIVE - ROOFING UNDERLAY

ORCON® Classic multi-purpose adhesive, for sealing end laps and repairing tears in Solitex Mento 1000 Connect underlay. Supplied in a 310ml cartridge or 600ml sausage.

2.15 ADHESIVE - INSULATION BOARD

Solvent based, multi-purpose spray adhesive such as ADOS F2 Contact Adhesive.

2.16 EXPANDING FOAM

Self-expanding polyurethane foam spray. Supplied in a can.

2.17 PROFILED FOAM STRIP

Ecofoam profiled foam strip is a polyethylene closed cell foam seal profiled to fit under Dimond roofing profiles.

2.18 CAVIBAT BATTEN AS CAVITY CLOSURE STRIP

Cavibat extruded polypropylene, fluted, non-structural batten.

2.19 NURALITE BUTYL TAPE

Nuralite double sided butyl tape, 25mm wide

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Accessories - flashings

2.20 FLASHINGS GENERALLY

To NZBC E2/AS1, 4.0 Flashings.
Formable grade 0.55mm BMT for galvanized, aluminium/zinc, aluminium/zinc/magnesium - coated and pre-painted steel, to the same standards as the profiled sheets, notched where across profile or provided with a soft edge.

2.21 FLASHINGS TO VERGE, RIDGE AND HIP

Supplied by the roofing manufacturer to match or to suit the roofing / liner in the same material as the roofing / liner.

2.22 BOOT FLASHINGS

Generally to NZBC E2/AS1, 8.4.12 Roof penetrations. EPDM proprietary pipe flashing laid on 45° bias to roofing, with over-flashing (soaker flashing) if required.
Refer to NZBC E2/AS1, Table 8.4.12.1: Catchment areas for profiled metal, for maximum penetration size and catchment area above penetration.

2.23 LINER EDGE FLASHING

0.6mm Nuraply ALU Peel and stick vapour barrier, to close any gaps between liner and building edge.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 INSPECTION

Inspect the roof framing and supporting structure to ensure that it is complete and fully braced ready for roofing. Ensure the vertical alignment of purlins are to the specified roof pitch ±5mm of each other and that there are no protrusions that could damage installation of liner sheet.

3.4 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.
Framing timber moisture content maximum levels:

- <18% where in direct contact with metal liner sheet
- <16% where in direct contact with metal transverse flashings.

Transverse flashings can be temporarily tacked in place and final fixing done when moisture content is acceptable.

3.5 SEPARATION

Isolate dissimilar materials (metals and non-metals) in close proximity as necessary, by painting the surfaces or fitting separator strips of compatible or inert materials. Place isolators between metals and treated timber and cement-based materials. Do not use unpainted lead sheet or copper in contact with, or allow water run-off onto, galvanized or aluminium/zinc coated steel.

3.6 GUTTER BRACKETS

Ensure all gutter brackets for external gutters are securely installed at the correct height relative to the roof sheet and through the cladding to supporting framework. Refer to 7411D DIMOND RAINWATER SPOUTING SYSTEM for details.

Installation/application

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

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3.8 GENERALLY

Work and materials to Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024 and NZMRM CoP.

Installation - Liner sheet

3.9 INSTALL LINER

Lay steel liner sheet in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024, ensuring wide ribs facing upwards and all laps laid with the upper sheet over the lower sheet so that water flows over the lap.

3.10 FIX LINER

Pan fix liner with:

- Tek screws 12g x 20mm long every 2nd pan to steel purlins below
- Roofzip M6 x 50 class 4 to the timber purlins below.

Keep screw lines straight and accurately in centre of purlin.

Fix liner sheet side laps at midspan for:

- 0.4mm BMT greater than 1.5m internal span
- 0.55mm BMT greater than 2m internal span.

3.11 INSTALL RIDGE FLASHINGS

Install and fix apex ridge flashings as detailed.

3.12 INSTALL BUILDING EDGE FLASHINGS

Install and fix building edge flashings as detailed.

3.13 INSTALL VAPOUR BARRIER

Lay vapour barrier over liner sheet to close any gaps between liner sheet and building edges. Position vapour barrier to extend up 50mm higher than top of finished insulation board over.

Installation - lap seal tape

3.14 INSPECT LINER SHEET

Confirm that the Dimond liner sheet is smooth, dry, and free from any debris or contaminants. Peel off the release liner from the lap seal tape. Position the lap seal tape at the centre of the lap material. Firmly press lap seal tape down and peel off more release liner from the tape as needed. Do not stretch or pull the tape at any point during the installation. Maintain 50mm minimum lap join distance between lap seal tape.

Installation - insulation board

3.15 INSPECT LINER SHEET

Ensure steel liner sheet is free from pools of water. Wipe dry if necessary.

3.16 INSTALLATION PROGRAM

Lay insulation boards and topping sheets on dry days only, with wind speed low or zero, allowing time to install subsequent layers of system. Do not leave unprotected insulation board exposed overnight.

3.17 INSTALL INSULATION BOARD

Install PIR insulation board over substrate in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024. Lay in a brick bond pattern & orientate sheets 1.2m across roof and 1m down the roof slope. Use spot fixing of spray adhesive to temporarily hold boards in place, as required. Cut insulation boards with a knife or sharp saw.

3.18 INSTALL INSULATION BLANKET

Install Insulation over substrate in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024. Lay in a brick bond pattern & orientate blankets to minimise gaps and lap joint. If cutting is required, cut to size allowing insulation to fit neatly into all gaps.



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3.19 APPLY EXPANDING FOAM

Apply expanding foam, in accordance with manufacturer's instructions, to apex ridge gap, to seal around all penetrations and to fill gaps in the insulation board layer.

3.20 APPLY EAVES CAPPING FLASHING

Install insulation board edge capping at eaves, in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024 and details.

Installation - roof underlay

3.21 INSTALL ROOF UNDERLAY - VENTED AND NON-VENTED SYSTEMS

Install underlay over insulation board in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024. Run vertically from ridge to gutter in continuous lengths and pull taut. Peel off cover tape and stick lap onto previously laid underlay. Position carefully as, once placed, it is difficult to re-position without damaging.

3.22 INSTALL ROOF UNDERLAY - STANDARD SYSTEM

Install underlay over Post & Rail system in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024. Run vertically from ridge to gutter in continuous lengths and pull taut. Peel off cover tape and stick lap onto previously laid underlay. Position carefully as, once placed, it is difficult to re-position without damaging.

3.23 EDGE & END LAPS

End laps to be 150mm minimum. Seal with Orcon multi-purpose liquid adhesive and Tescon Extora. Repair all tears to underlay. Seal off all edges or join to wall underlay using same adhesive & taping method.

3.24 SETOUT - ABOVE UNDERLAY

Transfer and mark the purlin line on the underlay to ensure the rail fastenings align with purlin below

3.25 SEPARATE

Ensure underlay is separated from any heat source such as flues and chimneys. Confirm detail with Contract Administrator, if no detail has been provided.

Installation - vented roof rail

3.26 INSTALL & FIX VENTED ROOF RAIL

Install and fix vented roof rail board in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024. Place with legs facing down, over purlin lines marked on the underlay. Fix with long Tek screws 14g x 10 threads per inch through pre-punched holes in rail at 300mm centres, down through underlay, insulation board, liner sheet to engage with purlin. Stagger fixings each side of rail. Butt subsequent rails together ensuring no gaps between. Use two fixings every 900mm centres for High wind zone and below, and 600 centres for Very High and Extra High wind zones. Overall screw length varies and is dependent on the thickness of PIR insulation board.

Installation - top sheet

3.27 INSTALL CAVITY CLOSURE STRIP

Install Cavibat batten within 10mm of gutter eaves and stick down using 25mm wide Nuralite double sided butyl tape in 20mm wide strips at 500mm centres.

3.28 ROOF FASTENING GENERALLY

Install and fix in accordance with the Dimond required fixing patterns and details. Use only screws supplied by Dimond and ensure all roof fastenings only fix down into the vented roof rail and do not penetrate the roof underlay or insulation board. Paint colour matched visible fixings and accessories before installation.

3.29 SET-OUT

Carefully set out with consideration of the position of side laps to take account of the prevailing wind and line of sight. Ensure all sheets are square and over-sailing the gutter true to line. Check during fixing to eliminate creep or spread and string lines along vented roof rail / purlin centres to keep fastenings in line.



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3.30 END LAPS

Avoid end laps, except where specifically detailed.

3.31 THERMAL MOVEMENT

Make provision for thermal expansion where required, if sheet lengths exceed 18 metres. Refer to NZMRM CoP and to the roofing manufacturer for details.

3.32 MARKING AND CUTTING

Use chalk line, Chinagraph pencils or coloured pencil for marking roof sheets prior to cutting. Do not use lead pencil for marking Zincalume®, Colorsteel® or Colorcote®. Cut by shear only, using nibblers or hand snips. Remove all cutting and drilling debris from the roof.

3.33 STOP ENDS AND DOWNTURNS

Form stop-ends at the upper end of sheets. Form downturns at the gutter line where the roof pitch is less than 8°. Form using the required tools.

3.34 FLASHINGS

Flash roof to parapets, walls and penetrations, to detail. Where no detail is provided, flash to NZMRM CoP recommendations and Dimond requirements. Cut accurately and fix using sealant and rivets to detail and to Dimond requirements, to form a weatherproof cover. For highly visible flashings, plan joints/junctions to take account of the aesthetic requirements.

3.35 BOOT FLASHINGS

Position boot flashing so that it dams a roofing pan no more than 50%, if this cannot be avoided, use an over-flashing back to the ridge and fix the boot flashing to that.
Refer to NZBC E2/AS1, Table 8.4.12.1: Catchment areas for profiled metal, for maximum penetration size and catchment area above penetration.

3.36 FLASHING VENTILATION GAP

Notch transverse roof flashings around roofing profile with a 3mm gap between flashing downturn and roofing profile, in accordance with Dimond Advanced Roofing Systems Installation Guide version 1.0 June 2024.

3.37 USE OF SEALANTS

Select and use sealants only as recommended by Dimond. Remove any swarf and clean down. Apply sealant in two narrow beads transversely across flashing intersections, close to the two edges. Avoid exposing sealant on outside surfaces.

3.38 FLASHING PENETRATIONS

Flash all penetrations through the roof. Fit pipe flashings with a proprietary collar flashing, with other penetrations flashed as detailed and to provide a weathertight installation. Ensure that flashings are set to avoid any water ponding.

Completion

3.39 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.dimond.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Performance

4.1 SURFACE FIRE PROPERTIES

Contact Dimond for further information on current fire performance rating in accordance with NZBC.

Group Number	Panel/Finish	Location
Group 1S	0.55mm / Steel	Roofing

A Group number may not be required in situations such as, the surface area is less than 5m² (NZBC C/AS2, paragraph 4.12.4.1 (a)), or the design is to NZBC C/AS1 risk group SH (houses etc).

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Materials

Materials - General

4.2 DIMOND METAL LINER

Profile:	Dimond LT7
BMT/material	0.55mm / Zincalume
Cover width:	889mm
Sheet width:	993mm
Coating system:	Unpainted, Zincalume coated
Paint colour:	TBC
Purlin material:	Steel
Fixing:	Tek Screws 12g x 20mm long every 2nd pan
Finish:	Refer to SELECTIONS above

4.3 DIMOND TOP SHEET

Profile:	Dimond LT7
BMT/material	0.75mm / ColorCote Zinacore
Cover width:	889mm
Sheet width:	993mm
Coating system:	ColorCote Zinacore
Paint colour:	TBC
Purlin material:	Steel
Fixing:	Refer to 4311D DIMOND PROFILED METAL ROOFING for SELECTIONS.
Finish:	Refer to SELECTIONS above

4.4 VAPOUR BARRIER

Type:	CaVap Alu 1500 UV-AC
Roll size:	1.5m wide x 100m long

4.5 INSULATION - PIR

Type:	IKO Enertherm ALU insulation board
Sheet size:	1200mm x 1200mm
Thickness:	160mm
R-Value:	R7.27
Fixing:	Temporary spot adhesive fixing until vented metal rail installed over

4.6 ROOF UNDERLAY

Type:	SOLITEX MENTO® 1000 Connect
Roll size:	1.5m wide x 50m long

4.7 VENTED ROOF RAILS

Type:	Dimond vented roof rails
Size:	70mm wide x 27mm high x 3.3m or 3.9m long
Location:	Over all purlin lines
Fixings:	Tek screws 14g x 10 threads per inch x ~mm long

4.8 DIMOND ROOFING PROFILE

Refer to 4311D DIMOND PROFILED METAL ROOFING for SELECTIONS.

Accessories

4.9 FLASHINGS - GENERALLY

Profile:	Refer to drawings, varied.
BMT/material:	Alum/zinc/magnesium coated steel 0.55mm
Coating system:	To match roofing / metal liner, Colorcote® Magnaflow™
Paint colour:	To match roofing / metal liner

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4.10 FLASHINGS - LINER EDGE

Brand/type: Nuraply ALU peel & stick vapour barrier
Thickness: 0.6mm

4.11 CLOSURE STRIPS

Brand/type: Cavibat batten as cavity closure strip



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4421N NURAPLY 3PM MEMBRANE ROOFING & DECKING

1 GENERAL

This section relates to the application of Nuralite Group Limited Nuraply 3PM as a double layer, fully adhered bituminous membrane system with associated components & accessories.

It includes:

- Nurathem insulated roof system with Nuraply 3PM membrane over Nuratherm insulation installed over plywood, concrete and metal tray deck substrates.
- Nuraply 3PM membrane installed directly over concrete substrate.

1.1 RELATED WORK

Refer to 4381NJ NURAJACK DECK SUPPORT SYSTEM for pedestal support systems for floating timber and tile / stone paved decks.

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B2/AS1	Durability provisions for building elements
AS 2122.1	Combustion characteristics of plastics - Determination of flame propagation - Surface ignition of vertically orientated specimens of cellular plastics
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
BRANZ Good practice guide	Membrane roofing
CodeMark™ CMNZ70032 ver4	Nuraply 3PM Torch-on Membrane for Roofs, Decks, Gutters and Parapets

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Nuralite Group Limited: CAD drawings
Nuraply 3PM Roofing Membrane Installation Manual
Nuralite Group Limited: Substrate Readiness Checklist

Manufacturer/supplier contact details

Company:	Nuralite Group Limited
Web:	www.nuralite.co.nz
Email:	info@nuralite.co.nz
Telephone:	09 579 2046 Auckland 0800 Nuralite (0800 687 254)

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

20 years:	For Nuraply 3PM membrane roofing & decking system

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years:	For membrane system installation

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- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

1.7 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be Nuralite Group Limited Authorised Membrane Applicators. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicators approval certificate from the distributor
- Distributors warranty
- Installer's / applicator's warranty
- Producer Statement - Construction from the applicator / installer
- Other information required by the BCA in the Building Consent Approval documents.

Performance - general

1.9 PERFORMANCE

Accept responsibility for the weather-tight performance of the completed Nuraply roofing system, including all penetrations through the roof and junctions with walls and parapets. In the event that there are issues relating to any aspect of this work, arrange for a meeting to resolve these issues. The following should attend:

- Nuraply roofing applicator
- Nuralite representative
- Contractor
- Principal
- Principal's consultant(s)

1.10 AS APPROVED

"As approved" means that the materials are compatible with Nuraply 3PM roofing and are part of the system required by the roofing supplier for each specific location.

Compliance Information

1.11 COMPLIANCE - CODEMARK CERTIFICATE

Nuraply 3PM Roofing Membrane System meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark® certificate of conformity CMNZ70032.

Performance - Wind

1.12 WIND ZONE DESIGN PARAMETERS – VERY HIGH OR EXTRA HIGH

According to the wind zone parameters of NZS 3604, table 5.4 this project is rated as very high or extra high. Ensure that the installation is adequate for this standard or greater.

Performance - Nuratherm Insulated roof system

1.13 DURABILITY

Nuratherm insulated roof system complies with NZBC B2/AS1 when maintained to Nuralite requirements.

1.14 ENERGY EFFICIENCY

IKO Nuratherm ALU insulation board has an aged thermal resistance (R Value) of the following:

40mm	R1.80
50mm	R2.25

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60mm	R2.70
70mm	R3.15
80mm	R3.60
100mm	R4.55

based on an aged thermal conductivity of 0.022 W/mK.

1.15 FIRE SAFETY

IKO Nuratherm PIR insulation board complies with the flame propagation criteria as specified in AS 2122.1.

2 PRODUCTS

Materials - Nuraply 3PM two layer system

2.1 NURAPLY WATERPROOFING MEMBRANE, VENTILATED BASE LAYER

Nuraply 3PV-SA single layer, 4mm thick reinforced fibre asphalt waterproofing membrane with film surface for overlaying with Nuraply 3PM. Preferred product for the base sheet waterproofing of new concrete deck areas. Supplied in 1m wide x 10m long rolls.

2.2 NURAPLY WATERPROOFING MEMBRANE, MINERAL FACE TOP LAYER

Nuraply 3PM single layer, 4mm thick reinforced fibre asphalt waterproofing membrane with textured mineral aggregate finish. Top layer over Nuraply 3PV-SA basesheet. Supplied in 1m x 7.5m long rolls.

Materials - Nuratherm insulated roof system

2.3 INSULATION BOARD

IKO Nuratherm ALU insulation board, comprised of a core of hard polyisocyanurate foam coated on both sides with tri-ply gas-tight aluminium.

2.4 TAPERED INSULATION BOARDS

Nuralite Nuratherm tapered insulation materials available to provide a 1:60 slope.

2.5 VAPOUR BARRIER

Nuraply ALU, 0.6mm thick self-adhesive modified bitumen sheet membrane with a top side of polyester reinforced aluminium foil. Used as a vapour barrier between the substrate and insulation board when required. Supplied in 1.08m wide x 25m long rolls.

2.6 NURAPLY WATERPROOFING MEMBRANE, PRESSURE DIFFUSER BASE LAYER

Nuraply 3PV-SA single layer, 3mm thick self-adhesive reinforced fibre asphalt waterproofing membrane with built in vapour pressure diffuser based on a diamond pattern. Used as a base layer for Nuratherm insulated roof system. Supplied in 1m wide x 10m long rolls.

2.7 NURAPLY WATERPROOFING MEMBRANE, MINERAL FACE TOP LAYER

Nuraply 3PM single layer, 4mm thick reinforced fibre asphalt waterproofing membrane with textured mineral aggregate finish. Top layer over Nuraply 3PV-SA basesheet. Supplied in 1m x 7.5m long rolls.

Components - general

2.8 MS DETAIL

Liquid waterproofing to provide additional waterproofing protection.

2.9 NURADECK BANDAGE SYSTEM

Liquid applied elastomeric, fibre reinforced waterproofing system.

Components - Nuratherm insulated roof system

2.10 METAL TRAY DECK

Nuralite LT7 metal tray, as manufactured by Dimond Roofing, comprised of G550 aluminium-zinc AZ150 to AS 1397.

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2.11 FASTENERS AND WASHERS

Nuratherm IKO Fix Screws and Flange system.

Polypropylene telescopic sleeves for fixing membrane and insulation. Screws supplied in lengths to suit both the substrate and installed insulation.

Accessories

2.12 PRIMER

Nuraflux QD primer for substrate preparation prior to bonding Nuraply roofing systems to concrete and plywood, to Nuralite specification.

2.13 SEALANT

IKO Stickall Bitumen - high performance bitumen mastic sealant.

Soudal Gorilla MS - single component elastomeric MS UV stable sealant.

2.14 EXPANDING FOAM

Soudal Gorilla Nailpower fire rated expanding foam.

2.15 DECK SUPPORT SYSTEMS - NURAJACKS & NURAPADS

Refer to 4381NJ NURAJACK DECK SUPPORT SYSTEM for specification.

2.16 ALUMINIUM TAPE

3M Aluminium tape in 150mmm or 48mm widths.

2.17 BITUMEN FILLET

Nuralite Triangular.

2.18 PENETRATION SEAL

Lockin Pocket.

2.19 NURALITE FIXING PLATE

Nuralite Fixing Plate, provides a universal fixing offering one M10 x 20mm female threaded anchor points for securing most types of rails and bars.

2.20 OUTLETS

As detailed and rebated into surfaces as required by Nuralite. Refer to SELECTIONS for details.

2.21 GUTTER LIP TRIM

0.55 folded sheet to provide a protected face to insulation board at gutter lip.

2.22 ELECTRONIC LEAK DETECTION - CONDUCTIVE TAPE

Nuralite Electronic Leak Test Tape, 50mm wide self-adhesive conductive tape.

2.23 ELECTRONIC LEAK DETECTION - EARTHING PLATE

Nuralite Electronic Leak Test Earthing Plate with earthing cable.

Coatings

2.24 COATING OVER NURAPLY 3PM (OPTIONAL)

Surface dressing: NURAGLAZE.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

Take delivery of rolls undamaged and include for site handling facilities where required. Stack on end, off the ground on a level surface and with accessories. Store in shade or cover in hot sun. Protect liquid components from freezing.

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3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 GENERALLY

Work and materials to Nuraply 3PM Installation Manual, BRANZ Good practice guide - Membrane roofing, and to Nuralite installation instructions.

3.4 LAYOUT

Refer to drawings for details. Supplement with Nuralite generic details if situation is not covered on drawings. If not detailed on the drawings, confirm the layout to suit site conditions and for the performance of the Nuraply 3PM system. Stagger junctions of Nuraply 3PM rolls to avoid 4 layer membrane build-up at corner lap joints.

3.5 INSTALLATION SEQUENCE

Install Nuraply 3PM membrane systems in sections to produce a weather tight at the end of each work period. Ensure that moisture absorbent substrates and insulation panels are covered with Nuraply 3PM membrane on the same day they are laid or ensure that the base is kept covered and dry until Nuraply 3PM membrane is laid. Seal exposed Nuraply 3PM membrane edges at the end of each work period to ensure complete system remains dry.

Installation - preparation

3.6 PRELIMINARY WORK

Ensure that preliminary work, including formation of falls, flashing rebates, grooves, ducts, provision of battens and fillets and outlets rebated to levels, is complete and properly constructed to enable the system to work as intended. This work and the substrate to be smooth, clean and dry.

3.7 ACCEPTANCE OF SUBSTRATE

Confirm that the substrate, including fillets, sumps, rebated outlets and projections, will ensure Nuraply work of the required standard. Ensure the substrate is smooth, clean and dry. Complete “Substrate Readiness Checklist” provided by Nuralite. Refer to MANUFACTURER/SUPPLIER DOCUMENTS.

Confirm the moisture content of substrates:

Concrete substrate:	Relative humidity of 75% maximum
Plywood/ timber substrate:	Moisture Content of 20% maximum

3.8 PLYWOOD SUBSTRATE

Ensure that sheets have been stretcher bond laid to falls, are rigid, with joints flush, edges arrised, upstands filleted, no lumps or hollows, smooth, clean, dry and free of debris. Plywood grain across the line of supports below.

Constructed falls on roofs and decks to be 1 in 80 minimum and 1 in 100 for gutters.

3.9 CONCRETE SUBSTRATE

Ensure wood float concrete substrate has been allowed to cure for at least 28 days before commencing application. Prepare surface, including vacuum cleaning and patching as necessary to leave smooth, clean, dry and free of debris.

Constructed falls on roofs and decks to be 1 in 80 minimum and 1 in 100 for gutters.

3.10 METAL TRAY DECK SUBSTRATE

Ensure that metal tray decking and supporting structure has been installed in accordance with Dimond Roofing requirements and specification. If using timber supports, ensure bitumen tape is installed between timber and metal tray.

Constructed falls on roofs and decks to be 1 in 80 minimum and 1 in 100 for gutters.



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Installation - general

3.11 WELD JOINTS

Heat fuse joints minimum width 80mm side and 100mm end laps using Nuralite self-checking lap welding techniques.

3.12 PENETRATIONS

Form mould, weld and flash all upstands, downturns and penetrations to Nuralite details including raised, anti-ponding water deflectors on the upside of penetrations.

3.13 MOVEMENT JOINTS

Form and weatherproof movement joints as designed to Nuralite details.

3.14 JUNCTIONS

Check that adjoining walls and parapets are prepared ready for the installation of NURAPLY roofing. Confirm that openings have been prepared ready for the installation of skylights and other penetrations through the roof.

Required work includes the following:

- Roofing installation neatly finished to all sides of openings and to all wall and parapet junctions.
- Installation of flashings (those required to be installed prior to installation of penetrating elements and/or wall linings).

Installation - Nuraply 3PM two layer system

3.15 FIRST LAYER ON CONCRETE

Lay the first Nuraply 3PV-SA layer into the Nuraflux QD primed substrate to Nuralite requirements, with joints to be welded a minimum of 80mm down the roll edges and 100mm across the roll ends. Lay in order from low points, sumps, through gutters, valleys, eaves, verges main roof and upstands to cover flashings.

3.16 LAYING AND JOINTING SECOND LAYER - MINERAL FACE

Lay the second Nuraply 3PM layer by heat fusing over the cleaned repaired and Nuraflux QD primed (if necessary) surface of the first layer in the same sequence. Joints in the second layer must not correspond with joints in the first layer. Second layer joints to be welded lap-joints, minimum 80mm wide down roll edges and minimum 100mm wide across roll ends, to the Nuraply 3PM supplier's requirements. Roll junctions must be staggered to avoid 4-layer lap-weld build-up of Nuraply 3PM at corners. Ensure unobstructed drainage flow at outlets.

Installation - Nuratherm insulated roof system

3.17 LAY VAPOUR BARRIER

Lay Nuraply ALU self-adhesive vapour barrier onto the Nuraflux QD primed substrate to Nuralite requirements with joints being rolled and well-sealed shut.

3.18 LAY NURATHERM INSULATION

When using tapered boards to create the fall, layout needs to be carefully considered before commencing so that there is positive drainage to all outlets. Ensure that sheets have been stretcher bond laid to falls, are rigid, with joints flush upstands filleted, no lumps or hollows, smooth, clean, dry and free of debris.

For double layered systems, use one fixing to hold the first layer of sheets and then fix down the second sheet using IKOfix thermal break flanges at the prescribed amount.

Seal any gaps in the insulation with expanding foam to produce a continuous insulation blanket with no gaps. Apply a layer of Aluminium Tape to any exposed ends of insulation sheets, flanges, wall junctions, fixings and sheet joins to provide a surface for the membrane to adhere to. Support edges of sheets with a metal angle. On the lip of gutters, a Gutter Lip Trim may be installed if the insulation sheet edge requires additional protection from damage.



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Secure the sheets to the substrate with Nuratherm fasteners at a rate based in the Installation checklist.

3.19 APPLY ELECTRONIC LEAK DETECTION SYSTEM

Apply 50mm wide strips of Nuralite Electronic Leak Test Tape centred over every Nuratherm insulation board join. Install Nuralite Electronic Leak Test Earthing Plates to the surface of Nuratherm insulation boards at a rate of 1 per 500m2 roof area. Run and connect earthing cable through a dedicated Goose Neck cable duct in accordance with Nuralite installation details.

3.20 INSTALL BASE LAYER

Install Nuraply 3PV-SA self-adhesive base layer in accordance with Nuralite requirements.

3.21 INSTALL NURAPLY WATERPROOFING MEMBRANE - MINERAL FACE TOP LAYER

Lay the second Nuraply 3PM layer by heat fusing over the cleaned repaired and Nuraflux QD primed (if necessary) surface of the first layer in the same sequence. Joints in the second layer must not correspond with joints in the first layer. Second layer joints to be welded lap-joints, minimum 80mm wide down roll edges and minimum 150mm wide across roll ends, to the Nuraply 3PM supplier's requirements. Roll junctions must be staggered to avoid 4-layer lap-weld build-up of Nuraply 3PM at corners. Ensure unobstructed drainage flow at outlets.

Installation - Nurajack and Nurapad deck support system

3.22 NURAJACK & NURAPAD INSTALLATION

Refer to 4381NJ NURAJACK DECK SUPPORT SYSTEM for details.

Testing

3.23 TEST - FLOOD - COLD ROOFS

Flood test gutters and where practical other low pitch and horizontal areas with a minimum 50mm depth of water for 24 hours. Make good any lack of water tightness when the surface is completely dry. Repeat water test process after making any necessary repairs.

3.24 TEST - ELECTRONIC LEAK DETECTION - WARM ROOFS

Carry out leak detection testing on warm roofs using Nuralite Electronic Leak Detection system upon completion of membrane installation and prior to any covering. Make good any lack of water tightness when the surface is completely dry. Depending on conditions, repeat a total or localised test process after making repairs.

Finishing

3.25 APPLY SURFACE DRESSING TO NURAPLY 3PM (OPTIONAL)

Thoroughly wash clean NURAPLY 3PM surface before application of the Nuraglaze. Apply Nuraglaze as 2 thin coats to Nuralite details. Ensure the specified Nuraglaze coating system is placed as soon as practical after completing laying the membrane.

Conditions - completion

3.26 ACCESS BOARDS

Provide access boards for later operations and remove when no longer needed.

3.27 FOOT TRAFFIC

Do not allow construction foot traffic on the Nuraply 3PM installation after laying to avoid dirt and damage to the surface.

3.28 FORM WALKWAY

In areas where ongoing maintenance traffic is anticipated, fully bond a third layer of Nuraply 3PM in a contrasting colour to act as a walkway and wear course.

3.29 ACCEPTANCE

Arrange for an inspection of the completed work. Protect and maintain roofing until completion of the contract works.

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3.30 SUBSEQUENT WORK

Make good any covering cut or deformed by later work. Making good to take the form of inserting a new whole or part infill sheet to maintain the appearance of the covering as originally laid.

Completion

3.31 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.nuralite.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Nuraply 3PM two layer system

4.1 NURAPLY 3PM TWO LAYER SYSTEM ON NEW CONCRETE

Location:	Level 04 / Level 05 Balconies (Refer to Architectural Drawings to confirm all locations)
Supplier:	Nuralite
Substrate:	Concrete
Substrate adhesion:	Nuraflux QD
First layer:	Nuraply 3PV-SA
Second layer:	Nuraply 3PM
Colour:	Colour to be listed here (To be confirmed)

Nuratherm insulated roof system

4.2 NURATHERM INSULATED ROOF SYSTEM ON PLYWOOD

Location:	Internal Gutters (Refer to Architectural Drawings to confirm all locations)
Supplier:	Nuralite
Substrate:	Refer to the latest Architectural Drawings
Substrate adhesion:	Nuraflux QD
Vapour barrier:	Nuraply ALU
Insulation layer:	IKO Nuratherm ALU insulation board
Insulation thickness:	Refer to the latest Architectural Drawings
R-value:	Refer to the latest Architectural Drawings
Fixings:	IKO Fix fasteners - fixing pattern to suit wind loading (for fixing insulation board to substrate)
Base layer:	Nuraply 3PV-SA
Top layer:	Nuraply 3PM
Colour:	Colour to be listed here (To be confirmed)

4.3 NURATHERM INSULATED ROOF SYSTEM ON CONCRETE

Location:	Plant Area (Refer to Architectural Drawings to confirm all locations)
Supplier:	Nuralite
Substrate:	Concrete
Substrate adhesion:	Nuraflux QD
Vapour barrier:	Nuraply ALU
Insulation layer:	Tapered IKO Nuratherm insulation board
Insulation thickness:	Refer to the latest Architectural Drawings
R-value:	Refer to the latest Architectural Drawings
Fixings:	Refer to the latest Architectural Drawings
Base layer:	Nuraply 3PV-SA
Top layer:	Nuraply 3PM
Colour:	Colour to be listed here (To be confirmed)

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4.4 NURATHERM INSULATED ROOF SYSTEM ON METAL TRAY DECK

Location:	Roof Level (Refer to Architectural Drawings to confirm all locations)
Supplier:	Nuralite
Metal tray deck:	Nuralite LT7
Substrate adhesion:	Nuraflux QD
Vapour barrier:	Nuraply ALU
Insulation layer:	IKO Nuratherm ALU insulation board
Insulation thickness:	Refer to the latest Architectural Drawings
R-value:	Refer to the latest Architectural Drawings
Fixings:	IKO Fix fasteners - fixing pattern to suit wind loading (for fixing insulation board to substrate)
Base layer:	Nuraply 3PV-SA
Top layer:	Nuraply 3PM
Colour:	Colour to be listed here (To be confirmed)

Finishes

4.5 NURAPLY 3PM WALKWAY

Location:	Refer to the latest Architectural Drawings
Supplier:	Nuralite
Type:	Nuraply 3PM
Width:	1m wide
Colour:	Colour to be listed here (To be confirmed)

4.6 NURAPLY 3PM COATING

Location:	Refer to the latest Architectural Drawings
Supplier:	Nuralite
Type:	Nuraglaze
Number of coats:	2 thin coats

Accessories

4.7 NURAJACK & NURAPAD DECK SUPPORT SYSTEM

Refer to 4381NJ NURAJACK DECK SUPPORT SYSTEM for details.

Location:	Level 04 / Level 05 balconies (Refer to Architectural Drawings to confirm all locations)

4.8 NURAPLY ACCESSORIES

Location:	Refer to the latest Architectural Drawings
Supplier:	Nuralite
Type:	Refer to the latest Architectural Drawings

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4422NT NURAPLY TPO ROOF & DECK MEMBRANE

1 GENERAL

This section relates to Nuralite Group Limited Nuraply TPO Roof and Deck Membrane installed as a single ply external waterproof covering with associated components & accessories.
It includes;

- Nuratherm, insulated roof system with Nuraply TPO Fleece-Back, mechanically fixed or fully adhered, over Nuratherm insulation installed over concrete, plywood, strandboard (for roofs only), cross laminated timber or metal tray deck substrates.
- Nuraply TPO Smooth or Fleece-Back, mechanically fixed or fully adhered installed directly over concrete, plywood, strandboard (for roofs only), or cross laminated timber substrates.

1.1 RELATED WORK

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

TPO	Thermoplastic polyolefin

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B2/AS1	Durability provisions for building elements
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS 2122.1	Combustion characteristics of plastics - Determination of flame propagation - Surface ignition of vertically orientated specimens of cellular plastics
AS/NZS 2269.0	Plywood - Structural - Specifications
NZS 3604	Timber-framed buildings
ASTM D6878	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing

Codemark certificate CMNZ70166 version 0 - Nuraply TPO Waterproofing membrane

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Nuraply TPO Technical information

Manufacturer/supplier contact details

Company:	Nuralite Group Limited
Web:	www.nuralite.co.nz
Email:	info@nuralite.co.nz
Telephone:	09 579 2046 0800 NURALITE (0800 687 254)

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

20 years	For Nuraply TPO membrane
20 years	For Nuraply TPO fleece backed membrane

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)

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- Commence the warranty from the date of installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years	For Nuraply TPO membrane system installation

- Provide this warranty on the Nuraply TPO installer/applicator standard form.
- Commence the warranty from the date of installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any specified Nuraply system or associated products, components and accessories.

1.8 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be Nuralite Group Limited Authorised Membrane Applicators. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

Compliance Information

1.9 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicators' approval certificate from the distributor
- Distributor warranty
- Installers' / applicators' warranty
- Producer Statement - Construction from the applicator / installer
- Other information required by the BCA in the Building Consent Approval documents.

1.10 COMPLIANCE - CODEMARK CERTIFICATE

Nuraply TPO waterproofing membrane meets the requirements of the NZBC when used within the Conditions and Limitations of certificate CMNZ70166

Performance - general

1.11 PERFORMANCE

Accept responsibility for the weather-tight performance of the completed Nuraply TPO roofing system, including all penetrations through the roof decking and junctions with walls and parapets. In the event that there are issues relating to any aspect of this work, arrange for a meeting to resolve these issues. The following should attend:

- NuraplyTPO roofing applicator
- Nuralite representative
- Contractor
- Principal
- Principal's consultant(s)

1.12 AS APPROVED

"As approved" means that the materials are compatible with Nuraply TPO roofing and are part of the system required by the roofing supplier for each specific location.

2 PRODUCTS

Materials - Nuraply TPO single layer system

2.1 NURAPLY TPO SMOOTH BACK MEMBRANE

Nuraply TPO, a single ply, polyester fabric reinforced TPO fully bonded roofing and waterproofing membrane, to ASTM D6878.

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Components

2.2 PRIMER - SOLVENT BASED

50/50 mixture of solvent and Nuraply TPO Bonding Adhesive, a solvent based rubberised contact adhesive to bond the membrane.

2.3 NURAPLY TPO MEMBRANE BONDING ADHESIVE - SOLVENT BASED

Nuraply TPO Bonding Adhesive, a solvent based rubberised contact adhesive to bond the membrane.

2.4 NURAPLY TPO SOLVENT

Nuraply TPO Solvent is used to cut back Nuraply TPO Adhesive for use as a primer and for cleaning of equipment.

Accessories

2.5 NURAPLY TPO DETAIL MEMBRANE

Nuraply TPO Detail Membrane easily forms flashings around corners and penetrations. Specifically designed for use in areas that cannot be properly detailed with TPO field membrane.

2.6 NURAPLY TPO PRE-FORMED CORNERS

NuraplyTPO pre-formed non-reinforced internal and external corners and T joint patches, used for detailing internal/external and 3-way lap joints.

2.7 NURAPLY TPO SEALANT

Nuraply TPO Sealant is an approved sealant compatible with Nuraply TPO and other accessories.

2.8 NURAPLY TPO MEMBRANE CLEANER

Nuraply Membrane Cleaner is used for lap preparation and removing marks from the membrane surface.

2.9 NURAPLY TPO DRAIN

Nuraply TPO Drains are a selected range of clamp ring drains in varying size and configurations.

2.10 NURAPLY TPO BUTYL TAPE

Nuraply Butyl Tapeis 1mm thick, single sided butyl tape with a polypropylene fleece face. Designed to bond permanently to most surfaces including TPO.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to the general section 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 GENERALLY

Work and materials to Nuralite installation instructions and NZBC E2/AS1.

3.4 WEATHER

Lay Nuraply TPO membrane in fair weather, with ambient air temperature no less than 5°C.

3.5 INSTALLATION SEQUENCE

Install Nuraply TPO membrane systems in sections to produce a weather tight at the end of each work period. Ensure that moisture absorbent substrates and insulation panels are covered with Nuraply TPO membrane on the same day they are laid or ensure that the base is kept covered and dry until Nuraply TPO membrane is laid. Seal exposed Nuraply TPO membrane edges at the end of each work period to ensure complete system remains dry.

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Installation - preparation

3.6 PRELIMINARY WORK

Ensure that preliminary work, including formation of falls, flashing rebates, grooves, ducts, provision of battens and fillets and fixing of vents and outlets to levels, is complete and properly constructed to enable the system to work as intended. This work and the substrate to be smooth, clean, dry and stable.

3.7 ACCEPTANCE OF SUBSTRATE

Confirm that the substrate complies with Codemark CMNZ70166 for the relevant substrates and Nuralite documents, including sumps, outlets and projections, and ensure work is of the required standard.

Confirm the moisture content of substrates:

Concrete substrate:	Relative humidity of 75% maximum
Plywood/ timber substrate:	Moisture Content of 20% maximum

Confirm constructed falls:

Roofs and decks:	1:80 minimum
Gutters:	1:100 minimum

3.8 PLYWOOD SUBSTRATE

Ensure that sheets have been stretcher bond laid to falls, are rigid, with joints flush, edges arrised, upstands filleted, no lumps or hollows, smooth, clean, dry and free of debris. Plywood grain across the line of supports below.

Constructed falls on roofs and decks to be 1 in 80 minimum and 1 in 100 for gutters.

3.9 RIGID AIR BARRIER (RAB)

Fibre cement or Gypsum where they are placed behind cladding only.

Application - laying on plywood

3.10 POSITION MEMBRANE

Position Nuraply TPO membrane over acceptable substrate and fold membrane back to expose half of the underside.

3.11 APPLY ADHESIVE (ADHESIVE FIX)

Apply bonding adhesive to the exposed underside of the membrane and to the corresponding substrate. Apply using a plastic core, medium nap paint roller, at a coverage rate of 1.5m² per litre, per finished surface (includes coverage on both membrane and substrate).

3.12 INSTALL MEMBRANE SHEETS (ADHESIVE FIX)

Allow bonding adhesive to dry tacky and roll the coated Nuraply TPO membrane onto the coated substrate. Brush down the bonded section of Nuraply TPO membrane immediately with a soft bristle broom. Fold back the un-bonded half of the sheet and repeat procedure.

3.13 LAP JOINTS ADHERED MEMBRANE AND HOT-AIR WELD (ADHESIVE FIX)

Allow for overlapping membrane edges a minimum of 75mm to provide for a minimum 40mm hot-air weld.

3.14 HOT-AIR WELD

Hot-air weld the adjoining Nuraply TPO membrane sheets with an automatic hot-air welding machine or using hand welding techniques.

3.15 PENETRATIONS

Form and finish up-stands, down-turns, penetrations, sumps and vents to conform with Nuralite details.

3.16 PENETRATIONS AND JUNCTIONS

Check that adjoining walls and parapets are prepared ready for the installation of the Nuraply TPO membrane.



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Note: Ensure that no penetrations will occur until after the Nuraply TPO membrane has been laid.

Testing

3.17 TEST - FLOOD - COLD ROOFS

Flood test gutters and where practical other low pitch and horizontal areas with a minimum 50mm depth of water for 24 hours. Make good any lack of water tightness when the surface is completely dry. Repeat water test process after making any necessary repairs.

Finishing

3.18 FOOT TRAFFIC

Keep foot traffic to a minimum after laying the Nuraply TPO membrane. Lay protection at all traffic concentration points.

3.19 ACCESS BOARDS

Provide access boards for later operations and remove when no longer needed.

3.20 ACCEPTANCE

Arrange for an inspection of the completed work. Protect and maintain roofing until completion of the contract works.

3.21 SUBSEQUENT WORK

Make good any covering that has been cut or deformed by later work. Making good to take the form of inserting a new whole or part infill sheet to maintain the appearance of the covering as originally laid.

Completion

3.22 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.nuralite.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Nuraply TPO Membrane

4.1 NURAPLY TPO MEMBRANE - FULL ADHESIVE FIX

Location:	Level 01 Canopy / Internal Gutters (Refer to Architectural Drawings)
Substrate:	Refer to the latest Architectural Drawings
Supplier:	Nuralite
Membrane:	Nuraply TPO
Thickness:	1.5mm
Colour:	Grey (potential cover layer tbc)
Finish:	Smooth
Adhesive:	Nuraply TPO Membrane Bonding Adhesive

Materials - detail membrane

4.2 NURAPLY TPO DETAIL MEMBRANE

Location:	Level 01 Canopy / Internal Gutters (Refer to Architectural Drawings)
Supplier:	Nuralite
Description:	Nuraply TPO Detail membrane
Size:	1.5mm thick x 1524m long x 610mm wide
Colour:	Grey (potential cover layer tbc)

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Accessories

4.3 NURAPLY TPO MATERIAL ACCESSORIES

Location:	Level 01 Canopy / Internal Gutters (Refer to Architectural Drawings)
Supplier:	Nuralite
Type:	Refer to the latest Architectural Drawings

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4571 AUTOMATIC DOORS

1 GENERAL

This section relates to the supply and installation of automatic doors

1.1 RELATED WORK

Refer to glazing sections for glazing

To be Supplied under the STARKE - as part of the facade package

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

EMC	Electromagnetic compliant
I/O	Input/Output
LED	Light emitting diode
SLS	Serviceability limit state
ULS	Ultimate limit state
UPS	Uninterruptable power supply

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 1170.2: 2011	Structural design actions - Wind actions
NZS 3604	Timber-framed buildings
NZS 4223.3	Glazing in buildings - Human impact safety requirements
NZS 4239	Automatic sliding door assemblies

Warranties

1.4 WARRANTY

Provide warranty for:

5 years: For installation and performance of special doors

- Provide the warranty in the standard form in the general section 1237WA WARRANTY AGREEMENT.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.7 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not be limited to:

- Jointing details and method of fixing between individual elements and between this installation and adjacent work

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- Interaction between cladding and linings
- Flashing details
- Sealants and air seals

If requested provide the following additional information:

- Design calculations
- Producer Statement in the form PS1 Producer Statement Design
- Rebate sizes
- Dimensions of all typical elements and of any special sizes and shapes
- Provision for the exclusion and/or drainage of moisture
- Provision for adjustment of fixings to ensure true alignment
- Sealant types and full size sections of all sealants and backing rods
- Provision for thermal movement
- Provision for seismic movement and movement under wind loads
- Sequence of installation

If requested provide the following additional information:

- Information of Professional Indemnity Insurance held by the person providing the calculations and shop drawings.

1.8 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information.

Provide this information prior to practical completion.

Quality control and assurance

Performance - exterior doors and frames

2 PRODUCTS

Automatic doors

2.1 SLIDING DOOR OPERATORS

Self opening doors complying with NZS 4239 and EMC requirements, including a precision purpose-made motor gearbox combined with an electronic controller and based around features tailored exclusively for the commercial automatic door industry.

Automatic door operators

2.2 HEAVY DUTY OPERATOR

Automatic sliding door operator compliant with NZS 4239, standard for automatic door operators, be EMC compliant and conform to the requirements of the NZBC.

2.3 MECHANICAL

The operator shall be driven via a toothed timing belt from a 40 volt DC permanent magnet, variable speed, continuously rated motor. The driven system shall be nylon wheels with encapsulated bearings on a hard anodised aluminium track ensuring a smooth, quiet operation. Adjustable anti-rise wheels shall prevent the doors from de-railing. The operator shall be supplied in an extruded aluminium pelmet/cowl 215mm high x 170mm deep.

2.4 LOCKING

Locking shall be by way of an electric motor lock, factory fitted to the drive shaft of the motor. This ensures no alignment problems associate with mechanical type locks.

2.5 CONTROLS

The door functions shall be controlled by a five position membrane switch. The following modes shall be selectable:

Auto:	For normal use. The door operates in fully automatic mode for two-way traffic.
Half open:	For adverse climate conditions, door operates as in auto mode but only opens halfway.
Open:	The door will remain fully open.

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Lock:	The door closes and the motor lock engages. It ignores all inputs except emergency exit, security and fire open signals.
Exit:	The door closes and the motor lock engages. The door will open for traffic leaving the building only.

2.6 ACTIVATION

By microwave sensors, one on either side of the door.

By dual safety light cells fitted at 100mm and 600mm above finished floor level.
By backlit emergency egress button.

2.7 FUNCTIONS

All of the following functions shall be independently adjustable:

- High speed opening
- Close brake speed
- Dwell time
- High speed closing
- Open brake speed
- Braking force

2.8 FAILSAFE AND BATTERY

To be a fully monitored UPS system monitoring both battery and door operation. In case of power failure in auto mode the battery shall continue to provide full operation of the door for 200 complete open and close cycles. When the battery is too low to run the operator the doors will failsafe open. In case of power failure in lock mode the battery shall retain full locking for 8 hours.

2.9 SECURITY INTERFACE SPECIFICATION

The operator to be fitted with an IO Panel. This interface to allow easy integration with any building management systems.

The interface shall have clean contact relay outputs for the following functions. These outputs are selectable by jumper to be either normally open or normally closed.
Activation of the relay is accompanied by an LED indication for easy fault diagnosis for:

- Door closed
- Safety light cells blocked
- Door locked
- Door in lock mode
- Door in auto mode
- Door forced
- Mains power failure
- Door in controlled mode
- Battery low
- Door in hold open mode

The interface shall have inputs for the following control functions:

- Door to auto mode
- Open door (latching this holds door open)
- Fire Open
- Door to exit mode
- Door to lock mode
- Fire Close

Automatic door accessories

2.10 MICROWAVE SENSOR

Maximum mounting height 3 metres. Maximum sensing field at typical mounting height of 2.2 metres is 4 metres wide x 2 metres deep.

2.11 PRESENCE SCAN SENSOR

Combined sensor for the opening and safety of automatic doors for presence sensing to the door jambs and active infrared to the approach area.

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2.12 DUAL SAFETY BEAMS

Active infrared beams for doorway protection. Typically mounted at 60mm and 600mm above finished floor. Immunity level 75000 lux to sunlight.

2.13 KEY ENTRY SWITCH

To enable first person entry to the building when the door is equipped with electric locking.

2.14 ROTARY MODE SWITCH

Five position mode switch incorporating battery level indicator, with modes Auto, Half open, Lock, Exit and Hold open.

2.15 MEMBRANE MODE SWITCH

Keyless security with all the features of the rotary switch by a simple programming sequence plus Egress exit button.

2.16 KEYED MODE SWITCH

Four position switch for high security to prevent tampering by unauthorised personnel. Four positions are Auto, Lock, Exit and Hold open.

2.17 EMERGENCY EGRESS BUTTON

Backlit egress button for after hours and emergency escape from the building when the operator is equipped with electric locking.

2.18 TOUCHLESS SWITCH

Microwave proximity sensing switch with a range of 50-100mm for hygienic opening of doors.

2.19 KEYPAD

Digital keypad fitted to operators with electric locking to create a stand alone security entry system or integrated into a building management system.

2.20 ELECTRIC LOCKING - MOTOR LOCK

Electric motor lock factory fitted to the drive shaft of the motor to eliminate alignment problems.

2.21 ELECTRIC LOCKING - MAGNETIC SHEAR CLAMP

12V dc magnet.

2.22 SECURITY INTERFACE

Comprehensive security interface to allow connection of the door to the building management system complete with inputs and outputs to suit requirements.

2.23 GLASS

To NZS 4223.3. Refer to glazing sections for glass type and thickness.

Components

2.24 FLASHINGS GENERALLY

Ensure that materials used for head, jamb and sill flashings are compatible with the window frame materials and fixings and cladding materials.

2.25 METAL FASTENINGS

Stainless steel or non-corrodible metal.

2.26 SCREWS

Stainless steel, length sufficient to penetrate into the background support up to the shank. Screws for fixing hinges, hardware or furniture to match the item being attached and of non-corrodible metal.

3 EXECUTION

Conditions

3.1 DO NOT DELIVER

Do not deliver any elements which cannot be unloaded immediately into suitable storage conditions.

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3.2 HANDLE

Handle, unload and store elements without distortion and avoiding pre-finished surfaces rubbing together, and contact with mud, moisture and other damaging materials.

3.3 PROTECT

Protect all elements against damage to arrises and glazing beads. Store frames and doors flat and away from moisture or direct sunlight.

3.4 CHECK ALL OPENINGS

Check all openings on site for size and standard of execution before installing door frames.

3.5 CONFIRM PREPARATION OF EXTERIOR WALL OPENINGS

Confirm that exterior wall openings have been prepared ready for the installation of door frames. Do not proceed with the door installation until required preparatory work has been completed.

Required preparatory work includes the following:

- wall underlay/building wrap to openings finished and dressed off ready for the installation of window and door frames to NZBC E2/AS1, 9.1.4 Wall underlays to wall openings.
- claddings neatly finished off to all sides of openings
- Side and over lights not part of doors
- installation of flashings (those which are required to be installed prior to frames).

Installation/application

3.6 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.7 PROPRIETARY ELEMENTS

Fix in accordance with the door manufacturer's requirements.

3.8 REMOVE DOORS

Remove doors from the frames if necessary to protect them, or for re-finishing, store safely and near completion refit them, all without any damage.

3.9 MANIFESTATIONS

To NZS 4223.3, 2.2 Manifestation (making glass visible).

3.10 CHECK

Check and adjust operation of all doors, hardware and furniture.

Completion & Commissioning

3.11 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements

3.12 COMPLETION - TESTS & CERTIFICATION

Refer to 1270 CONSTRUCTION for general test and certification requirements at completion.

4 SELECTIONS

Performance

4.1 DESIGN PARAMETERS - SPECIFIC DESIGN

The design wind pressures are to AS/NZS 1170.2.

SLS	Refer to Structural Engineering **- Starke Facades have required information**
ULS	Refer to Structural Engineering **- Starke Facades have required information**

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Automatic doors

4.2 AUTOMATIC DOOR

Location:	Ground Level Door Instances: **DG-06, DG-12, DG-25**
Type:	Door Type **ED09**: Bi-Parting - Frameless glass leaf Door Type **ED08**: Single Slide - Frameless glass leaf
Accessories:	Refer to services specification
Material/finish:	Glass

Door operators

4.3 SLIDING DOOR OPERATORS

Housing size:	Heavy duty
Motor option:	Bi-parting and Single Slide
Door type:	Frameless glass leaf
Pelmet:	Custom pelmet. Refer to architectural documentation and will review Shop Drawings

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4611 GLAZING EXTERIOR

1 GENERAL

- **All external glazing is under the Starke Commercial supply.**
- **Refer to their technical documentation and shop drawings**

- **Refer to Facade Engineering Review**
- **Refer to H1 Report and requirements**

Documents

1.1 MANUFACTURER DOCUMENTS

Manufacturer's and supplier documents relating to work in this section are:

Copies of the above literature are available at:

Company:	Starke Commercial
Web:	www.starke.co.nz
Email:	matthew@starke.co.nz
Telephone:	09 279 8617

1.2 FACADE ENGINEER

Company:	JFS Engineers
Web:	www.jfsengineers.co.nz
Email:	robert@jfsengineers.co.nz
Telephone:	+64 22 0997674

1.3 H1 REPORT

Company:	Powell Fenwick
Web:	www.pfc.co.nz
Email:	
Telephone:	(03) 366-1777

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4612 GLAZING INTERIOR

1 GENERAL

This section relates to the supply and fixing of glass products for interior spaces including:

- partition glazing, framed and frameless
- doors, framed and frameless
- mirrors and mirror frames

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

PVB	Polyvinyl Butyral
CIP	Cast in place

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC F4/AS1	Safety from falling
AS/NZS 2208	Safety glazing materials in buildings
NZS 4223.1	Glazing in buildings - Glass selection and glazing
NZS 4223.3	Glazing in buildings - Human impact safety requirements
BRANZ BU 636	Protecting Glass From Damage
BPS	Building Product Specifications

Warranties

1.3 WARRANTY - MANUFACTURER/SUPPLIER

Warrant glass under normal environmental and use conditions against failure of materials.

10 years:	for insulating glass units
10 years:	for laminated glass
10 years:	for toughened glass

Refer to the general section for the required form of 1237WA WARRANTY AGREEMENT and details of when completed warranty must be submitted.

2 PRODUCTS

Materials

2.1 TOUGHENED GLASS

Grade A Safety Glass to AS/NZS 2208.

Materials, mirrors

2.2 SAFETY MIRROR GLASS

4mm and 6mm annealed float glass mirror vinyl back safety glazing material to AS/NZS 2208.

Components, general

2.3 JOINTING, PUTTY AND SEALING MATERIALS

Ensure jointing, putty and sealing materials are compatible with glass substrates. Confirm compatibility with laminated glass and coatings.

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Components, aluminium glazing

2.4 GLAZING TAPE AND GASKETS

Single/double sided pressure sensitive self-adhesive low/medium/high density foam tapes/butyl tapes selected to suit the glazing detail to window manufacturers' requirements.

2.5 SETTING BLOCKS

Santoprene/Neoprene, 80-90 Shore A hardness, set at quarter points or to detail, to support the weight of glass panes.

Components, wall mounted glass (mirrors and splashbacks)

2.6 MIRROR DE-MISTER

Refer to appropriate electrical section(s) for type. - **Only to the End of Trip Spaces on Ground Floor Level**

3 EXECUTION

Conditions

3.1 GENERAL REQUIREMENTS

To NZS 4223.1 and NZS 4223.3 as modified by BPS paragraph 4.4.1.4.

3.2 DELIVERY

Keep glass dry and clean during delivery and bring on to site when ready to glaze directly into place. Comply also with the storage requirements set out in BRANZ BU 636.

3.3 GLASS CONDITION

All glass to have undamaged edges and surfaces.

3.4 GLASS THICKNESS

If not specifically stated in the glazing schedule determine the minimum thickness of glass for each sheet as required by NZS 4223.1 and NZS 4223.3.

Determine the final glass thickness based on whether wind loading or human impact considerations govern.

3.5 REBATE DIMENSIONS

Provide rebates for glazing to the widths and depths necessary for each situation including minimum glass edge cover to NZS 4223.1, Section 4 Glazing.

Conditions - human impact safety requirements

3.6 SAFETY GLAZING, GENERAL REQUIREMENTS

Glazing of doors, side panels, low level and window seat glazing, bathrooms, stairwell landings and similar locations, to NZS 4223.3 for thickness and maximum areas of safety glass.

3.7 SAFETY GLAZING MATERIAL

Use only safety glazing materials defined in NZS 4223.3 as modified by BPS paragraph 4.4.1.4, that also comply with the relevant requirements of AS/NZS 2208. Ensure material is permanently marked and if cut by the distributor or installer mark each piece to NZS 4223.3, 2.8 Identification.

3.8 CONTAINMENT

Edge cover to comply with NZS 4223.1, Section 4 Glazing, table 5. Otherwise to NZS 4223.3, 2.3 Edge cover.

Assembly

3.9 WORKING OF GLASS

All working of glass as required in NZS 4223.1.

3.10 EDGE WORK AND BEVELLING

Edgework other than a clean cut. Refer to SELECTIONS/drawings for type.



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3.11 SURFACE TREATMENT
Refer to SELECTIONS/drawings for finish.

3.12 SURFACE CUTTING
Refer to SELECTIONS/drawings for finish.

Application aluminium

3.13 INSTALL GLASS TO ALUMINIUM FRAMES
Install glass to NZS 4223.1.

- Bead glaze to Section 4 Glazing.
- Channel glaze to Section 4 Glazing, and Section 5 for Framed, Unframed, and Partly Framed Glass Assemblies.

3.14 INSTALL SAFETY GLASS
To NZS 4223.3.

Application - wall mounted glass (mirrors and splashbacks)

3.15 WALL MOUNTED GLASS, ADHESIVE FIXED
For mirrors and splashbacks, fix with adhesive mirror-mastic and double-sided adhesive tape. Adhesive area 0.2 m2 per 1 m2 of glass to NZS 4223.3.

Finishing

3.16 SAFETY
Indicate the presence of transparent glass for the remainder of the construction period, with whiting, tape or signs compatible with the glass type. Indicators other than whiting must not be applied to the glass surface.

3.17 MANIFESTATIONS
To NZS 4223.3, 2.2 Manifestation (making glass visible).

Completion

3.18 TRADE CLEAN
Clean off or remove safety indicators at completion of the building.

3.19 REPLACE
Replace damaged, cracked or marked glass.

3.20 LEAVE
Leave work to the standard required by following procedures.

3.21 REMOVE
Remove debris, unused materials and elements from the site.

4 SELECTIONS

Glass by type

4.1 TOUGHENED GLASS

Location:	Refer to drawings
Brand/type:	Toughened Safety Glass, clear coated glass to AS/NZS 2208.
Thickness:	Thickness range is 4 to 19mm (if product thickness available). Flat Grind is minimum for 12mm and above.

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Mirrors

4.2 MIRROR

Location:	Refer to drawings
Brand/type:	4mm & 6mm annealed float glass mirror vinyl back safety glazing material to AS/NZS 2208
Dimensions:	4mm & 6mm annealed float glass mirror vinyl back safety glazing material to AS/NZS 2208
Fixing method:	Adhesive
Edgework:	Polish all edges

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4711OR OUTRIGHT INSULATION

1 GENERAL

This section relates to the supply and installation of Outright Continuous Insulation, ROCKWOOL stone wool continuous thermal insulation for pitched warm roofs, exterior wall applications, behind external wall linings & basement/soffit applications and acoustic insulation for internal walls / soffits.

It includes:

- ROCKWOOL insulation slabs
- Components and accessories to complete the installation.

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

BPS	Building Product Specifications
NZBC H1/AS1	Energy efficiency for all housing, and buildings up to 300 m2
NZBC H1/AS2	Energy efficiency for buildings greater than 300 m2
AS 1530.1	Methods for fire tests on building materials, components and structures - Combustibility test for materials
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential building

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:
ROCKWOOL Asia Product Literature on Outright Continuous Insulation website

Manufacturer/supplier contact details

Company:	Outright Continuous Insulation
Web:	www.outright.co.nz
Email:	info@outright.co.nz
Telephone:	09 579 2046

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

20 years	For ROCKWOOL Insulation

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS GENERAL

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any of the Outright Continuous Insulation specified systems, components and associated products listed in this section.

Performance

1.7 EXTERNAL FIRE SPREAD - NON-COMBUSTIBLE

ROCKWOOL stone wool insulation has been classified as non-combustible, tested to AS 1530.1.

1.8 SURFACE FIRE PROPERTIES FOR LININGS

ROCKWOOL stone wool insulation is tested to EN 13501-1 and achieves Group Number 1 to BPS, Table 8.5.3.1A: Group Numbers based on classifications from BS EN 13501-1:2018.

2 PRODUCTS

Materials

2.1 ROCKWOOL THERMALROCK® S - INSULATION BOARD FOR EXTERNAL & INTERNAL WALLS / FLOORS AND INTERTENANCY WALLS

Rockwool Thermalrock® S, non-combustible stone wool insulation slab, available in 1200mm x 600mm slabs in a range of thicknesses, densities, and R-values. Refer to SELECTIONS.

2.2 ROCKWOOL® COOL N COMFORT™ - INSULATION BOARD FOR PITCHED ROOFS

Rockwool Cool 'n' Comfort™, non-combustible stone wool insulation slab, available in 600mm x 1200mm slabs in a range of thicknesses, densities, and R-values. Refer to SELECTIONS.

2.3 ROCKWOOL® SAFE N SILENT™ PRO - INSULATION BOARD FOR INTERNAL WALLS

Rockwool Safe N Silent™ Pro, non-combustible stone wool insulation slab, available in 1200mm x 600mm slabs in a range thicknesses, densities, NRC and R-values. Available plain (unfaced), aluminium foil faced and black mat tissue faced on one or both sides. Refer to SELECTIONS.

2.4 ROCKWOOL® COMFORT LINER - INSULATION BOARD FOR BASEMENT/SOFFITS

Rockwool ® Comfort Liner, non-combustible stone wool insulation slab, available in 1200mm x 600mm slabs in a range of thicknesses, densities, NRC and R-values. Available plain (unfaced), aluminium foil faced and black mat tissue faced on one or both sides. Refer to SELECTIONS.

2.5 ROCKWOOL ® HARDROCK & ROOFROCK - HIGH COMPRESSION INSULATION BOARD FOR ROOFS

Rockwool® Hardrock & Roofrock, high density, non-combustible stone wool insulation slab, available in 1200mm x 600mm slabs in a range of thicknesses, densities, NRC and R-values. Available plain (unfaced) and aluminium foil faced on one or both sides. Refer to SELECTIONS.

Components

2.6 FASTENERS - GENERALLY

Fasteners to suit the particular application in accordance with Outright installation instructions. Refer to SELECTIONS.

Accessories

2.7 OUTFIX THERMAL BRICK TIES

Hot dip galvanized and 304 Stainless steel slotted 50mm high, 1.367mm BMT L-plate with 4.76mm∅ wire V-ties, available for a range of cavity depths and insulation thickness. Refer to SELECTIONS.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

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3.2 ROUTINE MATTERS

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Installation - generally

3.4 INSTALL INSULATION - GENERAL

Lay, install, fit and fix insulation without gaps, tucks, folds and over compaction to NZBC H1/AS1 or NZBC H1/AS2 and insulation manufacturer's requirements. For all housing and buildings up to 300m install in accordance to NZS 4246 sections 5 Walls, 6 Ceilings & Roofs, 7 Underfloor - Suspended Framed Floors and 10 Concrete Slab-on-Ground Insulation, for residential light timber or steel framed buildings. Do not cover vents. Lift up electrical wires, lighting transformers/controllers and lay the insulation underneath.

3.5 RECESSED LIGHT FITTINGS

Maintain clearances in accordance with AS/NZS 3000 and to manufacturers requirements.

3.6 PIPES AND PLUMBING

Cut holes in the Rockwool board with a sharp knife and notch around obstacles such as pipes and plumbing.

3.7 ELECTRICAL CABLES

Fit Rockwool board behind or in front of electrical wiring and plumbing. Ensure there are no gaps or undesirable compression at edges.
Use extreme caution when working around electrical cables.

3.8 CHECK FOILS

Ensure foils are dry, clean, bright, undamaged and free of debris before being covered.

3.9 CHECK WALL AND ROOF UNDERLAYS

Ensure these are dry, clean, undamaged and free of debris before being covered.

3.10 CHECK VAPOUR BARRIERS

Ensure this layer forms one homogeneous sheet vapour barrier and remain as such throughout the ensuing construction process.

3.11 INSULATION BOARD - CUTTING

Cut Rockwool Board by using a fine-toothed saw or by scoring with a sharp knife using a straight edge. Ensure cut is clean and all the way through. Do not rip the Rockwool Stone Wool apart as this can reduce the edge area and the thermal efficiency of the insulation.

Installation - Rockwool Thermalrock® S, with weatherboard cladding, fibre cement sheet or similar lightweight cladding styles

3.12 INSTALL INSULATION - STEEL OR TIMBER FRAMED WALL, EXTERNAL SIDE OF FRAME

Install Rockwool Thermalrock® S board to steel or timber framed walls, or engineered timber (CLT) to Outright installation instructions and as follows:

- Stud spacing to be maximum of 600mm centres.
- After structural ply, rigid air barrier or wall underlay has been installed, fix Rockwool Thermalrock® S board to external face of frame with vertical joints to coincide with studs.
- Slot slabs together to provide a continuous insulation layer and air barrier.
- Install a minimum of three insulation anchor fixings per slab to hold slabs in place temporarily where necessary.

3.13 INSTALL INSULATION - CONCRETE OR CONCRETE BLOCK WALL, EXTERNAL SIDE

Install Rockwool Thermalrock® S board to concrete or concrete block walls to Outright installation instructions and as follows:

- After wall underlay has been installed fix Rockwool Thermalrock® S board to external face of wall.
- Slot boards together to provide a continuous insulation layer and air barrier.

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- Install a minimum of three insulation anchor fixings per slab to hold slabs in place where necessary.

Installation - Rockwool Thermalrock® S, with brick veneer or stone cladding

3.14 INSTALL INSULATION - BRICK / STONE VENEER OVER STEEL OR TIMBER FRAMING, EXTERNAL SIDE OF FRAME

Install Rockwool Thermalrock® S board to brick veneer or stone cladding wall to Outright installation instructions and as follows:

- Stud spacing to be maximum of 600mm centres.
- After structural ply, rigid air barrier or wall underlay has been installed, fix Outfix thermal tie L plates through to structure. Cut slit or fix Rockwool Thermalrock® S slab around the thermal tie to external face with vertical joints to coincide with studs.
- Slot slabs together to provide a continuous insulation layer and air barrier.
- Install a minimum of three insulation anchors fixing per slab to hold slabs in place where necessary.

3.15 INSTALL INSULATION - BRICK / STONE VENEER OVER CONCRETE OR CONCRETE BLOCK, EXTERNAL SIDE

Install Rockwool Thermalrock® S board to concrete or concrete block walls to Outright installation instructions and as follows:

- After wall underlay has been installed, fix Outfix thermal tie L plate through to structure. Cut slit or fix Rockwool Thermalrock® S board around thermal tie to external face of wall.
- Slot boards together to provide a continuous insulation layer and air barrier.
- Install one insulation anchor fixing per slab to hold slabs in place temporarily where necessary.

Installation - Rockwool Cool 'n' Comfort™, warm pitched roof

3.16 INSTALL INSULATION - PITCHED ROOF, EXTERNAL SIDE OF ROOF STRUCTURE (RAFTERS)

Install Rockwool Cool 'n' Comfort™ insulation to pitched roof to Outright installation instructions and as follows:

- Rafter spacing to be maximum of 600mm centres.
- After roof metal underlay or plywood diaphragm has been installed, lay Rockwool Cool 'n' Comfort™ insulation slab around post/rail roofing system.
- Slot boards together to provide a continuous insulation layer and air barrier.
- Install one insulation anchor fixing per slab to hold slabs in place temporarily where required.

Installation - Rockwool Comfort Liner or Thermalrock S, basement / soffit applications

3.17 INSTALL INSULATION - BASEMENT/SOFFIT APPLICATION

Install Rockwool Comfort Liner or Thermalrock S insulation slab to steel flooring or concrete floor to Outright installation instructions and as follows:

- Ensure area to fit to is sound and clean.
- Position boards to suit the space provided either between structural timbers or in staggered or brick bond pattern to best suit the area being covered. Install Rockwool Comfort Liner or Thermalrock S insulation slab to basement roof/soffit area to fully cover.
- Slot slabs together to provide a continuous insulation layer and air barrier.
- Install a minimum of five fixings per slab to hold boards in place. Fixings can be manual (drill and screw) or automatic (gas actuator) types, depending on the space and the substrate being fixed to.

Installation - Rockwool Safe 'n' Silent™ Pro, internal wall applications

3.18 INSTALL INSULATION - INTERNAL WALL APPLICATION

Install Rockwool Safe 'n' Silent™ Pro insulation slab to steel / timber framed internal walls or over concrete / concrete blockwork internal walls with timber or steel battens to Outright installation instructions and as follows:

- Ensure area to fit to is sound and clean.
- For timber or steel partitions, install Rockwool Safe 'n' Silent™ Pro insulation slab once wall linings are fixed to one side.

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Friction fit Rockwool Safe 'n' Silent™ Pro insulation slabs in the wall cavity to completely fill the wall. Slightly oversize to retain friction fit. Ensure insulation is fitted at its nominal thickness. Do not fold or tuck the insulation. Keep clean and undamaged until closed in.

Installation – Rockwool Hardrock & Roofrock for flat and pitched roofing applications

3.19 INSTALL INSULATION - ROOFING APPLICATIONS

Install Rockwool Hardrock & Roofrock slabs over steel deck in brick bond pattern with joins offset to provide continuous insulation layer. Mechanically fix insulation to substrate using 2 fasteners per board, inset 300mm from board edges. For roof corner regions, increase number of fixings to 4 per board, offset 300mm from board short edge and 150mm from board long edge.

Completion

3.20 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.outright.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials

4.1 OUTRIGHT CONTINUOUS INSULATION - ROCKWOOL THERMALROCK® S

Location:	**Ground Level - 120min Fire Rated Wall** **Level 1 - underneath North side Curtain Walling** **Roof Level to walls adjoining the warm-roofs**
Manufacturer:	Rockwool Malaysia Sdn Bhd
Supplier:	Outright Continuous Insulation
Brand/type:	ROCKWOOLThermalrock® S120
Board size:	1200mm x 600mm
Construction type:	Steel deck on concrete
Thickness:	100mm
Density:	120kg/m3
R-value:	R3.05
Facings:	Plain

4.2 OUTRIGHT CONTINUOUS INSULATION - ROCKWOOL COMFORT LINER

Over Intertenancy Wall between PIR Insulation	**Ground Floor Soffit external** **Basement Soffit under Building 9**
Manufacturer:	Rockwool Malaysia Sdn Bhd
Supplier:	Outright Continuous Insulation
Brand/type:	ROCKWOOL Comfort Liner SSL950
Board size:	1200mm x 600mm
Construction type:	Concrete
Thickness:	100mm
Density:	80kg/m³
R-value:	R3.05
Facings:	White tissue faced

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Accessories

4.3 OUTRIGHT CONTINUOUS INSULATION - OUTFIX THERMAL BRICK TIES

Location:	**Ground Floor Soffit**
Manufacturer:	Iccons
Supplier:	Outright Continuous Insulation
Brand/type:	Iccons Insulation Fastener GTIFB100 and pin - white finish to match tissue face
Construction type:	Concrete
Insulation thickness:	100mm
Method:	Gas actuated pin shot fired into concrete soffit. Minimum 5 fixings per Rockwool 1200 x 600mm slab



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4721P PINK® BATTS® ACOUSTIC INSULATION

1 GENERAL

This section relates to materials installed, laid, hung or fitted as acoustic insulation to the building fabric.
for Contractor consideration

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

IIC	Impact Insulation Class
STC	Sound Transmission Class

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC G6/VM1	Airborne and impact sound
NZS/AS 1530.1	Methods for fire tests on building materials, components and structures - Combustibility test for materials
AS/NZS 3000	Electrical installations (Known as the Australian/ New Zealand Wiring Rules)
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential buildings

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents related to this section are:

Comfortech Pink® Batts® Silencer® Acoustic Installation Instructions
Comfortech Pink® Batts® Silencer® Wall & Midfloor Data Sheet
Comfortech Pink® Batts® Insulation - Safety Data Sheet
Comfortech Pink® Batts® Insulation Product Warranty

Manufacturer/supplier contact details

Company:	Tasman Insulation NZ Ltd
Trading as:	Comfortech Building Performance Solutions®
Web:	www.pinkbatts.co.nz
Telephone:	0800 746 522

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

50 years	For Pink® Batts® insulation products

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 year	For installation

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)

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- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.8 SOUND CONTROL SITE TEST

Site test each sound rated element to NZBC G6/VM1 for compliance with specified sound transmission loss, using a nominated acoustic consultant. Rectify any element that does not meet the specified STC/IIC figure.

Performance

1.9 FIRE PROPERTIES

Pink® Batts® insulation products are classified as non-combustible when tested to NZS/AS 1530.1 and achieve a Group Number of 1-S.

2 PRODUCTS

Materials

2.1 PINK® BATTS® SILENCER® INSULATION

Bio-soluble fibrous glass wool slab manufactured from minimum 80% recycled window glass and bonded with thermosetting resin. Coloured Grey for identification. Available in a range of R-values, sizes and thicknesses. Refer to SELECTIONS.

Components

2.2 PLASTIC STRAPPING TAPES

Proprietary plastic strapping tape.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Installation - general

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

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3.5 INSTALL INSULATION - GENERALLY

Install insulation in a dry protected environment. Lay, fit and fix insulation without gaps, tucks, folds and over compaction to Pink® Batts® installation instructions. Allow insulation to re-loft/relax prior to installation. Do not cover vents. Lift up electrical wires, lighting transformers/controllers and lay the insulation underneath. Use insulation offcuts to fill small gaps between framing.

3.6 INSULATION CLEARANCES

Provide insulation clearances to NZS 4246 and for recessed luminaires AS/NZS 3000, 4.5.3.2. Where allowed by these standards provide insulation clearances to product manufacturer's stated clearances. Secure insulation in place so clearances are maintained and use guards/barriers , if required, where insulation is not secured.

3.7 LAY PLASTIC STRAPPING TAPE

Lay at right angles across the framing at a minimum of 300mm centres, staple tape to each framing member with stainless steel staples.

3.8 PREPARE INSULATION

Before installation, gently agitate the insulation by shaking or bouncing to assist recovery to the nominal thickness stated on the product label. Maintain the insulation in a dry state.

3.9 CUTTING INSULATION TO SIZE

Tear insulation by hand or cut with an insulation saw/knife, sharp scissors, or with sharp wide-blade knife. Cut slightly oversized for snug friction fit.

3.10 INSTALL PINK® BATTS® SILENCER® WALL INSULATION

Friction fit insulation slabs between framing when lining on one side is installed. Maintain full thickness of the insulating slabs over the whole of the installation.

Completion

3.11 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.pinkbatts.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials

4.1 WALL INSULATION

Location:	Refer to drawings - additional acoustic insulation to bathrooms, meeting rooms, end of trip facilities and between core spaces and tenancies
Brand/Type:	Pink Batts BIB R1.2 50mm (12.0kg/m3) Pink Batts BIB R1.8 75mm (12.0kg/m3) Pink Batts BIB R2.2 90mm (11.0kg/m3)

4.2 CEILING INSULATION

Location:	Refer to drawings - additional acoustic insulation to bathrooms, meeting rooms, end of trip facilities
Brand/Type:	Pink Batts

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4811S SIKA SEALANTS

1 GENERAL

We reference SIKA, although alternatives are allowed

Preferred supplier of Sealants
jason.coper@konnectshop.com
027 452 9513
https://www.konnectfasteningsystems.co.nz/

This section relates to the selection of Sika sealants/adhesives and appropriate application methods for sealants nominated in other work sections.

It includes:

- Sika sealants
- Sika fire rated sealants
- Sika adhesives
- All required associated primers, cleaners and accessories necessary for installation.

1.1 ABBREVIATIONS

The following abbreviations and terms are used throughout this part of the specification:

VOC	Volatile Organic Compound

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS 1530.4:2005	Methods for fire tests on building materials, components & structures. Part 4: Fire resistance test of elements of construction
ASTM C719	Standard test method for adhesion and cohesion of elastomeric joint sealants under cyclic movement
EN 1366.4	Fire resistance tests for service installations. Linear joint seals.
ISO11600	Building construction - Jointing products - Classification and requirements for sealants

1.3 MANUFACTURER'S DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Relevant Sika Product	Technical Data Sheets
Relevant Sika Product	Safety Data Sheets
CETEC Test Certificates	For VOC content of selected Sika sealants
CSIRO Test certificates	For fire rating of various Sika sealants
EXOVA Test certificates	For fire rating of various Sika sealants
BRANZ Appraisal 311 [2024]	Sikaflex® MS (Building Sealant)
BRANZ Appraisal 613 [2024]	Sikaflex® AT - Facade Sealant

Manufacturer/supplier contact details:

Company:	Sika (NZ) Ltd
Web:	nzl.sika.com
Email:	info@nz.sika.com

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Telephone: 0800 SIKA NZ, 0800 745 269

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years: For Sika sealants and adhesives

- Provide this warranty on the Sika standard form. (For materials only. Warranty excludes application)
- Commence the warranty from the date of practical completion of the contract works.
- **Sika** (NZ) Ltd will warrant that Sika sealant products will perform in accordance with the information stated in **Sika** (NZ) Ltd current Technical Data Sheets.
- Refer to **Sika** (NZ) Ltd for further information on warranty.

Refer to the general section 1237 WARRANTIES for additional requirements

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years: For installation

- Provide the warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

Sealant work, including preparation, to be carried out by competent and experienced sealant applicators.

1.7 SEALANT SELECTION

Refer to the **Sika** (NZ) Ltd current Technical Data Sheet before commencing sealant installation. Ensure that the correct sealant has been selected for the intended application and substrates. Check that the joint design allows for movement and or substrate thermal expansion and contraction, and is within the sealants range of service.

2 PRODUCTS

Joint Substrate Primers & Accessories

2.1 NON-POROUS SUBSTRATE CLEANER - TO IMPROVE SEALANT ADHESION

Sika Aktivator-205, a transparent, alcohol based, one component cleaner with adhesion promoters for cleaning and activating non-porous substrates prior to the application of Sika sealants. For use with Sika products only.

2.2 POROUS SUBSTRATE PRIMER - TO IMPROVE SEALANT ADHESION

Sika Primer-3N, transparent solvent based, one component, reactive epoxy resin primer for use on a wide range of porous substrates. For use with Sika products only.

2.3 BACKING ROD - TO CONTROL DEPTH OF JOINT SEALANT

Sika PEF Backing Rod is a closed cell polyethene foam backing rod used to fill the base of a joint to control depth of applied sealant. Available in a range of diameters.

2.4 BOND BREAKER TAPE

A pressure sensitive self-adhesive polyethylene or PVC bond breaker tape. Masking tape is not permitted.

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Facade sealants for concrete / masonry brickwork - non-fire rated

2.5 FACADE SEALANT - HIGHEST MOVEMENT, POLYURETHANE, PAINTABLE

SikaHyflex®-250 Facade, is a durable, low VOC, one component, solvent free, moisture curing elastic polyurethane sealant with a joint movement capacity of +100/-50% and elongation at break of 800%. Conforms to: ISO 11600 Type F, Class 25LM.

Can be over-painted with a range of paints and coatings.

2.6 FACADE SEALANT - HIGH MOVEMENT, SILICONE, NON-PAINTABLE

Sikasil WS 605 S is a durable, low VOC, one component, neutral curing silicone sealant with a joint movement capacity of +/-50%. Suitable waterproofing and sealing application where durability in severe conditions is required. Conforms to ISO 11600 Type F & G, class 25LM.

2.7 FACADE SEALANT - MEDIUM MOVEMENT, HYBRID, PAINTABLE

Sikaflex® AT-Facade, is a one component hybrid (silane terminated polymers), low VOC, moisture curing sealant with good weathering and a joint movement capacity +/-25%. Conforms to ISO 11600 Type F, Class 25LM and has a BRANZ Appraisal 613.

Can be over-painted with a range of paints and coatings.

2.8 FACADE SEALANT / AIR SEAL - MEDIUM MOVEMENT, MS, PAINTABLE

Sikaflex® MS is a one component MS (silane modified polymer), low VOC, moisture curing sealant with good weathering and a joint movement capacity +/-25%. Conforms to ISO 11600 Type F, Class 25LM and has a BRANZ Appraisal 311. Complies with NZBC E2/AS1, 9.1.5 Air seals, for use as an air seal around exterior windows and doors.

Can be over-painted with a range of paints and coatings.

Facade sealants for concrete / masonry brickwork - fire rated

2.9 FACADE SEALANT - PU, FOR FIRE RATED JOINTS, UP TO 4 HOURS

Sikaflex®-400 Fire is a one component, fire rated, polyurethane, moisture curing, paintable, elastic joint sealant with a movement capacity of +/-35%. For internal and external applications. Up to 4 hour fire resistance (depending on tested joint configuration) in accordance with AS 1530.4 and EN1366.4.

Facade sealants for aluminium composite panel systems and metal profiled sheet

2.10 FACADE SEALANT - HIGHEST MOVEMENT, POLYURETHANE, PAINTABLE

SikaHyflex®-250 Facade is a durable, low VOC, one component, solvent free, moisture curing elastic polyurethane sealant with a joint movement capacity of +100/-50% and elongation at break of 800%. Conforms to ISO 11600, Type F, class 25LM.

Can be over-painted with a range of paints and coatings.

2.11 FACADE SEALANT - HIGH MOVEMENT, SILICONE, NON-PAINTABLE

Sikasil WS 605S is a durable, low VOC, one component, neutral curing silicone sealant with a joint movement capacity of +/-50%. Suitable waterproofing and sealing application where durability in severe conditions is required. Conforms to ISO 11600 Type F & G, class 25LM.

Facade sealants for timber / fibre cement sheets and boards

2.12 FACADE SEALANT - HIGHEST MOVEMENT, POLYURETHANE, PAINTABLE

SikaHyflex®-250 Facade is a durable, low VOC, one component, solvent free, moisture curing elastic polyurethane sealant with a joint movement capacity of +100/-50% and elongation at break of 800%. Conforms to ISO 11600, Type F, class 25LM.

Can be over-painted with a range of paints and coatings.

2.13 FACADE SEALANT - MEDIUM MOVEMENT, HYBRID, PAINTABLE

Sikaflex® AT-Facade is a one component hybrid (silane terminating polymer), low VOC, moisture curing sealant with good weathering and a joint movement capacity +/-25%. Conforms to ISO 11600 Type F, class 25LM and has a BRANZ Appraisal 613.

Can be over-painted with a range of paints and coatings.



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2.14 FACADE SEALANT - MEDIUM MOVEMENT, MS, PAINTABLE

Sikaflex® MS is a one component MS (silane modified polymer), low VOC, moisture curing sealant with good weathering and a joint movement capacity +/-25%. Conforms to ISO 11600 Type F, Class 25LM and has a BRANZ Appraisal 311. Complies with NZBC E2/AS1, 9.1.5 Air seals, for use as an air seal around exterior windows and doors.

Can be over-painted with a range of paints and coatings.

Window and door sealants - aluminium / timber / PVC

2.15 WINDOW & DOOR SEALANT - HIGHEST MOVEMENT, POLYURETHANE, PAINTABLE

SikaHyflex®-250 Facade is a durable, low VOC, one component, solvent free, moisture curing elastic polyurethane sealant with a joint movement capacity of +100/-50% and elongation at break of 800%. Conforms to ISO 11600, Type F, class 25LM.

Can be over-painted with a range of paints and coatings.

2.16 WINDOW & DOOR SEALANT - HIGH MOVEMENT, SILICONE, NON-PAINTABLE

Sikasil WS 605S is a durable, low VOC, one component, neutral curing silicone sealant with a joint movement capacity of +/-50%. Suitable waterproofing and sealing application where durability in severe conditions is required. Conforms to ISO 11600 Type F & G, class 25LM.

2.17 WINDOW & DOOR SEALANT - MEDIUM MOVEMENT, HYBRID, PAINTABLE

Sikaflex® AT-Facade, is a one component hybrid (silane terminating polymer), low VOC, moisture curing sealant with good weathering and a joint movement capacity +/-25%. Conforms to ISO 11600 Type F, class 25LM and has a BRANZ Appraisal 613.

Can be over-painted with a range of paints and coatings.

2.18 WINDOW/DOOR SEALANT - MEDIUM MOVEMENT, MS, PAINTABLE

Sikaflex® MS is a one component MS (silane modified polymer), low VOC, moisture curing sealant with good weathering and a joint movement capacity +/-25%. Conforms to ISO 11600 Type F, Class 25LM and has a BRANZ Appraisal 311. Complies with NZBC E2/AS1, 9.1.5 Air seals, for use as an air seal around exterior windows and doors.

Can be over-painted with a range of paints and coatings.

Concrete Floor Sealant - control joints / seismic and wide joints

2.19 CONCRETE FLOOR - CONTROL JOINTS / CRACK REPAIR

Sikaflex® PRO-3 Purform, is a one component, low VOC, moisture curing polyurethane floor joint sealant with a joint movement capacity of +/-50% to ASTM C719. Good chemical and mechanical resistance. Conforms to ISO 11600 Type F, Class 25HM.

Can be over-painted with a range of paints and coatings.

Roofing sealants

2.20 ROOFING SEALANT - METAL ROOFING PROFILES & FLASHINGS

Sikasil® Roofing and Plumbing, a one component neutral curing silicone sealant with movement joint capacity of +/-25%. Non-corrosive to metals and has excellent adhesion to many substrates including copper and zinc. Conforms to ISO 11600 Type F, class 25LM.

2.21 ROOFING SEALANT - BITUMEN ROOFING & FLASHING

Sika BlackSeal®-1 is a one component, bitumen-based sealant with 85% solids. Compatible with most bitumen roofing systems and bonds to many substrates including timber, concrete and metal. Can be applied to damp substrates and can be used in conjunction with Sika Blackseal Elastic System, a below grade tanking system. Cartridge applied sealant.

2.22 ROOFING SEALANT & FLEXIBLE ADHESIVE - CONCRETE / CLAY / TERRACOTTA TILES

Sikaflex 123MS Bond is a one component, polyurethane / MS hybrid, flexible sealant /adhesive based on silane terminated polymers. Excellent adhesion to many porous and non-porous substrates (including PVC and lead).



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Gypsum plasterboard - fire rated joints

2.23 FIRE-RATED SEALANT - PU, FOR FIRE RATED JOINTS UP TO 4 HOURS

Sikaflex®-400 Fire is a one component, fire rated, polyurethane, moisture curing, paintable, elastic joint sealant with a movement capacity of +/-35%. For internal and external applications. Up to 4 hour fire resistance (depending on tested joint configuration) in accordance to AS 1530.4 and EN 1366.4.

Interior sealants / adhesives

2.24 BATHROOM ADHESIVE - ACRYLIC SHOWER LINERS & BATHWARE

Sika Showerbond, a one component solvent based, fast grab, gun grade adhesive, specifically formulated for bonding plastic shower linings to unpainted gypsum plasterboard or fibre cement wall linings.

2.25 BATHROOM SEALANT - ACRYLIC BATHWARE

Sikasil ® NG, a one component, neutral curing silicone sealant formulated for use with acrylic, ASB and polycarbonate bathware.

2.26 INTERIOR GENERAL SEALANT - WALL PANELS, MOULDINGS ETC

Sikasil ® Wet Areas is a one component, neutral curing wet area silicone sealant with joint movement capacity of +/-25%. Good durability and adhesion to a wide range of substrates including standard wet area substrates. Conforms to ISO 11600 Type F & G, class 25LM.

2.27 INTERIOR SOLVENT BASED ADHESIVE - BONDING WALL PANELS

Sika® Nailbond® SB is a one component, solvent based, general purpose, rubber adhesive for bonding internal lining panels including wet area internal lining panels such as seratone or hardiglaze to substrates. Can use on LOSP or CCA treated timber.

2.28 INTERIOR LOW VOC ADHESIVE - BONDING WALL PANELS

Sikaflex 123MS Bond is a one component, polyurethane / MS hybrid flexible sealant /adhesive based on silane terminated polymers. Excellent adhesion to many porous and non-porous substrates including wet area internal lining panels such as seratone or hardiglaze.

2.29 INTERIOR GENERAL SEALANT - CERAMIC TILING TO FLOORS & WALLS

SikaSeal®-190 N Silicone is a one component, neutral cure, low odour, silicone sealant with joint movement capacity of +/-50%. Excellent adhesion to tiles and glass. Available in a range of colours which match Sika Ceram grout colours..

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

3.3 CONDITIONS FOR APPLICATION

Ensure conditions for application are clean, dry and dust free as possible. Avoid dust, dirt, water and other contamination settling on the cleaned and prepared joint substrate.

Ensure adequate ventilation is maintained during the preparation and application of sealant work and all relevant health and safety equipment is utilised.

Ensure application of Sika products occurs when the ambient and substrate temperature is in accordance with the appropriate Product Data Sheet.

3.4 JOINT DESIGN

Ensure that joints to be filled are in accordance with the current best practice such as BRANZ Bulletin 584 and in accordance to joint requirements stated in the relevant Product Data Sheet.

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Unless stated otherwise in relevant Product Data Sheet, a typical joint should be configured on a 2:1 width to depth ratio. Minimum joint width should be not less than 10mm and should not exceed 50mm.

A Sika PEF backing rod should be applied to the base of all open backed joints and a generic bond breaker tape should be adhered to the base of all shallow joints to prevent 3-sided adhesion.

3.5 COMPATIBILITY

Ensure compatibility by using only Sika branded sealants with Sika branded products including cleaners, primers, sealants, adhesives, filler and backing rods. Products should not be substituted without the prior approval of the specifier.

3.6 SUBSTRATE STAINING

Note that some sealants can cause staining on porous substrates such as concrete, masonry and natural stone. If in doubt, compatibility testing should be undertaken to confirm suitability prior to application.

3.7 SEALANT PAINTABILITY

Ensure that a paintable sealant is selected when the sealant joint requires painting. The overpainting of sealant will reduce its flexibility at the coating interface. If in doubt about the sealant / over-coating compatibility, testing should be undertaken to confirm suitability prior to application.

NOTE: This excludes silicon based sealants which are not paintable.

3.8 COLOURS

Refer to SELECTIONS for colour option/s. Where colour is not specified, choose sealant colours from the **Sika** standard/special colour ranges.

3.9 LIMITATIONS

All relevant and current Sika Technical Data Sheets must be consulted prior to application, to ensure that the specified product is suitable based on the actual site / joint conditions observed. All current technical literature is available on nzl.sika.com or by phoning 0800 SIKANZ.

Installation/application

3.10 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Preparatory work

3.11 PRE-COMMENCEMENT CHECK

Ensure that joints to receive Sika sealants are suitable for the proposed application and are within the specified width to depth ratios in accordance with the relevant and current Product Data Sheet.

Ensure that surfaces are sound, dry, free from dust, dirt, scale, laitance, corrosion or other loose material, oil, grease, paint, release agents or other contaminants which may affect the bond, or the performance of the sealing material.

3.12 TEST SUBSTRATES

If in doubt about the suitability of substrate, test the affected substrate for indications of poor adhesion, staining and contamination.

If poor adhesion is evident from initial tests, consult **Sika** about the application of a suitable cleaning and preparation process and the application of a primer. Only use combinations of sealants and substrates for which favourable adhesion and compatibility have been confirmed.

3.13 SUBSTRATE CLEANING & PREPARATION

Prepare and clean joint substrates in accordance with the relevant and current Product Data Sheet. Protect adjacent surfaces from abrasion or other damage.

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Typically concrete surfaces should be ground to remove concrete laitance and other surface contaminates. Non-porous surfaces such as metal to be cleaned with a Sika approved cleaner / activator to remove any contaminating films or barriers.

Apply a suitable masking tape to the adjacent surfaces along the length of joints to prevent contamination during application. Mask off any surfaces which would be difficult to clean if smeared with sealant, or where excess sealant could not be neatly trimmed off or removed.

Application - sealants / adhesives

3.14 INSTALLATION BACKING ROD

Insert a Sika PEF backing rod to the specified depth within the cleaned and prepared joint to provide a solid base for the sealant application.

The diameter of the Sika PEF backing rod should be 25% larger than the gap width and compressed evenly into the joint using a blunt instrument to avoid puncturing or damaging the rod. Do not twist the rod during application. Punctured rod may lead to 'out-gassing' which can cause the bubbling during sealant curing.

The rod should be consistently and evenly installed without any gaps. The midpoint of the installed rod should be sitting at the specified depth for each joint.

3.15 INSTALLATION BOND BREAKER TAPE

Adhere a suitable bond breaker tape to the base of the cleaned and prepared joint. The width of the tape needs to be slightly narrower than the width of the joint and must be adhered in a manner that avoids adhesion to either side of the joint.

3.16 PRIMING - POROUS SUBSTRATES

Confirm the porous primer selection with the selected sealant current Product Data Sheet. Generally, porous substrates such as concrete, masonry or unpainted timber, apply by brush a uniform, thin film of Sika Primer 3N to the substrate. The primer seals, densifies and increases the surface area of substrate to promote adhesion of the selected sealant.

Allow primer to dry for the recommended time, at least 30 minutes before the application of sealant and should be left no more than 8 hours. Do not prime more than can be sealed in one day. Primed joints that have been left for more than specified time (or overnight) or have become contaminated will need to be cleaned and re-primed prior to sealant application.

Do not contaminate the bond breaker tape or backing rod with primer.

3.17 PRIMING - NON-POROUS SUBSTRATES

Confirm the non-porous primer selection with the selected sealant current Product Data Sheet. Generally, non-porous substrates such as aluminium (coated / anodised), stainless steel, galvanised steel, powdercoated metals, zinc, glazed tiles and paint/epoxy coatings, should be cleaned and treated using Sika Aktivator-205.

Wipe on Sika Aktivator-205 with a clean cloth and allow to dry for minimum 15 minutes and a maximum of 6 hours prior to sealant application. Primed joints that have been left for more than 6 hours (or overnight) or have become contaminated will need to be cleaned and re-treated.

Do not allow primer to contaminate other surfaces as a slight discolouration on some finishes may occur.

For substrates not mentioned above, refer to the relevant and current Sika Sealant Product Data sheet for priming requirements.

3.18 PRIMING - FOR ACRYLIC AND BITUMEN BASED SEALANTS

Substrate cleaning and preparation to be in accordance with the relevant and current Sika Sealant Product Data sheet. No primers are required for these products.

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3.19 SEALANT APPLICATION

Sika sealants are supplied ready to use, insert the cartridge / uni-pack into a sealant pressure gun. After the necessary substrate / joint preparation and priming, extrude uniformly the selected sealant into the joint cavity.

Apply sealant to ensure full contact with the substrate on each side of the joint with no voids or pockets of entrapped air. There should be a minimum amount of overfill.

3.20 SEALANT TOOLING & FINISHING

Tool sealant as soon as practical after application and prior to the sealant surface forming a skin. Tool sealant face firmly to compact into the joint to form a smooth, flat or concave profile, to give the desired effect when cured.

Tooling must be carried out carefully, ensuring that the sealant minimum depth profile is not compromised.

A compatible tooling agent or fresh clean water can be used sparingly to assist with the smoothing of the tooled surface. Do not use products containing solvent, alcohol or fuel, as these products will inhibit the curing of the sealant.

Remove masking immediately after tooling and remove excess sealant from adjoining surfaces before sealant surface starts to skin. Refer to the relevant and current Product Data Sheet for information on curing times. Note skinning times are temperature dependent.

Any cured sealant can only be removed mechanically and care must be taken to avoid damage of surrounding surfaces.

3.21 ADHESIVE APPLICATION

Apply selected Sika adhesive for bonding shower liners and wall panels such as seratone and hardiglaze in accordance with Sika NZ Ltd instruction and the relevant and current Product Data Sheets.

3.22 SURROUNDING WORK

Leave surrounding surfaces in a neat, clean condition with no evidence of spill over.

Completion

3.23 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to nzl.sika.com.
Substitutions are not permitted to the following, unless stated otherwise.

Facade joints - concrete, masonry & brickwork - non-fire rated

4.1 SIKAHYFLEX®-250 FACADE - FACADE SEALANT FOR CONCRETE, MASONRY, BRICK

Product:	SikaHyflex®-250 Facade
Product colour:	Concrete Grey
Joint width	10mm minimum to 50mm maximum. Refer to Product Data sheet for guidance if required.
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

4.2 SIKASIL WS 605S - FACADE SEALANT FOR CONCRETE / MASONRY

Product:	Sikasil® WS 605S
Joint width:	10mm minimum to 50mm maximum. Refer to Product Data sheet for guidance if required.
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

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4.3 SIKAFLEX® AT-FACADE SEALANT - FACADE SEALANT FOR CONCRETE / MASONRY

Product:	Sikaflex® AT-Facade
Joint width:	10mm minimum to 50mm maximum. Refer to Product Data sheet for guidance if required
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

4.4 SIKAFLEX® MS SEALANT - FACADE SEALANT / AIR SEAL FOR CONCRETE / MASONRY

Product:	Sikaflex® MS
Joint width:	10mm minimum to 35mm maximum - for weather seals 6mm minimum to 35mm maximum - for air seals Refer to Product Data sheet for guidance if required
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

Facade joints - concrete, masonry & brickwork - fire rated

4.5 SIKAFLEX®-400 FIRE - FIRE RATED FACADE SEALANT FOR CONCRETE / MASONRY

Product:	Sikaflex®-400 Fire
Product colour:	Grey
Joint width:	10mm minimum to 50mm maximum. Depends on fire tested joint configurations. Refer to Product Data sheet for guidance or contact Sika Technical Services for specific information, if required
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

Facade joints - aluminium composite panels and metal profiles sheets

4.6 SIKAHYFLEX 250 FACADE - FACADE SEALANT FOR ALUMINIUM COMPOSITE PANELS / METAL PROFILED SHEET

Product:	SikaHyflex®250 Facade
Product colour:	Concrete Grey
Joint width:	10mm minimum to 50mm maximum. Refer to Product Data sheet for guidance if required.
Primer/cleaner:	Sika Aktivator 205 - for non-porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

4.7 SIKASIL WS 605S - FACADE SEALANT FOR ALUMINIUM COMPOSITE PANELS / METAL PROFILED SHEET

Product:	Sikasil® WS 605S
Joint width:	10mm minimum to 50mm maximum. Refer to Product Data sheet for guidance if required
Primer/cleaner:	Sika Aktivator 205 - for non-porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

Facade joints - Timber, fibre-cement sheets & boards

4.8 SIKAHYFLEX 250 FACADE - FACADE SEALANT FOR TIMBER / FIBRE CEMENT

Product:	SikaHyflex®250 Facade
Product colour:	Concrete Grey
Joint width:	10mm minimum to 50mm maximum. Refer to Product Data sheet for guidance if required.
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

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4.9 SIKAFLEX AT FACADE - FACADE SEALANT FOR TIMBER / FIBRE CEMENT

Product:	Sikaflex® AT Facade
Joint width:	10mm minimum to 50mm maximum. Refer to Product Data sheet for guidance if required.
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

4.10 SIKAFLEX® MS SEALANT - FACADE SEALANT / AIR SEAL FOR TIMBER / FIBRE CEMENT

Product:	Sikaflex® MS
Joint width:	10mm minimum to 35mm maximum - for weather seals 6mm minimum to 35mm maximum - for air seals Refer to Product Data sheet for guidance if required
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

Window & Door Sealant - Aluminium / PVC / Timber

4.11 SIKAHYFLEX®-250 FACADE - WINDOW & DOOR SEALANT

Product:	SikaHyflex®-250 Facade
Product colour::	Concrete Grey
Joint width:	10mm minimum to 50mm maximum width. Refer to Product Data sheet for guidance if required.
Primer/cleaner:	Sika Aktivator 205 - for non-porous substrates or Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

4.12 SIKASIL WS 605S - WINDOW & DOOR SEALANT

Product:	Sikasil® WS 605S
Joint width:	10mm minimum to 50mm maximum width. Refer to Product Data sheet for guidance if required.
Substrates:	Aluminium / adjacent subs
Primer/cleaner:	Sika Aktivator 205 - for non-porous substrates or Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

4.13 SIKAFLEX® AT-FACADE - WINDOW & DOOR SEALANT

Product:	Sikaflex® AT-Facade
Joint width:	10mm minimum to 50mm maximum width. Refer to Product Data sheet for guidance if required.
Substrates:	Aluminium / adjacent subs
Primer/cleaner:	Sika Aktivator 205 - for non-porous substrates or Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

4.14 SIKAFLEX® MS SEALANT - WINDOW & DOOR SEALANT / AIRSEAL

Product:	Sikaflex® MS
Joint width:	10mm minimum to 35mm maximum - for weather seals 6mm minimum to 35mm maximum - for air seals Refer to Product Data sheet for guidance if required
Primer/cleaner:	Sika Aktivator 205 - for non-porous substrates or Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

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Concrete floor sealant - control joints / over-sized & seismic joints

4.15 SIKAFLEX® PRO-3 PURFORM - CONCRETE FLOOR CONTROL JOINTS

or Product:	Sikaflex® PRO-3 Purform
Product colour:	Concrete Grey
Joint width:	8mm minimum to 40mm maximum. Refer to Product Data sheet for guidance if required
Substrate:	Concrete
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint) - use if rod is required to obtain joint width/depth ratio or PVC / PTE bond breaker tape - use when sealant will fill to base of joint.

Roof sealant

4.16 SIKASIL® ROOFING AND PLUMBING - METAL ROOFING PROFILES & FLASHINGS

Product:	Sikasil® Roofing and Plumbing
Product colour:	Translucent
Substrates:	Suitable for most types of metal roofing systems: coated metal roofing, mill, anodised and powdercoated aluminium, copper, brass, galvanised metal and zinc Also suitable for a wide range of common building surfaces including rigid PVC, acrylic, polycarbonate, painted surfaces, concrete, brick, terracotta, ceramic tiles etc
Primer/cleaner:	None

4.17 SIKAFLEX 123MS BOND SEALANT & FLEXIBLE ADHESIVE - CONCRETE / CLAY / TERRACOTTA TILES

Product:	Sikaflex 123MS Bond
Primer/cleaner:	None

Gypsum plasterboard - fire rated joints

4.18 SIKAFLEX®-400 FIRE - FIRE RATED SEALANT FOR GYPSUM PLASTERBOARD

Product:	Sikaflex®-400 Fire
Product colour:	Grey
Joint width:	10mm minimum to 50mm maximum. Depends on fire tested joint configurations. Refer to Product Data sheet for guidance or contact Sika Technical Services for specific information, if required
Substrate:	Pre-cast concrete, insitu concrete, blockwork, stone, gypsum plasterboard
Primer/cleaner:	Sika Primer 3N - for porous substrates
Backing:	Sika PEF Backing rod - (diameter - 25% wider than joint)

Interior sealants and adhesives

4.19 SIKA SHOWERBOND - ACRYLIC SHOWER LINERS & BATHWARE

Product:	Sika Showerbond
Product colour:	Green
Substrates:	Acrylic, ABS and polycarbonate shower linings / unpainted plasterboard, fibrecement wall linings or directly to timber substrate.
Primer/cleaner:	None

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4.20 SIKA® NAILBOND® SB - ADHESIVE FOR BONDING WALL PANELS, SOLVENT BASED

Product:	Sika® Nailbond® SB
Product colour:	Biege
Substrates:	A wide range of wall panels including seratone or hardiglaze / directly to timber or steel framing or plasterboard, fibrecement linings and many other common building substrates.
Primer/cleaner:	None

4.21 SIKAFLEX 123MS BOND - ADHESIVE FOR BONDING WALL PANELS, LOW VOC

Product:	Sikaflex 123MS Bond - low VOC
Substrates:	A wide range of wall panels including seratone or hardiglaze / directly to timber or steel framing, plasterboard linings and many other common building substrates.
Primer/cleaner:	None

4.22 SIKASIL® NG - SEALANT FOR ACRYLIC BATHWARE

Product:	Sikasil® NG
Substrates:	Acrylic, ABS and polycarbonate bathware / ceramics, glass, powdercoated aluminium, coated and painted metals, metal, timber, hardiglaze, seratone etc
Primer/cleaner:	None

4.23 SIKASIL WET AREAS - GENERAL INTERIOR SEALANT

Product:	Sikasil ® Wet Areas
Substrate:	Porcelain whitewear & fittings, painted surfaces, ceramic tiles, glass, plastic laminates, stainless steel, rigid PVC , acrylics, polycarbonate, metal, copper, brass, powdercoated aluminium, concrete etc
Primer/cleaner:	None

4.24 SIKASEAL-190 N - GENERAL INTERIOR SEALANT FOR TILING

Product:	Sikaseal®-190 N Silicone
Substrate:	Ceramic, tiles, glass, enamel, porcelain, aluminium, concrete, grouts. Note: Do not use on porous surfaces or for sealing marble or natural stone. Contact Sika for further advice for these applications.
Primers/cleaners:	None

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4821 FLASHINGS

1 GENERAL

This section relates to the fabrication and installation of flashing systems not forming part of a proprietary system.

1.1 RELATED WORK

Refer to the appropriate roofing section for roof flashings.

Refer to the appropriate window and door section for window and door flashings
Refer to Facade Engineers technical information

Refer to Starke Shop Drawings for flashings associated with Curtain Walling junctions

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B2/AS1	Durability provisions for building elements
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 2728	Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements
AS 3566	Self-drilling screws for the building and construction industries - General requirements and mechanical properties
NZS 3604	Timber-framed buildings
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

Requirements

1.3 QUALIFICATIONS

Work to be carried out by trades people experienced, competent and familiar with the materials and techniques specified.

1.4 VERIFY DIMENSIONS

Verify dimensions against site measurements prior to fabrication.

Standards of performance

1.5 DURABILITY REQUIREMENTS

Design and install the flashings appropriate for the durability applications in accordance with NZBC B2/AS1. The Building Code B2, 3.2 requires that all hidden elements have at least the same durability as that of the element that covers it. Refer to NZBC B2/AS1, Table C.1.1.1 and NZBC E2/AS1, Table C.1.1.1A: Material selection.

1.6 COMPATIBILITY REQUIREMENTS

Each flashing material shall be selected in accordance with NZBC E2/AS1, Table C.1.1.1A: Material selection, to minimise corrosion. Refer to either NZS 3604 Clause 4.2 or AS/NZS 2728 for the relevant exposure conditions. For compatibility of materials in contact and subject to run-off, refer to NZBC E2/AS1, Table C.1.1.1B: Compatibility of materials in contact, and Table C.1.1.1C: Compatibility of materials subject to run-off.

1.7 PROTOTYPES - REVIEW

Refer to the general section 1270 CONSTRUCTION for details of how prototypes will be reviewed and how instructions to proceed will be given. For flashings where there are no specific details or drawings, provide full size prototypes of the flashings to integrate components into the weathertight system. Co-ordinate with the trades affected by the installation. Provide the prototype flashings to the contract administrator for review.

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2 PRODUCTS

2.1 FLASHING MATERIALS

Acceptable materials for flashings are described in NZBC E2/AS1, 4.0 Flashings. Material, grade and colour as detailed and scheduled. Ensure that materials used for flashings are compatible with the building and cladding materials and their fixings.

2.2 FLASHING FABRICATION

Fabricate flashings generally to NZBC E2/AS1, 4.0 Flashings, from a ductile grade of metal designed for lateral strength by folding, stiffening or ribbing on external edges, having a maximum un-stiffened width of 300mm. Provide all hooks, hems, kick outs, bird's beaks, stop ends, soft edges and turn downs etc. to NZBC E2/AS1, 4.0 Flashings, or as shown on the drawings.

2.3 FIXINGS

Rivets, screws, nails and cleats to be compatible with the materials being fastened. Fasteners complying with the corrosion requirements of AS 3566 are suitable for use with ZINCALUME® steel products. Use only low carbon non-conductive sealing washers.

2.4 JOINTS - SEALANTS

Neutral Curing silicone or MS polymer sealant as required, with low resistance to compression and be-able to withstand large temperature variations. MS polymer sealant to be used where the sealant is exposed and the surrounding surfaces are to be subsequently painted or coated.

2.5 JOINTS - SOLDER

Eutectic solder of 60% tin/40% lead using a suitable proprietary flux.

3 EXECUTION

Conditions

3.1 DELIVERY

Keep flashings dry in transit. Take delivery of flashings in an undamaged condition. Reject all damaged materials.

3.2 STORAGE

Store materials and accessories on a level, firm base, in dry conditions, well ventilated, out of direct sunlight and completely protected from weather and damage. Ensure storage areas are away from current work areas. Cover to keep dry until fixed.

3.3 HANDLING

Avoid distortion and contact with potentially damaging surfaces/substances. Do not drag flashings across each other, or across other surfaces. Protect edges, corners and surfaces from damage.

3.4 SUBSTRATE

Do not commence work until the substrate is of the standard required by the installer for the specified flashings, level and in true alignment.

3.5 PROTECT

Protect surfaces, window and door joinery, and finishes already in place, from the possibility of damage during the installation process.

3.6 CONFIRM LAYOUT

Before commencing work confirm the proposed installation of the flashings and expansion joints and other visual considerations of the finished work.

3.7 CO-ORDINATE INSTALLATION

Co-ordinate installation of flashings with associated trades.

Application

3.8 INSTALLATION

Install flashings in accordance with NZMRM CoP and in compliance with NZBC E2/AS1, 4.0 Flashings. For very high wind zones and where the pitch of the roof is below 15° the flashing joint laps shall be sealed with sealant at each end of the lap to prevent the ingress of water.

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Refer to NZBC E2/AS1, Table 4.5.1.1: General dimensions of metal flashings and other flashings as listed, for general dimensions of flashings.

3.9 FIXINGS

Fix flashings with fasteners appropriate to the situation. For fixing flashings with proprietary brackets or clips ensure they are aligned to allow for movement and are compatible with the flashing material.

Fix screws with the shank perpendicular to the surface of the flashing with the washer fitted firmly against the flashing. Screws to be compatible with the flashing material.

Rivets 'blind' or 'pop' are to be sealed when used. Aluminium rivets are compatible with zinc or AZ coated steel. Monel and stainless steel rivets can be used to fix galvanized steel flashings. Minimum diameter of rivet to be used is 4.0mm. Drill hole 1mm larger than the rivet size. Seal head of rivet with neutral cured silicone.

3.10 JOINTING - SEALANTS

Clean surfaces to be lapped using a solvent ensuring all traces of the solvent are removed with a clean rag. Apply sealant by gun in a continuous bead of approximately 5mm diameter. Width of sealant when compressed should not exceed 25mm. Sealant joints shall be mechanically fixed for strength. Refer to NZMRM CoP for details.

3.11 JOINTING - SOLDER

Solder joints in galvanized steel and non-ferrous metals when specified with lead/tin solder. Clean joint ensuring it is dry and free of grease immediately prior to applying a proprietary flux. Lap the flashing 25mm in the direction of the water flow and fasten the lap with rivets or screws at 50mm centres. Completely sweat the joint to avoid leaving any flux residue. Wash down the joint to remove any trace of flux.

3.12 FINAL INSPECTION

A final inspection by the installer to take place after completion of the flashing work. Any defects or subsequent damage to be made good.

Completion

3.13 PROTECT

Protect new work from damage.

3.14 REPLACE

Replace all damaged or marked elements.

3.15 LEAVE

Leave work to the standard required for following procedures.

3.16 REMOVE

Remove debris, unused materials and elements from the site.



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4 SELECTIONS

4.1 FLASHINGS

Type	Material and finish/colour	
General flashings:	0.75mm Colorsteel - colour to match general element colour	
Window/doors:		
- Head:	for locations not specified under Starke Commercial - aluminium anodised to match window	0.7mm
- Sill:	for locations not specified under Starke Commercial - aluminium anodised to match window	0.7mm
Cladding:		
- External corner:	Refer to Starke Commercial technical information Refer to Dimond Cladding technical information colour to match general element colour	
- Internal corner:	Refer to Starke Commercial technical information Refer to Dimond Cladding technical information colour to match general element colour	
Balustrade capping:	Refer to Starke Commercial technical information	
Wall/roof junctions	Refer to Starke Commercial technical information Refer to Dimond Cladding technical information colour to match general element colour	
Parapet capping:	Refer to Starke Commercial technical information colour to match section of curtaining walling	
Saddle:	0.75mm Colorsteel colour to match general element colour	
Gutter apron:	0.75mm Colorsteel colour to match general element colour	
Roof penetrations:	0.75mm Colorsteel colour to match roof cladding	

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4861MT MONKEYTOE WALKWAY, PLATFORM & ACCESS SYSTEMS

1 GENERAL

This section relates to the manufacture, supply and installation of **Monkeytoe Group Ltd** walkway, platform and access systems.
It includes:

- Roof access hatches
- Snow/gutter Guard
- Fold down ladder

Related work

1.1 RELATED SECTIONS

Refer to ~ for ~.

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B1/AS1	Structural provisions for buildings
NZBC B2/AS1	Durability provisions for building elements
NZBC F4/AS1	Safety from falling
AS/NZS 1170	Structural design actions
BPS	Building Product Specifications
AS 1657: 2013	Fixed platforms, walkways, stairways and ladders - Design, construction and installation
BRANZ BU 567	E2/AS1 Flashing Requirements

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Monkeytoe Group Ltd technical data and specifications
Monkeytoe Group Ltd Instruction Manual
Monkeytoe Group Ltd Roof Access Hatch water tightness test BRANZ DC11159-001-01
Monkeytoe Group Ltd Roofing clip and fixings. Leak resistance BRANZ DC12018-001-01

Manufacturer/supplier contact details

Company:	Monkeytoe Group Ltd
Web:	www.monkeytoe.co.nz
Email:	spec@monkeytoegroup.com
Telephone:	0800 658 637

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years	Monkeytoe® Fold Down Ladder System
10 years	Monkeytoe® Roof Access Hatches
10 years	Monkeytoe® Snow / Gutter Guard system

- Provide this warranty on the manufacturer/supplier standard form. Warranty covers faulty or defective workmanship and materials used in the construction. Conditions apply; refer to Monkeytoe Group Ltd Warranty Terms and Conditions document for details.
- Monkeytoe® products carry a warranty from the date of installation and sign off.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer warranty:

2 years For installation

- Provide this warranty on the installer standard form (if unavailable, use the generic form in the general section 1237WA WARRANTY AGREEMENT).
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements (if required).

Requirements

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, associated components or product.

1.7 QUALIFICATIONS - MONKEYTOE PRODUCT RANGE

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 MONKEYTOE ROOF FIXING OPTIONS

Monkeytoe® Roof clip options:

- Clamp Fix - Monkeytoe® RC07 clamp fix roof clip designed to clamp onto various roof profiles leaving no markings. Aluminium clip with a heavy duty polyether insert.
- Top Fix – Monkeytoe® RC01 top fix roof clip designed to take load off the roof and onto the building structure. Jack stud and combi-stud options based on roofing profile. Neoprene sealing washer between roof and clip.

1.9 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not limited to:

- design engineering calculations
- fully dimensioned elevations of all elements (minimum scale 1:50)
- complete details of construction, connections and all support systems (scale 1:10)
- dimensions of all typical elements and of any special sizes and shapes
- jointing details and method of fixing between individual elements and between this installation and adjacent work, including adjustment
- adjustment of fixings to ensure accurate alignment
- sealant types and full size sections of all sealants and backing rods
- provision for thermal movement
- provision for seismic movement and movement under wind loads
- sequence of installation
- co-ordination requirements with other work
- a full schedule of materials, finishes, componentry, hardware and fittings

If requested provide the following additional information:

~

Submit shop drawings for review to Contract Administrator.

- 10 working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication.

Compliance information

1.10 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer's warranty - including PS3
- Installer's warranty - PS3 (workmanship guarantee)
- Producer Statement PS1- Design by the manufacturer

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2 PRODUCTS

Materials - ladders

2.1 FOLD DOWN LADDER

Monkeytoe® Fold Down Ladder, manufactured to AS/NZS 1170, complies with NZBC B1, NZBC B2, AS 1657 and AS/NZS 1891.4. System comprised of:

- Prefabricated modular componentry of marine grade high strength 6061-T6 aluminium, all external threaded fasteners to be Grade 304 stainless steel, all self-drilling screws to be Grade 410 stainless steel with a metallic flake coating, and neoprene sealing washers
- Mounting door of pre-finished 18mm white laminate panel or paintable MDF board
- Dimensions - overall ladder width 605mm, distance between stiles 525mm, rung diameter 50mm x 35mm (profiled), rung spacing 300mm, stile extension above landing surface 1000mm to 1300mm, minimum clearance between ladder 200mm (vertical position)

Materials - roof access hatch

2.2 ROOF ACCESS HATCH

Monkeytoe®; Roof Access Hatches complete with aluminium body, fully lockable insulated lid complete with a pneumatic stay, stainless steel fittings and hinges. To suit roof pitches up to 45º and suitable for all wind zones.

Available in custom or standard sizes;

- 1100mm x 800mm
- 1300 x 800mm
- 1600mm x 900mm

Thermal performance: Roof access hatch VAH10.8 has an R value of 0.39 ± 0.02 m²K/W and roof access hatch VAH11.8 has an R value of 0.4 ± 0.02 m²K/W.
Fire performance: Roof access hatches VAH10.8 and VAH11.8 achieve a Group number 1S in accordance with BPS, Table 8.5.2.1: Material Group Numbers for some substrate and coating combinations.

Materials - snow/gutter guards

2.3 SNOW/GUTTER GUARD – ALUMINIUM

Monkeytoe® Snow/Gutter Guard, trafficable, based on the Monkeytoe® Smartwalk Walkway System, manufactured to AS/NZS 1170, complies with NZBC B1, NZBC B2, AS 1657 and AS/NZS 1891.4. System comprised of:

- Marine grade 3mm folded aluminium sheets with Grade 316 stainless steel screws
- Standard perforations of 22mm (49% open) – custom sizes available
- High density polyethylene UV resistant adjustable support system to set the gutter guard at the correct height for the gutter.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCT

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products. Do not deliver any elements to the site which cannot be unloaded immediately into suitable storage conditions. Avoid distortion of elements during transit, storage and handling. Prevent surfaces rubbing together, and any contact with mud, plaster or cement. Keep protective coverings dry.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

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3.4 PREPARATION

Ensure location and substrate is ready to receive the elements and will allow work of the required standard.

3.5 SEPARATION

Isolate dissimilar materials (metal and non-metal) in close proximity by painting the surfaces or fitting separator strips. Place isolators between aluminium and treated timber and cement-based materials. Do not use unpainted lead sheet in contact with or allow water run-off onto aluminium. Refer also to BRANZ BU 567.

Assembly

3.6 PROTECTION

During fabrication protect all surfaces which will be visible in completed work.

3.7 COLD FORMED

Ensure cold formed work is free from warping, buckling and fractures. Form bends with a brake press or by cold rolling.

3.8 CORNERS

Unless specified otherwise, mitre junctions of identical sections.

3.9 HOLES

Form without distortion of surrounding metal.

3.10 MOVING PARTS

When assembled, all moving parts must move freely and without binding.

3.11 CLEANING

Remove all burrs and sharp edges which would be visible after fixing, or a hazard to the user.

3.12 RIVETED JOINTS

Draw riveted joints tightly together, with rivets closed to completely fill holes.

3.13 MECHANICAL JOINTS

Ensure mechanical joints are tight with no visible gaps.

3.14 WELDING OF ALUMINIUM

Grind visible welds flush.

Fabrication

3.15 FABRICATE

Fabricate and assemble components in a workshop wherever practicable.

3.16 LOADING

Ensure all elements are fully supported unless designed to be self-supporting.

Installation

3.17 INSTALL MONKEYTOE RANGE

Install Monkeytoe® walkway, platform, steps or ladder access, acoustic barrier and louvre screen systems in accordance with Monkeytoe Group Ltd. recommendations, technical data and instruction manual.

Fixing of roof clips to be in accordance with Monkeytoe® Proprietary Roof Fixing Method either by top fix or hidden fix methods. Ensure the latest version of the installation procedures are being used.

Completion & Commissioning

3.18 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.



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4 SELECTIONS

For further details on selections go to www.monkeytoe.co.nz.
Substitutions are not permitted to the following Monkeytoe® selections, unless stated otherwise.

Materials - ladders

4.1 MONKEYTOE® FOLD DOWN LADDER

Location:	Top of stair 2.
Manufacturer:	Monkeytoe Group Ltd
System:	Monkeytoe® Fold Down Ladder System
Finish:	Mill finish aluminium

Materials - roof access hatch

4.2 MONKEYTOE® ROOF ACCESS HATCH

Location:	Plant deck area on main roof. Refer to roof plan
Supplier:	Monkeytoe Group Ltd
System:	Monkeytoe® Roof Access Hatch
Size:	1000mm x 800mm or 1300mm x 800mm (preferred)
Finish:	Standard - aluminium mill finish
Stay:	Pneumatic Stay

Materials - snow/gutter guards

4.3 MONKEYTOE® SNOW/GUTTER GUARD - ALUMINIUM

Location:	Internal Gutters
Manufacturer:	Monkeytoe Group Ltd
System:	Monkeytoe® Snow/Gutter Guard - Aluminium
Finish:	Mil finish aluminium, stainless steel fixings

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4933 ALUMINIUM METALWORK

1 GENERAL

This section relates to the fabrication and installation of aluminium items of a general nature including aluminium balustrade to stairwells.

Documents

1.1 DOCUMENTS REFERRED TO

Documents referred to in this section are:

AS/NZS 1734	Aluminium and aluminium alloys - flat sheets, coiled sheet and plate
BRANZ BU 567	E2/AS1 Flashing Requirements

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

Requirements

1.2 SAMPLES, FINISH

Submit samples on request of finish offered.

1.3 QUALIFICATIONS

Metalworkers to be experienced in working with aluminium and the techniques specified.

1.4 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not be limited to:

- plans, elevations and sections
- methods of fixing
- methods of joint forming
- finishing techniques
- methods of fabrication and site assembly of large units.

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

2 PRODUCTS

Materials

2.1 ALUMINIUM SHEET

Pre-finished/anodised/plain finish sheet/strip to AS/NZS 1734.

2.2 ALUMINIUM SECTIONS

Refer to SELECTIONS.

Components

2.3 SCREWS

Grade 316 stainless steel self-tapping screws with type of head, length, gauge and thread to suit the work and its location.

2.4 BOLTS

Grade 316 stainless steel, selecting type and size to suit the work and its location.

2.5 RIVETS

Domed with similar composition and mechanical properties to the parent metal.

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2.6 TUBULAR RIVETS

Aluminium with domed/countersunk head.

2.7 THREADED STUDS

Of similar composition and mechanical properties to the parent metal. Select stud and nut threads to suit the base material and the nut being used.

2.8 CLIPS

Form clips to detail of the same metal as the metal sheet to be fixed/secured.

2.9 NAILS

Spiral rolled flat-head/clout type, with similar composition and mechanical properties to the parent metal. Select length and gauge to suit the work and its location.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

Do not deliver any elements to the site which cannot be unloaded immediately into suitable storage conditions. Avoid distortion of elements during transit, storage and handling. Prevent surfaces rubbing together, and any contact with mud, plaster or cement. Keep protective coverings dry.

3.2 PREPARATION

Ensure location and substrate is ready to receive the elements and will allow work of the required standard.

3.3 FLASHINGS

Select and use sheet metals suited to the element, process or finish specified, jointing them as necessary to allow full development of their expected durability with a minimising of corrosion and to BRANZ BU 567.

Assembly

3.4 PROTECTION

During fabrication protect all surfaces which will be visible in completed work.

3.5 COLD FORMED

Ensure cold formed work is free from warping, buckling and fractures. Form bends with a brake press or by cold rolling.

3.6 CORNERS

Unless specified otherwise, mitre junctions of identical sections.

3.7 HOLES

Form without distortion of surrounding metal.

3.8 MOVING PARTS

When assembled, all moving parts must move freely and without binding.

3.9 CLEANING

Remove all burrs and sharp arrises which would be visible after fixing, or a hazard to the user.

3.10 BONDING

Prepare surfaces of metals to receive adhesives by degreasing and abrading mechanically or chemically. Use adhesives in accordance with the manufacturer's requirements. Form bond under pressure.

3.11 RIVETED JOINTS

Draw riveted joints tightly together, with rivets closed to completely fill holes.



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3.12 MECHANICAL JOINTS

Ensure mechanical joints are tight with no visible gaps.

3.13 MECHANICAL JOINTS - ELEMENTS

Bed in mastic all mechanical joints of elements which will be located externally, including all mating surfaces, cleats and other fixings.

3.14 MECHANICAL JOINTS - CLEATS

Unless specified otherwise connect cleats to frames with countersunk screws where they will be visible after the component has been fixed and where raised heads would interfere with any moving part.

Application

3.15 INSTALLATION

Locate plugs accurately and use in accordance with the manufacturer's requirements. Fix plumb, level and true to line. Comply with the specified standards, the reviewed shop drawings and installation details, including brackets, bolts, fixings, bedding compounds and sealants.

3.16 LOADING

Elements must not carry any structural load unless designed to do so. Do not use railings, balustrades, or similar elements as strutting or support when in place.

Assembly - sheet aluminium

3.17 FABRICATE

Fabricate and assemble in a workshop wherever practicable.

3.18 MARK OUT

Mark out the work accurately, square and true to line allowing for correct radius folds and laps to give the dimensions required for neat, close fits when in place. Use marking methods that do not damage, deface or cause future corrosive attack to the sheet metal being worked.

3.19 CUT SHEETS

Cut sheets by mechanical methods leaving edges true to line, square, smooth and free from all burrs.

3.20 FORMING

Use mechanical methods wherever possible and form and fold sheets square and true to line and face, free of all deformation and defects. Minimise cold-working and stress build-up and their effects by limiting the amount of working and avoiding sharp radius bends (minimum 1 x sheet thickness).

3.21 PRE-ASSEMBLE

Pre-assemble in the workshop and match mark items being assembled or erected on site. Do not strain, twist, bend or open such items to force them into the correct position while assembling or erecting.

3.22 SEPARATION

Isolate dissimilar materials (metal and non-metal) in close proximity by painting the surfaces or fitting separator strips. Place isolators between aluminium and treated timber and cement-based materials. Do not use unpainted lead sheet in contact with or allow water run-off onto aluminium. Refer also to BRANZ BU 567.

3.23 JOINING ALUMINIUM SHEET

Use self-secured seams, aluminium pop rivets, bolts and welding as best suits the form and location of the work.

3.24 INSTALLATION

Locate fixings accurately and use in accordance with the manufacturer's requirements. Fix plumb, level and true to line. Comply with the installation details and complete with bedding compounds and sealants.

3.25 LOADING

Ensure all elements are fully supported unless designed to be self-supporting.

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Finishing

3.26 PREPARATION FOR COATINGS

Before applying coatings remove all welding slag, weld spatter, anti-splatter compounds, paints, grease, flux, rust, burrs and sharp arrises. Make good all defects which would show after application of coating. Finish surfaces smooth.

Completion

3.27 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

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5113G GIB® PLASTERBOARD LININGS

1 GENERAL

This section relates to the supply, fixing and jointing of GIB® plasterboard linings and accessories to timber and steel framed walls and ceilings to form:

- standard systems
- bracing systems
- wet area systems
- GIB PLASTERBOARD FIRE & SOUND LININGS

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

AWCINZ	Association of Wall and Ceiling Industries New Zealand

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 2588	Gypsum plasterboard
AS/NZS 2589	Gypsum linings - Application and finishing
NZS 3604	Timber-framed buildings
ISO 5660.1	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 1: Heat release rate (cone calorimeter method)
ISO 5660.2	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 2: Smoke production rate (dynamic measurement)
BRANZ Technical Paper P21	BRANZ Technical Paper P21: A wall bracing test and evaluation procedure (2010)

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents which refer to work in this section:

GIB® Site Guide (April 2024)
GIB® Noise Control Systems (September 2017)
GIB® Fire Rated Systems (September 2024)
GIB® Wet Area Systems (February 2021)
GIB® Curveline Specification and Installation Manual for Curved Walls and Ceilings
GIB Toughline® Aqua (July 2018)
GIB Ezybrace® Systems (August 2016)
GIB Ezybrace® Bracing Design Software
GIB Ezybrace® Bracing Supplement Document (December 2016)
GIB Ezybrace® for Light Steel Frame Systems (March 2017)
GIBFix® Framing System (August 2016)
GIB Rondo® Metal Batten System (September 2024)
GIB-Cove®
GIB RocTape®
GIB® Goldline™ Platinum Tape-on Trims
GIB® UltraFlex high impact corner mould
GIB® Tough Systems (November 2014)
BRANZ Appraisal 289 (2024) GIB® Fire Rated Systems
BRANZ Appraisal 394 (2025) GIB® Noise Control Systems
BRANZ Appraisal 427 (2021) GIB® Wet Area Systems
BRANZ Appraisal 928 (2021) GIB EzyBrace® Systems

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Manufacturer/supplier contact details
Company: Winstone Wallboards
Web: www.gib.co.nz
Telephone: 0800 100 442

Requirements

1.4 NO SUBSTITUTIONS

Substitutions are not permitted to any specified GIB® systems, GIB® system components, GIB® plasterboard, associated GIB® products or GIB® accessories.

1.5 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 INSPECTIONS AND ACCEPTANCE

Allow for inspection of the finished plasterboard surface:

- before applying sealer and
- before applying finish coatings or decorative papers,

so that after assessment of the type and/or angle of illumination and its effect on the completed decorative treatment, group approval and acceptance of the surface can be given.

1.7 FIRE RATING REQUIREMENTS

Refer to SELECTIONS for system/FRR. **Refer to Fire Report and Architectural Documentation**

1.8 SOUND INSULATION REQUIREMENTS

Provide the GIB® Noise Control Systems. Refer to SELECTIONS for system/STC. Include for forming and treating of perimeters of openings and penetrations in the elements to ensure the specified performance. Ensure absence of adjoining flanking paths.

Compliance

1.9 COMPLIANCE - BRANZ APPRAISAL 289

GIB® Fire Rated Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 289.

1.10 COMPLIANCE - BRANZ APPRAISAL 394

GIB® Noise Control Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 394.

1.11 COMPLIANCE - BRANZ APPRAISAL 427

GIB® Wet Area Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 427.

Performance

1.12 SURFACE FIRE PROPERTIES - UNFINISHED BOARD

All GIB® unfinished plasterboard sheet materials achieve a Group Classification of, Group 1-S to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes, following testing in accordance with ISO 5660.1 and ISO 5660.2.

2 PRODUCTS

Materials

2.1 GIB® PLASTERBOARD

Gypsum plaster core encased in a face and backing paper formed for standard and water resistance use to AS/NZS 2588. Refer to SELECTIONS for location, type, thickness and finish.

GIB® Standard plasterboard
GIB Wideline® plasterboard
GIB Ultraline® high quality surface plasterboard
GIB Fyreline® fire resistant plasterboard

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GIB Braceline® & GIB® Noiseline® dual purpose wall bracing & noise control plasterboard
GIB Aqualine® wet area plasterboard
GIB Toughline®
GIB Toughline® Aqua
GIB Curveline® plasterboard for forming tight curves.

2.2 GIB® COVING

GIB-Cove® plasterboard coving. Refer to SELECTIONS for profile and size.

Components

2.3 CEILING BATTENS

GIB® Rondo® metal ceiling battens, batten joiners and perimeter channel.

2.4 SCREWS

GIB® Grabber® drywall type screws as follows:

Grabber® type	**Used for fixing:**
High Thread	GIB Ezybrace® or Standard systems to timber
Self Tapping	Standard systems to light gauge steel or timber
Dual Thread Screws	GIBFix®, GIB Ezybrace®, or Standard systems, to light gauge steel or timber
Wafer Head Needle Tip	Light gauge metal to timber not directly under plasterboard
Pancake Head Drill Tip	Light gauge metal to light gauge metal directly under plasterboard

Refer to GIB® requirements for appropriate details.

2.5 TAPE ON TRIMS AND EDGES

GIB® Goldline™ tape-on trims

GIB® UltraFlex® high impact corner mould
GIB® Levelline® Tape on Trim

2.6 METAL ANGLE TRIMS

GIB® galvanized steel slim angle trims.

2.7 CONTROL JOINTS

GIB® Rondo® P35 control joints.

GIB® Goldline™ tape-on trims
GIB® plastic W-profile control joints.

Accessories

2.8 ADHESIVE

Timber frame and/or steel frame:

GIBFix® One ultra low VOC water based wallboard adhesive
GIBFix® All-Bond solvent based wallboard adhesive

2.9 JOINTING COMPOUND

Bedding compound:	GIB Tradeset®, GIB Lite Blue®, GIB MaxSet®, GIB ProMix® All Purpose, GIB Plus 4®
Finishing compound:	GIB ProMix® All Purpose, GIB® Trade Finish®, GIB® Trade Finish® Lite, GIB ProMix® Lite, GIB® U-Mix, GIB Plus 4®, GIB Trade Finish® Multi
Cove:	GIB-Cove® Bond

2.10 JOINTING TAPE

GIB® jointing tape.

2.11 FIRE/ACOUSTIC SEALANT

GIB Fire Soundseal® ultra low VOC, mulit use acoustic sealant that resists passage of smoke and fire.

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2.12 GAP FILLER

GIB® Gap Filler ultra low VOC multi-purpose acrylic flexible filler

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 LEVELS OF PLASTERBOARD FINISH

Provide the selected plasterboard surfaces to the pre decorative levels of finish specified in AS/NZS 2589.

Level 4 is the standard for Office building interiors

3.4 PRE-INSTALLATION REQUIREMENTS - TIMBER FRAMING

Check work previously carried out and confirm it is of the required standard for this part of the work.

Framing substrates shall be in accordance to AS/NZS 2589, GIB® Site Guide and GIB X-Block® Radiation Shielding Systems literature.

Check timber framing moisture content is in accordance with requirements of AS/NZS 2589. Refer to NZBC E2/AS1 and GIB® Site Guide.

Timber framing:	18% maximum for fixing plasterboard to timber (8-12% recommended for fixing plasterboard to timber framing if air conditioning and/or central heating are to be installed)

If GIB EzyBrace® systems are used in conjunction with GIBFix® Framing System, ensure that the positioning of the GIB HandiBrac® panel hold-down brackets are to the manufacturers recommended placements for the GIBFix® Framing System.

3.5 PRE-INSTALLATION REQUIREMENTS - STEEL FRAMING

Check work previously carried out and confirm it is of the required standard for this part of the work.

Framing substrates shall be in accordance to AS/NZS 2589, GIB® Site Guide and GIB X-Block® Radiation Shielding Systems requirement. Refer to GIB® Site Guide.

3.6 CONFIRM LEVELS OF PLASTERBOARD FINISH ACCEPTANCE

Before commencing work, agree in writing upon the surface finish assessment procedure towards ensuring that the quality of finish expectations are reasonable and are subsequently obtained and acceptable.

Do not apply decorative treatment until it is agreed in writing by the contractor, subcontractors and decorator that the specified plasterboard Level of Finish has been achieved.

"Levels of plasterboard finish" is a tool for specifying the required quality of finish when installing and flush stopping GIB® plasterboard **prior** to the application of a range of decorative finishes under various lighting conditions. Refer to **AS/NZS** 2589.

3.7 PROTECTION

Protect surfaces; cabinetwork, fittings, equipment and finishes already in place from the possibility of water staining and stopping damage. Refer to GIB® Site Guide.

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Application

3.8 INSTALL CEILING BATTENS

Install to GIB® Rondo® Ceiling Batten Systems requirements.

3.9 LINING WALLS AND CEILINGS GENERALLY

Form to GIB® Site Guide. Ensure bulk insulation thickness shall not exceed that of the wall framing.

3.10 BOARD ORIENTATION

Minimise joints by careful sheet layout using the largest sheet sizes possible, and generally fixing horizontally. Where part sheets are required for various stud heights they should be positioned so the cut sheet is as low as possible to keep joints below eye level.

3.11 FORM FIRE RATED SYSTEMS

Form to GIB® Fire Rated Systems requirements.

3.12 FORM NOISE CONTROL SYSTEMS

Form to GIB® Noise Control Systems requirements.

3.13 FORM WET AREA SYSTEMS

Form to GIB Aqualine® Wet Area Systems requirements.

3.14 FORM CONTROL JOINTS

Form control joints to GIB® Site Guide requirements.

3.15 INSTALL COVES

Install to GIB-Cove® literature using GIB-Cove® Bond.

Only noted if coving is to be required as part of Interior Design

3.16 INSTALL TAPE-ON TRIMS

Install to GIB® Goldline™ Tape-on trims literature and/or GIB® Ultraflex high impact corner mould literature.

Finishing

3.17 FINISHING GENERALLY

To GIB® Site Guide and AS/NZS 2589.

Completion & Commissioning

3.18 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

Plasterboard

4.1 GIB® STANDARD SYSTEMS WALLS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Refer to drawings	GIB® Standard plasterboard	10mm	Level 4 finish
Refer to drawings	GIB® Standard plasterboard	13mm	Level 4 finish

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4.2 GIB® WATER RESISTANT SYSTEMS WALLS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Refer to drawings	GIB Aqualine® plasterboard	10mm	Level 4 finish
Refer to drawings	GIB Aqualine® plasterboard	13mm	Level 4 finish
Refer to drawings	GIB Toughline® Aqua	13mm	Level 4 finish

4.3 GIB® STANDARD SYSTEMS CEILINGS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Refer to drawings	GIB® Standard plasterboard	13mm	Level 4 finish
Refer to drawings	GIB Ultraline® plasterboard 13mm GIB® plasterboard is recommended for ceilings fixed on ceiling battens at 600mm centres. . 13mm GIB Ultraline® has a smoother Pearlcoat™ coated paper to achieve an improved finish.	13mm	Level 4 finish

4.4 GIB® WATER RESISTANT SYSTEMS CEILINGS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Refer to drawings	GIB Aqualine® plasterboard	13mm	Level 4 finish
Refer to drawings	GIB Toughline® Aqua	13mm	Level 4 finish
	13mm GIB® plasterboard is recommended for ceilings fixed on ceiling battens at 600mm centres. GIB Aqualine® is recommended on ceilings in wet areas (i.e. bathrooms, kitchens and laundries) due to its water resistant properties.		

4.5 GIB® SOUND RATED SYSTEMS

Refer to GIB® Noise Control Systems

Location	Plasterboard type / Lining requirements	STC / System specification	Finish Level
Refer to drawings	Refer to drawings - ***A0040,A0041, A0042 for wall types throughout that reference what walls are Sound Rated*** Refer to the Winstone Wallboards Limited's publications GIB Noise Control® Systems and GIB Toughline® Aqua brochure. Refer to GIB Noise Control Systems, for acceptable board substitution options such as using GIB Aqualine in lieu of GIB Standard, Gib Fyreline etc within a system.	Refer to drawings	Level 4 finish

4.6 GIB® FIRE RATED SYSTEMS

Refer to GIB® Residential Garage Boundary Walls.

Location / Type	Plasterboard type / Lining requirements	FRR / System specification	Finish Level
Refer to drawings	Refer to drawings - ***A0040,A0041, A0042 for wall types throughout that reference what walls are Fire Rated***	Refer to drawings	Level 4 finish when exposed

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	Refer to Fire Report Refer to the Winstone Wallboards Limited's publication GIB® Fire Rated Systems. For other fire rated wall applications, use 5171G GIB® PLASTERBOARD FIRE & SOUND LININGS.		

Accessories

4.7 GIB® COVE®

Size/brand/type: *Only noted IF coving is to be required as part of Interior Design*

4.8 GIB® RONDO® CEILING BATTENS

Location: Refer to Drawings
Brand/type: GIB® Rondo® Ceiling battens
Batten type: Gib Rondo GR ~
Clip type: Refer to installer

Batten type:	**Fixing:**	**Clip Type:**	**Drop range:**
GR 310 DF	Direct fix	N/A	35mm
GR 310 CF	Clip fix	311D Clip	40-65mm
		313 Long clip	40-165mm
		A311 Gib Quiet clip	40-65mm
GR 308 CF	Clip fix	226 Clip	20-45mm
		394 Long clip	20-145mm
		STWC acoustic clip	30-40mm
		Betagrip Clip	35/40mm
		A239 clip 100mm bolt	55-130mm
		A239 clip 180mm bolt	55-210mm
GR 129 CF	Clip fix	226 Clip	30-55mm
		394 Long clip	30-155mm
		STWC acoustic clip	40-50mm
		Betagrip Clip	30-50mm
		A239 clip 100mm bolt	70-140mm
		A239 clip 180mm bolt	70-220mm

4.9 GIB® TAPE ON EDGE OR CORNER TRIMS

Brand/type: Read the sheet manufacturer's technical information for the range of trims and edgings available.

4.10 GIB® EDGE PROFILES

Brand/type: Read the sheet manufacturer's technical information for the range of profiles available.

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5151 INTERNAL TRIM

1 GENERAL

This section relates to simple lengths of trim fixed on site as of isolated internal members, with simple end joints.

Documents

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings
NZS 3610	Specification for profiles of mouldings and joinery

Performance

1.2 FIRE PROPERTIES

For all Risk Groups covered by NZBC C/AS2.

All trim to have the appropriate Group Number to match that of the wall or ceiling to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes. Except that, there is no requirement for trim that does not exceed 5% of the wall or ceiling area to NZBC C/AS2, paragraph 4.12.4.1 (d).

2 PRODUCTS

Materials

2.1 TIMBER TRIM

To NZS 3610 and to profiles detailed on the drawings. Timber species, grade and treatment to NZS 3602.

2.2 MDF TRIM

Refer to SELECTIONS for type.

2.3 METAL TRIM

Refer to SELECTIONS for type.

2.4 PROPRIETARY TRIM

Refer to SELECTIONS for type.

Components

2.5 NAILS

Bright steel to dimension requirements of NZS 3604. Use galvanized where prone to dampness.

2.6 BRADS

Bright steel of a length three times the thickness of the member being fixed. Use cadmium plated where prone to dampness.

2.7 SCREWS, STEEL

Bright steel of a length to penetrate the substrate up to the shank. Use stainless steel in wet areas.

2.8 SCREWS, CHROME PLATED

Chrome plated of a length to penetrate the substrate up to the shank.

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3 EXECUTION

Conditions

3.1 GENERALLY

To comply with NZS 3604, except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

3.2 STORAGE

Take delivery of trims undamaged and unmarked and store on site under cover, away from moisture, heat and direct sunlight in adequately ventilated area and clear of areas where work is in progress, to ensure materials are of the required standard when fixed in place.

3.3 ACCLIMATISE MATERIALS

Remove materials from packaging, separate and allow to acclimatise in the proposed installation area for 48 hours minimum prior to installation.

3.4 ENSURE

Ensure that the substrate to trims will allow work of the required standard. If it does not, do not proceed until the substrate has been remedied.

Application - Generally

3.5 INSTALL TIMBER TRIM

Use full lengths. Fit with scribed internal joints, mitred external joints and, mitred and returned at stop ends. Fix plumb, level and true to line and face using nails or brads to suit. Leave secure and with no movement possible.

3.6 INSTALL PROPRIETARY TRIM

Use full lengths. Scribe joint and fix securely, plumb, level and true to line and face to the trim manufacturer's requirements.

3.7 INSTALL PROPRIETARY METAL TRIM

Mitre and weld where direction changes. Fold and weld stop ends. Site measure and carry out all fabrication in a workshop. Screw fix securely, plumb, level and true to line and face, all as detailed.

Application - MDF trim

3.8 NAIL FIX

Use full lengths. Fit with scribed internal joints, mitred external joints and returned on itself at stop ends. Fix plumb, level and true to line and face using 40mm or 50mm brads to suit, ensuring fixing to a minimum depth of 25mm into framing timber. Leave secure and with no movement possible. Punch brads and fill with stopping compound to maintain the smooth surface.

3.9 ADHESIVE FIX

Use full lengths. Fit with scribed internal joints, mitred external joints and returned on itself at stop ends. Fix plumb, level and true to line and face using wallboard adhesive.

3.10 SCREW FIX

Use full lengths. Fit with scribed internal joints, mitred external joints and returned on itself at stop ends. Predrill pilot holes equal to shaft diameter, a minimum 25mm from ends and curves. Fix plumb, level and true to line and face using trim manufacturer's required fasteners or particleboard screws. Leave secure and with no movement possible.

Finishing

3.11 PUNCH

Punch all nail heads below the face of trim ready to receive stopping, as specified under painting preparation.

3.12 COUNTERSINK

Countersink screw heads not less than 2mm below the faces of trim to be painted. Stop and finish off flush with the face, as specified under painting preparation.

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3.13 PELLETING

Countersink screw head 6mm below the faces of trim which is to be clear finished. Glue in grain-matched pellets not less than 6mm thick and cut from matching timber. Finish off flush with the face.

Completion

3.14 LEAVE

Leave the whole of this work free of blemishes, undamaged and to the standard of finish required for following procedures.

3.15 PROTECTION

Protect the completed work and make good before any surface finish is applied.

3.16 REPLACE

Replace damaged or marked elements.

3.17 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

4.1 INTERNAL TIMBER TRIM

Refer to detail drawings

4.2 INTERNAL MDF TRIM

Refer to detail drawings

4.3 INTERNAL METAL TRIM

Refer to detail drawings

4.4 INTERNAL PROPRIETARY TRIM

Refer to detail drawings



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5171G GIB® PLASTERBOARD FIRE & SOUND LININGS

1 GENERAL

This section relates to the supply, fixing and jointing of **GIB®** plasterboard linings and accessories to timber and steel framed walls and ceilings to form:

- fire rated systems including lift shafts and ducting
- sound rated systems

1.1 RELATED WORK

Refer to 5113G GIB® PLASTERBOARD LININGS for standard linings

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

FRR	Fire resistance rating
IIC	Impact insulation class
STC	Sound transmission class
AWCI NZ	Association of Wall and Ceiling Industries New Zealand

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 2588	Gypsum plasterboard
AS/NZS 2589	Gypsum linings - Application and finishing
ISO 5660.1	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 1: Heat release rate (cone calorimeter method)
ISO 5660.2	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 2: Smoke production rate (dynamic measurement)

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

GIB® Site Guide (April 2024)
GIB® Noise Control Systems (September 2017)
GIB® Fire Rated Systems (September 2024)
GIB® Wet Area Systems (February 2021)
GIB Toughline® Aqua (July 2018)
GIB Rondo® Metal Batten System (September 2024)
GIB-Cove®
GIB RocTape®
GIB® Goldline™ Platinum Tape-on Trims
GIB UltraFlex® high impact corner mould
GIB® Tough Systems (November 2014)
BRANZ Appraisal 289 (2024) - GIB® Fire Rated Systems
BRANZ Appraisal 394 (2025) - GIB® Noise Control Systems

Manufacturer/supplier contact details

Company:	Winstone Wallboards
Web:	www.gib.co.nz
Telephone:	0800 100 442

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Requirements

1.5 NO SUBSTITUTIONS

Substitutions are not permitted to any specified GIB® systems, GIB® system components, GIB® plasterboard, associated GIB® products or GIB® accessories.

1.6 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 INSPECTIONS AND ACCEPTANCE

Allow for inspection of the finished plasterboard surface:

- before applying sealer and
- before applying finish coatings or decorative papers,

so that after assessment of the type and/or angle of illumination and its effect on the completed decorative treatment, group approval and acceptance of the surface can be given.

1.8 FIRE RATING REQUIREMENTS

Provide the GIB® fire rated systems. Refer to SELECTIONS for system/FRR.

1.9 SOUND INSULATION REQUIREMENTS

Provide the GIB® Noise Control Systems. Refer to SELECTIONS for system/STC. Include for forming and treating of perimeters of openings and penetrations in the elements to ensure the specified performance. Ensure absence of adjoining flanking paths.

Compliance

1.10 COMPLIANCE - BRANZ APPRAISAL 289

GIB® Fire Rated Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 289.

1.11 COMPLIANCE - BRANZ APPRAISAL 394

GIB® Noise Control Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 394.

Performance

1.12 SURFACE FIRE PROPERTIES - UNFINISHED BOARD

All GIB® unfinished plasterboard sheet materials achieve a Group Classification of, Group 1-S to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes, following testing in accordance with ISO 5660.1 and ISO 5660.2.

2 PRODUCTS

Materials

2.1 GIB® PLASTERBOARD

Gypsum plaster core encased in a face and backing paper formed for standard and water resistance use to AS/NZS 2588. Refer to SELECTIONS for location, type, thickness and finish.

GIB® Standard plasterboard
GIB Ultraline® high quality surface plasterboard
GIB Fyreline® fire resistant plasterboard
GIB Braceline® GIB Noiseline® dual purpose high density sound control plasterboard
GIB Aqualine® wet area plasterboard
GIB Toughline® plasterboard
GIB Toughline® Aqua plasterboard GIB (previously GIB Superline®)

Components

2.2 SCREWS

GIB® Grabber® High tread drywall screws.

GIB® Grabber® Self tapping drywall screws.
GIB® Grabber® Drill Point Fine Thread Screws.

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GIB® Grabber® Laminator screws.

2.3 GIB RAIL

GIB Rail® 70x13mm folded, galvanized mild steel rail used in GIB Noise Control wall systems.

2.4 GIB RONDO STWC RESILIENT CLIP

GIB® Rondo® STWC (ST-001 Clip) acoustic resilient mounting clip for metal wall and ceiling battens used in GIB Noise Control wall systems.

2.5 METAL SHAFTWALL FRAMING

GIB® Shaftwall framing comprising RONDO® CH stud, E stud and J track.

2.6 CONTROL JOINTS

GIB® Rondo® P35 control joints.

GIB® Goldline™ tape-on trims.

2.7 TAPE ON TRIMS AND EDGES

GIB® Goldline™ tape-on trims and edges or GIB® UltraFlex® high impact corner mould or GIB® Levelline® Tape on trim.

2.8 METAL ANGLE TRIMS

GIB® galvanized steel slim angle trims.

Accessories

2.9 ADHESIVE

Timber frame and/or steel frame:

GIBFix® One ultra low VOC water based wallboard adhesive.
GIBFix® All-Bond solvent based wallboard adhesive.

2.10 JOINTING COMPOUND

Bedding compound:	GIB Tradeset®, GIB Lite Blue®, GIB MaxSet®, GIB ProMix® All Purpose, GIB Plus 4®, GIB Trade Finish® Multi
Finishing compound:	GIB ProMix® All Purpose, GIB ProMix® Lite, GIB Trade Finish®, GIB Trade Finish® Lite, GIB Trade Finish® Multi, GIB® U-Mix, GIB Plus 4®
Cove:	GIB-Cove® Bond

2.11 JOINTING TAPE

GIB® Paper Joint Tape

GIB® RocTape®

2.12 ACOUSTIC/FIRE SEALANT

GIB Fire Soundseal™ low VOC highly flexible multi use acoustic sealant.

2.13 GAP FILLER

GIB® Gap Filler low VOC multi-purpose acrylic flexible filler.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.



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Framing substrates shall be in accordance to AS/NZS 2589, GIB® Site Guide and GIB Fire Rated System and/or GIB Noise Control System literature.

3.4 PRE-INSTALLATION REQUIREMENTS - TIMBER FRAMING

Check work previously carried out and confirm it is of the required standard for this part of the work.

Framing substrates shall be in accordance to AS/NZS 2589, GIB® Site Guide and GIB Fire Rated System and/or GIB Noise Control System literature.

Check timber framing moisture content is in accordance with requirements of AS/NZS 2589. Refer to NZBC E2/AS1 and GIB® Site Guide.

Timber framing:	18% maximum for fixing plasterboard to timber (8-12% recommended for fixing plasterboard to timber framing if air conditioning and/or central heating are to be installed)

3.5 LEVELS OF PLASTERBOARD FINISH

Provide the selected plasterboard surfaces to the pre decorative Levels of Finish specified in AS/NZS 2589.

3.6 CONFIRM LEVELS OF PLASTERBOARD FINISH ACCEPTANCE

Before commencing work, agree in writing upon the surface finish assessment procedure towards ensuring that the quality of finish expectations are reasonable and are subsequently obtained and acceptable.

Do not apply decorative treatment until it is agreed in writing by the contractor, subcontractors and decorator that the specified plasterboard Level of Finish has been achieved.

"Levels of plasterboard finish" is a tool for specifying the required quality of finish when installing and flush stopping GIB® plasterboard **prior** to the application of a range of decorative finishes under various lighting conditions. Refer to AS/NZS 2589.

3.7 PROTECTION

Protect surfaces; cabinetwork, fittings, equipment and finishes already in place from the possibility of water staining and stopping damage. Refer to GIB® Site Guide.

Application

3.8 LINING WALLS AND CEILINGS GENERALLY

Form to GIB® Site Guide and in accordance to relevant GIB Fire Rated or Noise Control System. Sheet joins are touch fitted and shall occur over framing where required by system requirements. Ensure bulk insulation thickness shall not exceed that of the wall framing.

3.9 BOARD ORIENTATION

Minimise joints by careful sheet layout using the largest sheet sizes possible. Ensure plasterboard orientation is in accordance to the relevant GIB Fire Rated or Noise Control System. Where a double layer of GIB plasterboard is required, ensure the outer sheets are offset from the inner layer in accordance with system requirements.

3.10 FORM SOUND INSULATION SYSTEMS

Form to GIB® Noise Control Systems.

3.11 FORM FIRE RATED SYSTEMS

Form to GIB® Fire Rated Systems and Penetrations in GIB® Fire Rated Systems.

3.12 FORM STEEL BEAM ENCLOSURES

Form to GIB® Fire Rated Systems.

3.13 RISERS, SHAFTS AND DUCTS

Form to GIB® Fire Rated Systems.

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3.14 FORM CONTROL JOINTS

Form control joints to AS/NZS 2589 and GIB® Site Guide (September 2018).

3.15 INSTALL TAPE-ON TRIMS

Install to GIB® Goldline™ Tape-on trims literature and/or GIB® Ultraflex® high impact corner mould literature and/or GIB® Levelline® to GIB® Site Guide (September 2018).

Finishing

3.16 FINISHING GENERALLY

To GIB® Site Guide and AS/NZS 2589.

Completion

3.17 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.gib.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Noise control intertenancy wall systems

4.1 GIB® NOISE CONTROL, INTERTENANCY WALL - STAGGERED STEEL /CENTRAL BARRIER

Location:	Refer to Drawings
System:	(non-load bearing) Refer to GIB® Fire/Noise Control Systems for specification details
Acoustics:	STC / Rw Refer to Drawings for noted STC by Plus Studio based on the STC levels proposed and issued to the main contractor. Refer to agreed intertenancy requirements between Contractor and Client
Framing:	Refer to Drawings Refer to Gib Technical information
Insulation:	R1.2 Pink Batts (50mm) glass wool
Lining:	Refer to Drawings
Central barrier:	Refer to Drawings
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

4.2 GIB® NOISE CONTROL, INTERTENANCY WALL - SINGLE TIMBER FRAMING

Location:	Refer to Drawings
System:	(non-load bearing) Refer to GIB® Noise Control Systems for specification details
Acoustics:	STC / Rw Refer to Drawings for noted STC by Plus Studio based on the STC levels proposed and issued to the main contractor. Refer to agreed intertenancy requirements between Contractor and Client
Framing:	Refer to Drawings Refer to Gib Technical information
Insulation:	Refer to GIB® Noise Control Systems for details
Lining:	Refer to GIB® Noise Control Systems for details
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

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4.3 GIB® NOISE CONTROL, INTERTENANCY WALL - SINGLE STEEL FRAMING

Location:	Tenancy Walls between office spaces **Locations and requirements TBC with firms moving into the building and with client**
System:	Refer to GIB® Noise Control Systems for specification details: System code, load bearing or non-load bearing / STC/Rw and FRR .
Acoustics:	STC / Rw Refer to Drawings for noted STC by Plus Studio based on the STC levels proposed and issued to the main contractor. Refer to agreed intertenancy requirements between Contractor and Client
Framing:	Refer to requirements TBC with firms moving into the building and with client Refer to GIB® Noise Control Systems for details: steel frame with GIB Rail and acoustic resilient mount / staggered steel studs / GIB Rondo Quiet Stud
Insulation:	Refer to GIB® Noise Control Systems for details
Lining:	Refer to GIB® Noise Control Systems for details
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

Noise control sub-intertenancy wall systems

4.4 GIB® NOISE CONTROL, SUB-INTERTENANCY WALL - SINGLE QUIET STUD

Location:	Tenancy Walls between office spaces **Locations and requirements TBC with firms moving into the building and with client**
System:	Refer to GIB® Noise Control Systems for specification details: System code, load bearing or non-load bearing / STC/Rw and FRR .
Acoustics:	STC / Rw Refer to Drawings for noted STC by Plus Studio based on the STC levels proposed and issued to the main contractor. Refer to agreed intertenancy requirements between Contractor and Client
Framing:	GIB Rondo Quiet Stud 92mm wide
Insulation:	Pink Batts R2.2 (90mm) glass wool insulation
Lining:	Refer to GIB® Noise Control Systems for details
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

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4.5 GIB® NOISE CONTROL, SUB-INTERTENANCY WALL - SINGLE STEEL FRAMING

Location:	Tenancy Walls between office spaces **Locations and requirements TBC with firms moving into the building and with client**
System:	Refer to GIB® Noise Control Systems for specification details: System code, load bearing or non-load bearing / STC/Rw and FRR .
Acoustics:	STC / Rw Refer to Drawings for noted STC by Plus Studio based on the STC levels proposed and issued to the main contractor. Refer to agreed intertenancy requirements between Contractor and Client
Framing:	Steel frame
Insulation:	Pink Batts R1.8 (75mm) glass wool insulation
Lining:	Refer to GIB® Noise Control Systems for details
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

4.6 GIB® NOISE CONTROL, SUB-INTERTENANCY WALL - SINGLE TIMBER FRAMING

Location:	Ground Floor Level sub-intertenancy Walls
System:	Refer to GIB® Noise Control Systems for specification details: System code, load bearing or non-load bearing / STC/Rw and FRR .
Acoustics:	STC / Rw Refer to Drawings for noted STC by Plus Studio based on the STC levels proposed and issued to the main contractor. Refer to agreed intertenancy requirements between Contractor and Client
Framing:	Timber frame
Insulation:	Pink Batts R2.2 (90mm) glass wool insulation
Lining:	Refer to GIB® Noise Control Systems for details
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

Fire rated wall systems

4.7 GIB® SMOKE SEPARATION WALL - TIMBER / STEEL FRAMING

Location:	Refer to Drawings
System:	GBSm 10 (load bearing)
FRR:	10/10/10
Lining:	1 x 10mm GIB plasterboard each side
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

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4.8 GIB® FIRE RATED WALL SYSTEMS, TWO-WAY - TIMBER FRAMING

Location:	Refer to Drawings
System:	Refer to GIB® Fire Rated Systems for specification details: System code, load bearing or non-load bearing / FRR / STC & Rw
FRR:	Refer to Drawings -/120/120 -/60/60 -/30/30
Acoustic:	Refer to GIB® Fire Rated Systems for specification details: System code, load bearing or non-load bearing / FRR / STC & Rw
Framing:	Timber
Lining:	Refer to GIB® Fire Rated Systems for details
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

4.9 GIB® FIRE RATED WALL SYSTEMS, TWO-WAY - STEEL FRAMING

Location:	Refer to Drawings
System:	Refer to GIB® Fire Rated Systems for specification details: System code, load bearing or non-load bearing / FRR / STC & Rw
FRR:	Refer to Drawings -/120/120 -/60/60 -/30/30
Acoustic:	Refer to GIB® Fire Rated Systems for specification details: System code, load bearing or non-load bearing / FRR / STC & Rw Generally systems do not include acoustic insulation however some sections can include insulation to increase acoustic performance. - Example is the Ground Level wall between meeting rooms and fire egress corridor path
Framing:	Steel
Lining:	Refer to GIB® Fire Rated Systems for details
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

Fire rated risers, shafts and ducts

4.10 GIB® FIRE RATED VENTS - SHAFTWALL

Location:	Refer to Drawings (mostly to these locations) - Lift shaft - Risers
System:	Refer to GIB® Fire Rated Systems for details - **GBSH60b**
FRR:	Refer to GIB® Fire Rated Systems for details - **GBSH60b**
Acoustics:	Refer to GIB® Fire Rated Systems for details
Framing:	Rondo CH Stud, E stud and J-Track
Insulation:	min 50mm thick glass fibre insulation density 9.6kg.m3
Lining shaft side:	2 x 13mm GIB Fyreline®
Lining landing side:	Refer to GIB® Fire Rated Systems for details **GBSH60b**
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

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Fire rated protection of columns & beams

4.11 GIB® FIRE RATED PROTECTION COLUMNS & BEAMS - TIMBER STRAPPING

- Location:	Fire Rating columns and **beams** - ***Main Contractor to confirm approach to fire rated these aspects in lining***
	Details - refer to A1020 drawing for intent
System:	Refer to drawings - Refer to GIB® Fire Rated Systems for details
FRR:	Refer to drawings
Strapping:	Timber - min 35mm nominal thickness
Lining:	**GBCBT 60 -** 2 x 13mm GIB Fyreline® **GBCBT 120** - 2 x 19mm GIB Fyreline®
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

4.12 GIB® FIRE RATED PROTECTION COLUMNS & BEAMS - STEEL CLIP & CHANNEL

-	Fire Rating columns and **beams** - ***Main Contractor to confirm approach to fire rated these aspects in lining***
- Location:	
	Details - refer to A1020 drawing for intent
System:	Refer to drawings - Refer to GIB® Fire Rated Systems for details
FRR:	Refer to drawings
Strapping:	Rondo 140 Perimeter channel & clip (BMCL). Also Rondo Perimeter Angle (NZ18) for beams exposed on 3-sides.
Lining:	**GBCBS 60** - 2 x 13mm GIB Fyreline® **GBCBS 120** - 2 x 19mm GIB Fyreline®
Finish level:	Generally, use Level 4 in exposed locations. Use Level 3 only for areas that do not require decoration such as non-exposed areas, behind tiling etc

Accessories

4.13 GIB® TAPE ON EDGE AND CORNER TRIMS

Brand/type: Refer to manufacturer's technical information

4.14 GIB® EDGE PROFILES

Brand/type: Refer to manufacturer's technical information

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5171HI JAMES HARDIE® INTERNAL FIRE & ACOUSTIC WALL SYSTEMS

1 GENERAL

This section relates to the supply and installation of **James Hardie®** two way fire and acoustic rated, fully internal wall systems for timber framed walls.
It includes;

- linings
- insulation
- associated components and accessories necessary to complete the system

This section is intended to be combined, as appropriate with the other related work sections. Refer to RELATED WORK clause.

1.1 RELATED WORK

Refer to 5111H JAMES HARDIE® FIBRE CEMENT SHEET LININGS for Villaboard™ Lining

Refer to 5171G GIB® PLASTERBOARD FIRE & SOUND LININGS for GIB Fyreline®
Refer to related INSULATION section for insulation
Refer to 4231HI JAMES HARDIE® EXTERNAL FIRE & ACOUSTIC WALL SYSTEMS for two way fire rated external walls
Refer to 5438HI JAMES HARDIE® SECURA™ FIRE & ACOUSTIC FLOOR SYSTEM for two way fire rated internal floors

1.2 ABBREVIATIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

FRR	Fire resistance rating
STC	Sound transmission class

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
AS/NZS 2588	Gypsum plasterboard
NZS 3602	Timber and wood based products for use in building
NZS 3603	Timber Structures Standard
NZS 3604	Timber-framed buildings
AS/NZS 1170.2: 2011	Structural design actions - Wind actions
AS/NZS 1170.5	Structural design actions - Earthquake actions

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

James Hardie Fire and Acoustic Design Manual, May 2025
GIB® Fire Rated Systems - Specification and installation manual (October 2018)
Villaboard™ Lining Installation Manual
BRANZ Appraisal 1285 (2025) - James Hardie Fire And Acoustic Wall Systems - Amended 16 June 2026

Manufacturer/supplier contact details

Company:	**James Hardie New Zealand Limited**
Web:	www.jameshardie.co.nz
Email:	info@jameshardie.co.nz
Telephone:	Ask James Hardie™ on 0800 808 868

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Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

15 years:	For James Hardie® products
15 years:	For accessories supplied by James Hardie® (refer to James Hardie® product warranty)
10 years	For all GIB® products and systems installation (refer to Winstone Wallboards product warranty)

- Provide warranty on the manufacturer's standard form/s.
- Commence the warranty from the date of purchase.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 SAFE WORKING

To James Hardie® requirements for safe working practices with James Hardie® products, particularly with regards to cutting and drilling.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any James Hardie® specified system, or associated components and products.

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Provide relevant James Hardie® maintenance requirements at completion of the work. Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the information.

Performance

1.10 INSPECTIONS AND ACCEPTANCE

Refer to the appropriate lining section for inspection criteria of the finished plasterboard surface:

- before applying sealer
- before applying finish coatings or decorative papers

1.11 SOUND INSULATION REQUIREMENTS

Refer to SELECTIONS for system details and STC ratings. Refer to the relevant Manufacturer's literature to ensure correct forming and treating of penetrations to ensure the specified performance is met. Ensure absence of adjoining flanking paths.

1.12 FIRE RATING REQUIREMENTS

Provide the James Hardie® fire rated system. Refer to SELECTIONS for system FRR details.

1.13 SURFACE FIRE PROPERTIES - UNFINISHED BOARD

Group Number to NZBC C/AS2, James Hardie internal unfinished linings have been tested/assessed by BRANZ and they have a ‘Group Number 1-S’. This classification only applies to James Hardie fibre cement lining products without paint or wet finish.

1.14 BRACING REQUIREMENTS

Refer to James Hardie® Bracing Design Manual for bracing requirements combined with the fire and acoustic systems.

Compliance information

1.15 COMPLIANCE - BRANZ APPRAISAL

James Hardie Internal Fire & Acoustic Wall Systems have been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of BRANZ Appraisal 1285.

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Quality control and assurance

1.16 INSPECTIONS

the Contractor is required to carry out or engage consultants to carry out inspections of parts of the work. It will typically be expected that the person carrying out the inspections will be required to provide producer statements in support of the work carried out.

2 PRODUCTS

Materials

2.1 TIMBER FRAMING

Refer to appropriate timber framing section.

2.2 JAMES HARDIE® VILLABOARD™ LINING

Refer to 5111H JAMES HARDIE® FIBRE CEMENT SHEET LININGS for Villaboard™ Lining. Refer to SELECTIONS for thickness.

2.3 GIB® PLASTERBOARD LINING

GIB Fyreline®, fire resistant plasterboard to AS/NZS 2588. Refer to 5171G GIB® PLASTERBOARD FIRE & SOUND LININGS for GIB Fyreline®. Refer to SELECTIONS for thickness.

2.4 INSULATION - JAMES HARDIE® MINERAL INSULATION

James Hardie® Mineral insulation, 90mm thick, R 2.74m²K/W, density 80kg/m3.

2.5 INSULATION - FIBREGLASS

Refer to the appropriate separate insulation section(s). Fibreglass insulation 90mm thick, density 12-18 kg/m3,minimum R2.2.

Components

2.6 FIXINGS - VILLABOARD

Fixings for Villaboard™ refer to SELECTIONS.

2.7 FIXINGS - GIB FYRELINE® LINING

Fixings for GIB Fyreline®, 41mm x 6g GIB® Grabber® High Thread Drywall Screws.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

3.4 FRAMING - GENERAL

Ensure framing sizes and set-out suit the selected fire and acoustic rated wall system, plumb, level and in true alignment.

Moisture content of timber framing: ~% maximum to NZS 3602

3.5 TIMBER FRAMING - SPECIFIC ENGINEERING DESIGN

Refer to appropriate TIMBER FRAMING section. Timber framing to specific engineering design (SED) to AS/NZS 1170.2, NZS 1170.5 and NZS 3603 and to selected James Hardie® fire and acoustic system requirements.

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Application - general

3.6 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.7 STRUCTURAL STEEL MEMBERS IN FIRE RATED WALL

Independently fire rate structural steel members inside the fire rated wall cavity. Refer to appropriate STEELWORK FIRE RATED COATINGS section for intumescent paints.

3.8 CO-ORDINATE PENETRATIONS

Co-ordinate installation of fire collars and fire sealants with penetrations through fire rated walls.

3.9 JAMES HARDIE MINERAL INSULATION

Fit pre-cut James Hardie Mineral insulation tightly in framing cavities to achieve a tight friction fit. If cutting is required ensure that insulation is at least 50mm bigger in each direction than the size of frame cavity to be filled.

3.10 FIBERGLASS INSULATION

Refer to related insulation section.

3.11 JAMES HARDIE® VILLABOARD

Refer to James Hardie® Fire and Acoustic Design Manual and Cladding technical specification for system fixing requirements.

3.12 GIB FYRELINE® LINING

Install GIB Fyreline® linings to Winstone Wallboards technical literature and to James Hardie® system installation instructions.

3.13 SEAL PENETRATIONS

Seal penetrations through fire rated walls in accordance with the technical information from the fire sleeve/collar supplier and James Hardie requirements.

Completion & Commissioning

3.14 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

3.15 COMPLETION - TESTS & CERTIFICATION

Refer to 1270 CONSTRUCTION for general test and certification requirements at completion.

4 SELECTIONS

For further details on selections go to www.jameshardie.co.nz
Substitutions are not permitted to the following.

Internal two way FRR & acoustic wall system - timber framed wall

4.1 JAMES HARDIE® FRR 60/60/60 & ACOUSTIC SYSTEM - INTERNAL TIMBER WALL - VILLABOARD™ / GIB

Location:	Ground Level - Egress Path onto Five Mile Lane - Details on A1016
Brand:	James Hardie® Fire & Acoustic system
System #:	JHITGV60
FRR:	60/60/60
STC:	42
Framing size:	Refer to drawings
Insulation:	90mm James Hardie® Mineral insulation
Lining:	Villaboard™ Lining to one side, 13mm GIB Fyreline® to other
Villaboard™ fixing:	30mm x 7g Villadrive screws or 40mm x 2.8mm fibre cement nails at 150mm maximum centres
GIB fixing:	41mm x 6g GIB® Grabber® High Thread Drywall Screws

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4.2 JAMES HARDIE® FRR 60/60/60 & ACOUSTIC SYSTEM - INTERNAL TIMBER WALL - VILLABOARD EACH SIDE

Location:	Basement - BOH Area
Brand:	James Hardie® Fire & Acoustic system
System #:	JHITVV60
FRR:	60/60/60
STC:	N/A
Framing size:	Refer to drawings
Insulation:	90mm James Hardie® Mineral insulation
Lining:	9mm Villaboard™ Lining each side
Villaboard™ fixing:	30mm x 7g Villadrive screws or 40mm x 2.8mm fibre cement nails at 150mm maximum centres

NOTE: Refer to drawings for which side of wall the lining types are used.



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5211PP POTTER ALUMINIUM INTERNAL PARTITIONS

1 GENERAL

This section relates to the supply and installation of **Potter Interior Systems** Aluminium Partitioning.

1.1 RELATED WORK

Refer to 5211P POTTER STEEL STUD FRAMING for light steel framing.

Refer to glazing section/s for glass type and thickness.
Refer to 4711 THERMAL INSULATION for thermal insulation materials
Refer to 4721 ACOUSTIC INSULATION for acoustic insulation materials
Refer to 5113 PLASTERBOARD LININGS for plasterboard linings
Refer to 5231 INTERIOR DOORS AND WINDOWS for doors

1.2 ABBREVIATIONS AND DEFINITIONS

The following abbreviations are used throughout this part of the specification:

BMT	Base Metal Thickness
FRR	Fire Resistance Rating
STC	Sound Transmission Class
AWCINZ	Association of Wall and Ceiling Industries of New Zealand

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC G6/AS1	Airborne and impact sound
AS/NZS 1170.1	Structural design actions - Permanent, imposed and other actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS 1530.4:2005	Methods for fire tests on building materials, components and structure - Fire-resistance tests for element of construction
AS/NZS 1866	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow
AS/NZS 2588	Gypsum plasterboard
AS/NZS 2589	Gypsum linings - Application and finishing
NZS 4219	Seismic performance of engineering systems in buildings
NZS 4223.1	Glazing in buildings - Glass selection and glazing
AS/NZS 4600:2005	Cold-formed steel structures

1.4 MANUFACTURER DOCUMENTS

Manufacturer and supplier documents relating to work in this section are:

Potter Interior Systems Aluminium Partitions Specifier Manual
Standard specification for Potter Aluminium Systems
Rondo Building Services Pty Ltd Steel stud and track system
Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide
TRACKLOK® Seismic Bracing Guide- Partitions and Ceilings August 2021- Edition 2.

Copies of the above literature are available from:

Company:	**Potter Interior Systems**
Web:	www.potters.co.nz
Email:	specsupport@potters.co.nz
Telephone:	0800 POTTER (0800 768 837)

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

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5 years installation	For Potter Aluminium Systems and in no way involves the quality of the
10 years	For Rondo branded products against defects in materials under normal use.

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of purchase.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

~ years	For installation of Potter Aluminium Systems

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.
- The installer to issue PS3 confirming that the system has been installed in accordance with Potters installation requirements and if applicable, reviewed shop drawings.

Requirements

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

1.8 QUALIFICATIONS

Installers to be experienced in the installation of internal partitions and able to provide either of the following:

- a BCITO interior partition accreditation
- an AWCINZ membership number
- evidence of experience, listing completed projects of similar size and complexity

1.9 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not be limited to:

- Plans of each floor showing all essential elements and dimensions.
- Elevations of all partitions indicating type, individual materials and finishes.
- Details of all junctions within the partitioning system and between the partitions and surrounding elements.
- Details of all fixing methods and systems.
- Confirmation of all required fire and acoustic ratings, including associated baffles to ceiling/floor spaces.
- All associated services.
- All hardware and accessories.

If requested provide the following additional information:
~

Submit shop drawings for review to ~.

- ~ working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication and/or installation.

1.10 INSPECTIONS - MANUFACTURER

Contractor to notify Potters during construction to undertake an on-site installation QA check and to issue a statement with any findings and/or defects and whether the installation and fabrication has been done in accordance with the reviewed shop drawings.

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Performance

1.11 LOADING CODE REQUIREMENT

To AS/NZS 1170.1, NZS 1170.5, AS/NZS 4600, NZS 4219.

1.12 SEISMIC - SPECIFIC DESIGN

Design the system and its anchorages/fixings to resist the earthquake loads of the seismic zone in accordance with NZS 1170.5. Refer to general section 1220 PROJECT for details. Contact Potter Interior Systems if an engineering design service and a Producer Statement - Design (Third Party Engineer PS1) for code compliance documents is required.

1.13 LOAD-CARRYING MEMBERS

Select sections that will satisfy the transverse, dead and live load requirements by complying with the manufacturer design data. To AS/NZS 1170.1.

2 PRODUCTS

Materials - aluminium framed partitions

2.1 POTTER ALUMINIUM FRAMED PARTITION SYSTEM (PAS)

Alloy designation to comply with AS/NZS 1866. Aluminium sections branded and extruded for anodising or powder coating. Door sections complete with PVC or vinyl inserts. Glazing frames complete with glazing gaskets. Refer to SELECTIONS for complete partition system options.

Components

2.2 POTTERS ALUMINIUM DOORS AND SLIDERS - DS SERIES

Refer to SELECTIONS for options.

2.3 GLASS

Refer to glazing sections.

2.4 GLAZING GASKETS

Thermoplastic rubber.

2.5 SETTING BLOCKS

Neoprene 80-90 Shore hardness, set at quarter points. All to comply with NZS 4223.1, Section 4 Glazing.

2.6 SEISMIC PARTITION TIE

Internal partition bracing system incorporating TRACKLOK® seismic partition ties (steel and rubber components) with steel studs (used as angled bracing), to brace the partition ceiling level section to the underside of the floor above. Designed to avoid ceiling grid interaction and absorb seismic energy. Refer to SELECTIONS.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

Store materials and accessories on a level, firm base, in dry conditions, well ventilated, out of direct sunlight and completely protected from weather and damage. Ensure storage areas are away from current work areas. Cover to keep dry until fixed.

Avoid distortion and contact with potentially damaging surfaces/substances. Do not drag components across each other, or across other materials. Protect edges, corners and surfaces from damage.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

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Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 SITE CONDITIONS

Do not begin installation until the building is closed in, fully glazed and the roof weathertight.

3.4 ADJOINING SURFACES

Do not commence work until the adjoining structure and/or surfaces are of a standard required by the manufacturer for the specified installation; plumb, level and in true alignment.

3.5 SETTING OUT

Set out the partitioning work true to line and square, before starting erection.

3.6 PROTECT

Protect surfaces, cabinetwork, fittings, equipment and finishes already in place from the possibility of damage during the building process.

Installation

3.7 INSTALLATION GENERALLY

Fabricate and install in accordance with Potter Interior Systems installation instructions.

Installation to comply with the loadings code AS/NZS 1170 and NZS 1170.5. Installation to comply with the requirements of NZS 4219; with related building services installations complying specifically with clauses 5.9, 5.13 and 5.14.

3.8 ALUMINIUM PARTITION ERECTION

Set out true to line and square before commencing erection. Carry out all fixing, erection and fitting to finish rigid, plumb, square and true to line and face. All to Potter Interior Systems installation instructions.

Fit floor and ceiling channels square and true to line. Butt joint corners and intersections. Before fixing apply suitable barriers of bituminous coatings, stops or underlays between dissimilar metals in contact, or between aluminium in contact with concrete.

3.9 INSTALL SEISMIC PARTITION TIE

Install TRACKLOK® seismic partition ties and steel (bracing) studs in accordance with TRACKLOK Ltd requirements and details. Select and install appropriate seismic partition tie to suit situation.

3.10 POTTER DS SERIES ALUMINIUM DOORS AND SLIDERS

Install in accordance with Potter Interior Systems installation requirements, complete with all hinges, Potter sliding door gear and door furniture as specified and as per the following minimum specification requirements:

- UC braces to be used when screwing stile and rail together.
- For a bottom roller slider system, Nylon BRG nylon blocks must be used in the top of the aluminium door leaf to guide door within top door track.
- For a bottom roller corner meeting sliders, detail required on how to stop doors at meeting point
- Glazing in hinged aluminium door must be installed in a ‘heel to toe’ manner for glazing to act as a brace and to transfer the weight of the glazing back to the hinges / jamb.
- Minimum 4 hinges recommended.
- DS 130 system requires lintel support for doors over 1200mm wide x 2700mm high.
- All top hung door systems require a lintel support.

3.11 GLAZING

Install in accordance with Glazing Manufacturer installation instructions.

3.12 PLUMBING AND ELECTRICAL SERVICES

Fix, erect and fit to Manufacturer installation instructions.



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Completion

3.13 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.potters.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Materials - aluminium framed partitions

4.1 POTTER ALUMINIUM FRAMED PARTITION WALL - A SERIES 132 SYSTEM - 92MM STEEL STUD OR 90MM TIMBER STUD

System:	A Series 132
Stud size:	92mm steel stud
Mullion size:	132mm x 53mm
Jamb to glazing:	600mm screw centres (for standard door weights)
Wall type/size:	92mm steel stud with one layer plasterboard on each side
Lining thickness:	13mm plasterboard
Glass thickness:	13mm acoustic glazing
Door type/size:	Aluminium, 37mm
Hinge No:	4 per door
Finish/colour:	Powder coating, colour TBC

4.2 POTTER ALUMINIUM FRAMED PARTITION WALL - A SERIES 132 SYSTEM - 150MM STEEL STUD OR 140MM TIMBER STUD

Location:	Refer to architectural plans
System:	A Series 132
Stud size:	140mm timber stud
Mullion size:	132mm x 53mm
Jamb to glazing:	600mm screw centres for standard door weights
Wall type/size:	140mm timber stud with one layer plasterboard on each side
Lining thickness:	13mm plasterboard
Glass thickness:	13mm acoustic glazing
Door type/size:	Aluminium, 37mm
Hinge No:	4 per door
Finish/colour:	Powder coating, colour TBC

4.3 POTTER ALUMINIUM FRAMED PARTITION WALL - C SERIES 45 SYSTEM - 92MM STEEL STUD OR 90MM TIMBER STUD

Location:	Refer to architectural plans
System:	C Series 45
Stud size:	92mm steel stud
Profile size:	45mm wide x 25mm high
45 profile types:	PAS601 flat bar
Wall type:	92mm steel stud with one layer plasterboard on each side
Lining thickness:	13mm plasterboard
Glass thickness:	13mm acoustic glazing
Door type/size:	Aluminium, 37mm
Hinge No:	4 per door
Finish/colour:	Powder coating, colour TBC

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4.4 POTTER ALUMINIUM FRAMED PARTITION WALL - E SERIES 132 SYSTEM - 92 STEEL STUD OR 90MM TIMBER STUD

Location:	Refer to architectural plans
System:	E Series 132
Stud size:	92mm steel stud
Mullion size:	132mm x 53mm
Wall type:	92mm steel stud with one layer plasterboard on each side
Lining thickness:	13mm plasterboard
Glass thickness:	13mm acoustic glazing
Door type/size:	Aluminium, 37mm
Hinge No:	4 per door
Finish/colour:	Powder coating, colour TBC

4.5 POTTER DS SERIES ALUMINIUM HINGED DOORS

Location:	Refer to architectural plans
Stile size:	100-D
Mortice lock:	38mm backset
Mid rail size:	n/a
Rail size:	100mm
Glass thickness:	13mm acoustic glazing
Finish/colour:	Powder coating, colour TBC
Acoustic seals:	Raven RP10si perimeter, RP8si dropdown

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5211RD RONDO STUD & TRACK WALL FRAMING SYSTEM

1 GENERAL

This section relates to the supply and installation of **Rondo Building Services Pty Ltd** Rondo steel stud and track sections, for internal light steel wall framing forming a Rondo steel stud drywall framing system, and Rondo masonry wall batten system.

Deflection heads and seismic bracing to walls is to be worked through with the seismic engineer. Refer to documentation that notes typical Deflection Head Details for acoustic and fire rated walls

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

BMT	Base Metal Thickness
FRR	Fire Resistance Rating
STC	Sound Transmission Class

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 1170.1	Structural design actions - Permanent, imposed and other actions
AS/NZS 1170.2: 2011	Structural design actions - Wind action
AS/NZS 1170.5	Structural design actions - Earthquake actions
AS 1397	Continuous hot dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS/NZS 2588	Gypsum plasterboard
NZS 4219	Seismic performance of engineering systems in buildings
AS/NZS 4600:2005	Cold-formed steel structures
ISO 140	Acoustics - Measurement of sound insulation in building and of building elements - Part 4: Field measurements of airborne sound insulation between rooms

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Rondo Acoustic Wall & Ceiling Systems Manual
Rondo Duplex Stud System - Internal door, wall & glazing stud Framing booklet
Rondo Professional Design Manual
Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide
Rondo Steel Stud Installation Guide

Manufacturer/supplier contact details

Company:	**Rondo Building Services Pty Ltd**
Web:	www.rondo.co.nz
Email:	Steve.Hardy@rondo.co.nz
Telephone:	09 636 5110

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For Rondo branded products against defects in materials under normal use.

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- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of purchase

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS

Work to be carried out by trades people experienced, competent and familiar with the materials and techniques specified.

Compliance information

1.6 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer / supplier warranty
- Producer Statement (PS3) - Construction from the applicator / installer
- Producer Statement (PS4) - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.

Performance

1.7 LOADING CODE REQUIREMENT

To AS/NZS 1170.1, AS/NZS 1170.2, NZS 1170.5, AS/NZS 4600, NZS 4219.

1.8 LOAD-CARRYING MEMBERS

Select sections that will satisfy the transverse, dead and live load requirements by complying with the manufacturer design data. To AS/NZS 1170.1, AS/NZS 1170.2 and NZS 1170.5

1.9 FIRE RATING REQUIREMENT

Refer to appropriate lining board manufacturer technical literature for detailed instructions on installation of fire-rated drywall systems.

1.10 ACOUSTIC REQUIREMENT

To ISO 140. Include all openings and penetrations and ensure absence of adjoining leak paths. Refer to appropriate lining board manufacturer technical literature for detailed instructions on installation of acoustic drywall systems.

1.11 CERTIFICATION

Provide certificates and other evidence that the system complies with the standards of performance specified.

2 PRODUCTS

Materials

2.1 FURRING CHANNEL

Furring channels to AS/NZS 4600. Steel Grade and zinc coating class G2 Z275 to AS 1397.

2.2 FURRING CHANNEL CLIPS

Furring channel clips, refer to SELECTIONS.

2.3 STEEL STUD SECTIONS

Rondo stud sections to AS/NZS 4600. Steel Grade and zinc coating class G2 Z275 to AS 1397 with preformed service holes to stud webs and a range of BMT options. Refer to SELECTIONS for type.

2.4 STEEL TRACK SECTIONS

Rondo track sections to AS/NZS 4600. Steel Grade and zinc coating class G2 Z275 to AS 1397 with a range of widths and BMT options. Refer to SELECTIONS for type.

2.5 NOGGING TRACK

Rondo nogging track to AS/NZS 4600. Steel Grade and zinc coating class G2 Z275 to AS 1397, with preformed holes for studs and services. Refer to SELECTIONS.

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2.6 FAST-FIX NOGGING

Rondo FAST-FIX Nogging® to AS/NZS 4600. Steel Grade and zinc coating class G2 Z275 to AS 1397.

2.7 TOP HAT SECTION

Rondo steel top hat section, refer to SELECTIONS.

2.8 PARTITION MOUNT

704 partition Mount.

2.9 WEB CLEATS

Web cleat, 3.0mm thick, Steel Grade and zinc coating class G2 Z275 to AS 1397. Refer to SELECTIONS for type.

2.10 ACCESS PANEL

Refer to SELECTIONS.

2.11 DOOR AND WINDOW SECTIONS

Pre-finished fixings and framing members for window and door framing.

Components

2.12 FIXINGS

Refer to SELECTIONS.

2.13 TIMBER NOGS

Refer to SELECTIONS.

Used to provide support to cupboards, hand rails, televisions etc. Do not use CCA treated timber.

2.14 NOGGING BRACKET

Rondo 501 metal nogging bracket.

The nogging bracket is available in 2.4 m lengths and can be cut to suit extent of 17mm thick plywood required. The bracket is screw fixed to the stud, the plywood is then fixed to the bracket

2.15 PLYWOOD NOGS/BACKING

17mm thick plywood fixed to studs with Rondo nogging bracket. Do not use CCA treatment.

Accessories

2.16 ACOUSTIC SEALANT

Acoustic sealant and seals to NZBC G6/AS1. Refer to SELECTIONS for location and type.

Finishes

2.17 FINISHES

Refer to SELECTIONS for type.

3 EXECUTION

Conditions

3.1 DELIVERY

Keep products dry in transit. Take delivery of products dry and undamaged. Reject all damaged product.

3.2 STORAGE

Store materials and accessories on a level, firm base, in dry conditions, protected from weather and damage. Cover to keep dry and protect from airborne contaminants such as acid and salt spray.

3.3 HANDLING

Avoid distortion and contact with potentially damaging surfaces/substances. Do not drag Rondo steel stud framing across each other, or across other materials. Protect edges, corners and surfaces from damage.



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3.4 SUBSTRATE

Do not commence work until the substrate is of the standard required by the Rondo steel framing system for the specified installation, plumb, level and in true alignment.

3.5 PROTECT

Protect surfaces, cabinetwork, fittings, equipment and finishes already in place from the possibility of damage during the building process.

3.6 SETTING OUT

Set out the framing work true to line and square with allowance for wall linings, before starting erection.

Application

3.7 INSTALLATION - GENERAL

Installation to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide, Rondo Professional Design Manual and Rondo Building Services Pty Ltd requirements. Fix, erect and fit to finish rigid, plumb, square and true to line and face.

3.8 ISOLATE

Isolate dissimilar metals with neoprene sheeting, tape or pipe lagging.

Steel Stud Drywall Framing System

3.9 TOP & BOTTOM TRACK SECTIONS

Fit top and bottom tracks in position with fasteners at 600mm maximum centres and 100mm from the track ends.

3.10 STUDS

Cut studs to length to suit requirements of track section type. Fit studs into the top and bottom tracks with the service holes starting from the bottom. Rotate the stud into position with studs orientated in the same direction.

3.11 STUDS & NOGGING TRACK

Cut studs to length to suit requirements of track section type. Fit nogging track into bottom track with flanges facing the floor. Fit studs into pre-punch holes in the nogging track and into both the top and bottom tracks with the service holes starting from the bottom. Rotate the stud into position with studs orientated in the same direction. Lift and position nogging track and screw or crimp noggings to both flanges of the studs.

3.12 QUIET STUD & NOGGING TRACK

Install to Rondo Building Services Pty Ltd requirements. Cut out nogging track flanges to provide a 3mm minimum clearance to studs each side when installed. Install track to the side of stud with the widest web profile. Provide two rivets per stud/track connection.

3.13 OPENINGS

Frame up openings to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide and Rondo Professional Design Manual. Refer to SELECTIONS for stud type and configuration.

3.14 FAST-FIX NOGGING

Fix to Rondo Building Services Pty Ltd requirements.

3.15 TIMBER NOGS

Prepare and position timber nogs and screw fix to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide and Rondo Professional Design Manual.

3.16 PLYWOOD NOGS/BACKING

Cut nogging bracket to length, position and screw fix to studs, screw fix plywood to nogging bracket to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide and Rondo Professional Design Manual.



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3.17 WEB CLEAT

Fix, erect and fit to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide and Rondo Professional Design Manual.

3.18 ADDITIONAL SERVICE HOLES

Form additional service holes if required to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide and Rondo Professional Design Manual, using a hole saw or similar. Fit grommets to holes.

3.19 GROMMETS

Fit grommets to all service holes that are not bell-mouthed. Fit grommets to all service holes including bell-mouthed holes which contain water pipes.

3.20 STUD NOTCHING

Notch studs to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide and Rondo Professional Design Manual. Install Rondo top hat section or angle to notch locations, refer to SELECTIONS.

3.21 WINDOW AND DOOR FRAMING

Fix, erect and fit window and door framing to drawings and to manufacturers' requirements.

3.22 PLUMBING AND ELECTRICAL SERVICES

Fix, erect and fit to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide and Rondo Professional Design Manual.

3.23 ACCESS PANEL

Install to Rondo Panther installation requirements.

Completion

3.24 REPLACE

Replace damaged or marked elements.

3.25 LEAVE

Leave installation free of any marks or blemishes. Leave all work to the standard required by following procedures.

3.26 REMOVE

Remove debris, unused materials and elements from the site.

3.27 MAKE GOOD

Make good damage to surrounding surfaces.

4 SELECTIONS

For further details on selections go to www.rondo.co.nz
Substitutions are not permitted to the following unless stated otherwise.

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Materials

4.1 RONDO STEEL STUD AND TRACK WALL FRAMING SYSTEM - 64MM STUD

Location:	Refer to Drawings
Wall stud:	Refer to Drawings
Stud centres:	Refer to design manual, including for walls used to support shelf loads. Stud centres should not exceed 600mm unless specifically checked. Stud centres should be reduced for curved walls.
Framed openings:	Refer to design manual
Wall Track:	Select wall track type to suit project specific requirements, refer to options below.
Steel nogs:	222 - FAST-FIX Nogging® / 504 - 64mm x 070 BMT nogging track
Timber Nogs:	Timber nogs notched out at one end, used to provide support to cupboards, hand rails, televisions etc. Describe timber nog to suit, do not use CCA treated timber
Plywood nogs/backing:	17mm thick plywood with Rondo 501 nogging bracket. Describe plywood to suit, do not use CCA treatment. The nogging bracket is available in 2.4 m lengths and can be cut to suit extent of plywood required. The bracket is screw fixed to the stud, the plywood is then fixed to the bracket.
Fixing:	Refer to design manual.

4.2 RONDO STEEL STUD AND TRACK WALL FRAMING SYSTEM - 92MM STUD

Location:	Refer to Drawings
Wall stud:	Refer to Drawings
Stud centres:	Refer to design manual, including for walls used to support shelf loads. Stud centres should not exceed 600mm unless specifically checked. Stud centres should be reduced for curved walls.
Framed openings:	Refer to design manual
Wall Track:	Select wall track type to suit project specific requirements, refer to options below.
Steel nogs:	222 - FAST-FIX Nogging® / 504 - 64mm x 070 BMT nogging track
Timber Nogs:	Timber nogs notched out at one end, used to provide support to cupboards, hand rails, televisions etc. Describe timber nog to suit, do not use CCA treated timber
Plywood nogs/backing:	17mm thick plywood with Rondo 501 nogging bracket. Describe plywood to suit, do not use CCA treatment. The nogging bracket is available in 2.4 m lengths and can be cut to suit extent of plywood required. The bracket is screw fixed to the stud, the plywood is then fixed to the bracket.
Fixing:	Refer to design manual.

4.3 RONDO QUIET STUD ACOUSTIC WALL FRAMING SYSTEM

Location:	Refer to Drawings
Wall stud:	GQST - 92mm x 0.55 BMT / GQST75 - 92mm x 0.75 BMT
Stud centres:	Refer to Drawings
Wall Track:	250 - 92mm x 28mm x 0.50 BMT with hem
Deflection Head:	499 - 92mm x 50mm x 0.70 BMT
Steel nogs:	506 - 92mm x 0.70 BMT nogging track. Track riveted to side of stud, so as not to bridge between wall linings 222 - FAST-FIX Nogging® - with fixings to largest width of stud surface.
Timber/plywood Nogs:	18mm maximum thickness ply or timber nog on edge, screw fixed. Describe nog to suit, do not use CCA treatment.
Fixing:	Refer to design manual.
Acoustic sealant:	Refer to technical information from Gib

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4.4 RONDO ACCESS PANEL

Location:	~
Brand:	Rondo PANTHER® Access Panel Systems
Type:	Description & dimensions flanged - refers to metal perimeter trim Set bead - allows for stopping to panel edge perimeter.
Metal faced MFAP FE	Slimline Metal-face door, flanged
Metal faced MFAP SB	Slimline Metal-face door, set bead
Size:	Refer to Services - 300 x 300mm, 450 x 450mm, 550 x 550mm, 600 x 600mm
Lock:	Dependant on panel type, options include square key budget lock, numbered key cam-lock, concealed touch latch or a magnetic catch.

Performance

4.5 FIRE RATED SYSTEMS

FRR:	Refer to Drawings + Fire Report and GIB technical details for requirements
Location:	Refer to Drawings

4.6 ACOUSTIC RATED SYSTEMS

STC:	Refer to Drawings and GIB technical details for requirements
Location:	Refer to Drawings



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5214DP DURAPLAN TOILET PARTITION SYSTEMS

1 GENERAL

This section relates to the supply and installation of,

- **DuraPlan Systems Ltd** prefabricated toilet partition systems;
- Altitude Range

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
JIS Z 2801	Antibacterial products - Test for antibacterial activity and efficacy

1.2 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents related to this section are:

- **DuraPlan Systems Ltd** Product Information Sheets
- BRANZ Fire Test Report FH18049-01-1 for 3 & 6mm antibacterial compact laminates

Manufacturer/supplier contact details:

Company:	**DuraPlan Systems Ltd**
Web:	www.duraplan.co.nz
Email:	sales@duraplan.co.nz
Telephone:	09 972 7682

Warranties

1.3 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years:	Compact laminate panel integrity
2 years:	Hardware

- Provide this warranty on the **DuraPlan®** standard form.
- Commence the warranties from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.4 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty.

2 years:	For installation when installed by a **DuraPlan®** installation team

- Provide this warranty on the **DuraPlan®** standard form.
- Commence the warranties from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 NO SUBSTITUTIONS

Substitutions are not permitted to any specified **DuraPlan®** systems, components or associated products listed in this section.

1.6 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

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1.7 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not be limited to:

- plans & elevation showing layout, dimensions and finishes
- details & fixings including between partitions and adjacent elements
- all associated hardware & accessories
- Duraplan installation manual

If requested provide the following additional information:
~

Submit shop drawings for review to ~.

- ~ working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication and/or installation.

1.8 INFORMATION FOR OPERATION AND MAINTENANCE

Provide maintenance documentation in accordance with **DuraPlan® r**ecommendations as necessary for the Principal to maintain the works. Provide documentation no later than the date of Practical Completion or the date on which the Principal takes occupation of the works.

Performance

1.9 SURFACE FIRE PROPERTIES

Group Number to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes:

DuraLam® Wall Linings are rated Group Classification 3, Fire Test Report FH18049-01-1. Refer to SELECTIONS.

2 PRODUCTS

Materials - DuraPlan® Altitude Range toilet, shower & changing partition system

2.1 PANELS - COMPACT LAMINATE

CUSTOMIZABLE up to Full height, floor to ceiling 13mm compact laminate panels with black core of thermosetting resins to IS EN 438-4 available in **DuraLam™** antibacterial colour range. Certified antimicrobial to JIS Z 2801 to prevent the growth of bacteria on the surface up to 99% within 24 hours.

2.2 CHANNELS, RAILS AND BRACKETS

Extruded aluminium alloy 6060 with exposed face anodic coated.

Head rail:	40 x 40 x 3mm equal angle
Wall channel:	13mm x 30mm equal channel

2.3 DOORS

To match rigid panels with routed, curved, polished edges and predrilled for hardware

Components - DuraPlan® Altitude Range toilet, shower & changing partition system

2.4 HINGES

Four self-closing stainless steel hinges per door with bolt through security fixings, to match the aluminium section in size.

2.5 PEDESTALS

Altitude Range system is supported by full height centre pilaster

2.6 INDICATOR BOLT AND KEEPER

DuraPlan® standard stainless steel indicator turn-bolt and keeper, brushed finish.

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2.7 HAT AND COAT HOOKS

DuraPlan® standard stainless steel coat hook integrated door stop

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE AND HANDLING

Take delivery of **DuraPlan®** panels and accessories and store horizontally on site and protect from damage. Protect finished surfaces, edges and corners. Move/handle goods in accordance with **DuraPlan®** requirements. Reject and replace goods that are damaged or will not provide the required finish. Panels must be pre-conditioned to the room in which they are to be installed for not less than 24 hours prior to fixing.

3.2 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work. Ensure substrate plumb, level and in true alignment.

Application - Toilet Partition Systems

3.3 INSTALL SCREENS

Carry out the fixing, erection and fitting to finish rigid, plumb, true to line and face and square, to **DuraPlan®** requirements.

3.4 INSTALL COMPONENTS

Hang doors and fit hardware to the **DuraPlan®** requirements.

Completion

3.5 ROUTINE CLEANING

Carry out routine trade cleaning of this part of the work including periodic removal of all packaging, debris, unused and temporary materials and components from the site.

3.6 DEFECTIVE OR DAMAGED WORK

Repair damaged or marked elements. Replace damaged or marked elements where repair is not possible or will not be acceptable. Leave work to the standard required by **DuraPlan®**.

3.7 REPLACE

Replace any damaged or marked elements.

3.8 LEAVE

Leave work with parts fully and freely working and to the standard required by **DuraPlan®**.

3.9 PROTECTION

When working with **DuraPlan®** panels, do not remove protective film until installation is complete and the work area is clean.

Provide the following temporary protection of the finished work generally;
~

4 SELECTIONS

For further details on selections go to www.duraplan.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Performance

4.1 SURFACE FIRE PROPERTIES

Group Number	Panel/Finish	Location
~	~	~

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Toilet and cubicle partitions

DuraPlan Altitude Range

4.2 DURAPLAN ALTITUDE RANGE PARTITION SYSTEM

Location:	End of Trip Facilities and Office Level Bathrooms
Manufacturer/supplier:	**DuraPlan Systems Ltd**
System type:	Altitude Range Toilet/Shower Partition System
Panel description:	13mm DuraLam Compact Laminate
Group number:	3
Panel height;	- Front and End panels - Full height - floor to ceiling - Division partition panels - 2000mm from FFL
Ceiling junction:	40mm x 40mm angle, fixed the ceiling with small negative detail to the front facade (can be covered by 40mm flat bar)
Door type:	Standard
Door dimensions:	Standard door 1800mm high x 600mm wide (240mm gap to FFL)
Hinge hold:	Open in, hold open (recommended for all cubicles to see occupancy)
Panel colour:	5331 Midnight Acacia **- DuraLam™** range
Component colour/finish:	Powder coated or anodised aluminium
Pedestal height:	Floor channel 13mm x 30mm extruded aluminium alloy 6060 with exposed face anodic coated.
Hardware:	Stainless steel brushed finish
Accessories:	2 x coat hooks above bench seats in shower cubicles

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5225 DOORMAX OPERABLE WALLS

1 GENERAL

1.1 OPERABLE WALLS TO MEETING ROOMS @ GROUND LOBBY

Supplier	DOORMAX
Description	MANUALLY OPERATED ACOUSTIC MOVEABLE WALL SYSTEM
Leaf	100 SERIES CENTRE STACKING 4 PANELS WITH FULL HEIGHT MELAMINE LAMINATE FINISH TO BOTH SIDES
Leaf Height	3000mm
Leaf Width	3790mm Site Measure
Frame	L450 STANDARD TRACK WITH RETRACTABLE TOP AND BOTTOM SEALS
STC Rating	47

Supplier Doormax
100 Series Operable Wall with Advanced Performance Specs - Doormax - Operable Walls
sales@doormax.co.nz

NZ: +64 9 951 2116

Nominated supplier by Naylor Love

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5231HS HALLMARK CAVITY SLIDER & STANDARD DOORS

1 GENERAL

This section relates to the supply and installation of **Hallmark Group** range of standard and cavity slider doors for interior use.

1.1 RELATED WORK

Refer to relevant painting sections for finishes

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

MDF	Medium density fibreboard

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 1170.1	Structural design actions - Permanent, imposed and other actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
AS/NZS 1866	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings
NZS 3610	Specification for profiles of mouldings and joinery
AS 3715	Metal finishing - Thermoset powder coatings for architectural application of aluminium and aluminium alloys
NZS 4223.3	Glazing in buildings - Human impact safety requirements
BS 6510	Steel-framed windows and glazed doors

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
Hallmark Architectural Collection brochure
Hallmark Cavity Slider & Sliding Doors brochure
Hallmark Cavity Slider T-Guide info sheet
Hallmark CavZero® info sheet
Hallmark Classic Collection brochure
Hallmark door construction brochure
Hallmark interior doors warranty
Hallmark MDF flush panel specification sheet
Hallmark Milano Collection brochure
Hallmark pre-finished doors brochure
Hallmark timber veneer doors brochure
Hallmark Vogue Collection brochure
Hallmark Ultimate Cavity Slider Door data sheet

Manufacturer/supplier contact details

Company:	Hallmark Group Ltd
Web:	www.hallmarkgroup.co.nz & www.cavityslider.co.nz
Email:	sales@hallmarkgroup.co.nz
Telephone:	0800 846 237

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Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years	For Hallmark Group Interior Standard & Cavity Slider Doors up to 2600mm high x 1600mm wide.

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT).
- Refer to the Hallmark Interior Doors Standard Warranty for all warranty terms and conditions. The warranty applies to the bow, warp, twist or cup of doors however it will only be considered a defect when the bow, warp, twist or cup exceeds ± 7mm.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

2 PRODUCTS

Materials - Hallmark standard door & cavity slider door panels

2.1 SOLID CORE DOORS

Hallmarks solid core doors are manufactured with timber frame and core of solid particle board and selected door skin material in a range of thicknesses and finishes, glued under compression to the frame and core to form the door leaf. Available with steel box inserts to 2 vertical sides, for cavity sliders or if required. Refer to SELECTIONS for details.

Materials - Hallmark standard door & cavity slider door panel finishes

2.2 HALLMARK FLUSH PANEL DOORS - PAINT FINISH

Hallmark paint quality, flush panel doors are available in hollow core, polystyrene core or solid core options, with moisture resistant MDF skins as standard (exterior grade plywood, oil tempered hardboard or covered with electro-galvanized steel is available upon request). Available un-primed or primed, in a range of door thicknesses. Refer to SELECTIONS for details.

Materials - frames

2.3 FRAMES - TIMBER

To NZS 3602. Moisture content approximately 10-14%. To profile as detailed and dimensioned, including stops.

2.4 TIMBER PROFILES, FACINGS, SCRIBERS AND ARCHITRAVES

Traditional profiles to NZS 3610. Proprietary profiles and special profiles as detailed. Pencil radius corners of profiled schedules for paint finish.

Components - cavity slider / wall mounted surface slider

2.5 HALLMARK CLASSIC WHEEL CARRIAGE SYSTEM

Hallmark Classic wheel carriage system, screw fastened to top of the door, with a quick release system, allowing the door to be easily removed from the track. 80kg or 120kg options.

2.6 HALLMARK SMOOTH GLIDE TRACK & T-GUIDE

Hallmark high grade extruded aluminium head track and T-Guide to suit single or double cavity slider configurations and either 90mm or 140mm wide walls.

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2.7 HALLMARK SOFT CLOSE UNITS

Hallmark Soft Close units are available for all Hallmark cavity slider configurations with Soft Close and/or Soft Open functions. Units are designed to suit a range of door weights from 15kg to 80kg.

Components - generally

2.8 SCREWS

Stainless steel or non-corrodible metal. Length sufficient to penetrate into the background support up to the shank. Screws for fixing hinges, hardware or furniture to match the item being attached.

2.9 NAILS

Length sufficient to penetrate into the background support at least half the nail length, except if into radiata pine then three-fifths their length.

2.10 DOOR HINGES

Number, size and gauge to carry door size and weight. Generally:

Type:	Loose pin
Size:	89mm
Material:	Zinc-plated steel
Pin:	Loose-pin zinc-plated steel

2.11 DOOR HARDWARE

Refer to SELECTIONS for door furniture & hardware.

Finishes

2.12 PRE-PRIMED FINISH

Hallmark MDF panel doors can be pre-primed using an ultraviolet (UV) primer. Refer to relevant painting section/s for door and frame finish.

2.13 PAINT FINISH / CLEAR FINISH

Refer to relevant paint finish for on-site finishes.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

3.3 GENERALLY

Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

3.4 CHECK ALL OPENINGS

To NZS 3604. Check all openings on site for size and standard of execution before installing door frames. For cavity sliders, refer to www.cavityslider.co.nz for calculating framing trim size.

Assembly

3.5 FABRICATION - STANDARD DOORS

Fabricate doors and frames in the Hallmark Group factory as detailed and specified, with provision for lock block placement and size. Doors are suppled pre-hung in frames, unless requested otherwise. Fit Hallmark Group hinges to doors of appropriate type to support the door size and weight. Provide temporary bracing and protection for transport.

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3.6 FABRICATE DOORS - CAVITY SLIDERS

Fabricate cavity slider body and doors in the Hallmark Group factory as detailed and specified, with provision for lock block placement and size. Provide temporary bracing and protection for transport.

Installation - generally

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements. Installation tolerances of cavities sliders subject to earthquake design to comply with AS/NZS 1170.1 or NZS 1170.5.

3.8 FIXING FRAMES - STANDARD

Fit to frame as required. Fix and assemble frames rigidly in place, plumb, level and true to line and face without distortion. Fit architraves, if required.

3.9 FIXINGS

Fix frames so that nail heads are covered by applied stops and beads. Punch all nail heads below timber surfaces which will be visible in completed work. Ensure that at least one frame fixing is adjacent to each hanging point.

3.10 DISTORTION

Do not distort frames when wedging or other packing, or when tightening fixings. If necessary adjust packing and fixings to eliminate binding. Do not cut, plane or sand frames to remedy distortion.

3.11 BOTTOM CLEARANCE

Provide for specified floor coverings plus 5mm clearance at any point of swing. When floor covering is not specified, allow 25mm total.
For ventilated and/or air conditioned spaces allow 20mm clearance above finished floor coverings for supply/return air.

3.12 PROPRIETARY ELEMENTS

Fix in accordance with Hallmark Group requirements.

Application - Doors Standard

3.13 INSTALLATION - STANDARD DOORS

Wedge frames into opening and fix through into the wall framing. Locate all wedges and fixing at hinge positions and opposite, with one fixing in the vicinity of the lock.

3.14 TIMBER STUD WALLS - TIMBER FRAMES

Wedge into opening and nail through into the studs. All wedges and fixing to be at hinge positions and opposite, with one fixing in the vicinity of the lock.

3.15 STEEL STUD WALLS - TIMBER FRAMES

Drill the timber frame and fix to steel studs with countersunk self-drilling corrosion proof screws. At hinge side fix direct to opening and pack on the other side to wedge in place. Fix at hinges and opposite, with one fixing in the vicinity of the lock.

Application - Doors Cavity Sliders

3.16 INSTALLATION - CAVITY BODY

Install and fix cavity slider body to the framed wall opening in accordance to Hallmark instructions and requirements. Ensure fixed rigidly in place, plumb, level and true to line and face without distortion. After lining installation, fit selected frames and if required architraves.

3.17 INSTALL CAVITY SLIDER - WITH CLASSIC WHEEL CARRIAGE SYSTEM

Install cavity slider on classic wheel carriage system in accordance with Hallmark installation instruction videos, available on www.cavityslider.co.nz or by scanning QR code on Hallmark cavity slider door.

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Ensure door is straight & true and correct size for pocket. Install carriage brackets to top of door using the supplied screws into the pre-drilled holes. Insert carriage into head track, remove jamb spreader & ensure frame is square and cavity is perfectly aligned. Place back door bracket into the carriage and slide door onto floor T-guide and into cavity pocket followed by the leading edge bracket into carriage.

Adjust hanging bolts to ensure door is square, level & true to line, with correct bottom clearance. Once complete lock door in place with carriage head nut. Install opening head trims and install head rail end cap. Check leaf is centred in pocket, adjust base T-guide as required.

3.18 REMOVE CAVITY SLIDER

Remove doors from the sliding track to paint all six sides for finishing and if necessary to protect them. Store safely and near completion refit them, all without any damage.

Application - Finishing

3.19 FINISHING

Refer to appropriate PAINTING section(s) for selection of paint and preparation requirements. All two faces and all four edges of doors (including lock holes and check outs) must be sealed and coated within four days of arriving on site.

3.20 INSTALL FURNITURE

Install latches, locks and door furniture as scheduled. Check and adjust operation of all doors.

Completion

3.21 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.hallmarkgroup.co.nz & www.cavityslider.co.nz. Substitutions are not permitted to the following, unless stated otherwise.

Hallmark Standard Doors

4.1 HALLMARK STANDARD DOOR - FLUSH PANEL DOORS / PAINT FINISH

Location:	**Refer to Drawings and Door Schedule**
Door type:	Refer to Drawings and Door Schedule
Door size:	Refer to Drawings and Door Schedule
Door thickness:	Solid core: 38mm or 39.5mm (with 4.75 MDF skin) or 42mm (with 6mm MDF skin)
Door Pane/finish:	Hallmark Flush Panel - MDF
Jamb type/finish:	Finger Jointed Pine - grooved for linings or flush with architraves / paint finish
Wall thickness:	Refer to Drawings and Door Schedule
Configuration:	Refer to Drawings and Door Schedule
Leaf edge:	For single doors: Standard timber For pair of doors: Standard timber double
Hardware:	Refer to 5521 HARDWARE for door furniture or Door Hardware Schedule

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4.2 HALLMARK - FLUSH PANEL DOORS / PAINT FINISH - SHELTERED EXTERIOR DOOR

Location:	**Refer to Drawings and Door Schedule**
Door type:	Refer to Drawings and Door Schedule
Door size:	Refer to Drawings and Door Schedule
Door thickness:	Refer to supplier
Door Pane/finish:	Electrogalvanized steel faced aluminum capped (for use in exterior applications)
Jamb type/finish:	Steel frames / paint finish
Wall thickness:	Refer to Drawings and Door Schedule
Configuration:	Refer to Drawings and Door Schedule
Leaf edge:	aluminium clashed
Hardware:	Refer to 5521 HARDWARE for door furniture or Door Hardware Schedule

Hallmark Cavity Slider Doors

4.3 HALLMARK CAVITY SLIDER - FLUSH PANEL DOORS / PAINT FINISH

Location:	**Refer to Drawings and Door Schedule**
Product:	Hallmark ~ Cavity Slider
Configuration:	Refer to Drawings and Door Schedule
Wall framing:	Refer to Drawings and Door Schedule
Wall linings:	Refer to Drawings and Door Schedule
Door type:	solid core door - with 2 box sections to vertical sides.
Door size:	STANDARD - Refer to Drawings and Door Schedule
Door thickness:	38mm (with 4.75mm MDF skin)
Door Pane/finish:	Hallmark Flush Panel - MDF / pre-primed
Pattern:	Smooth - paint finish
Vision Panels:	None
Jamb type/finish:	Finger Jointed Pine - flush with architraves / paint finish.
Head:	Standard
Action:	soft close
Opening:	door leaf protruding (for surface mounted hardware)
Reinforcement:	As required
Hardware:	refer to 5521 HARDWARE for door furniture

Finish

4.4 PAINT FINISH - SITE APPLIED

Refer to relevant painting sections for paint or clear finishes.

Hardware

4.5 DOOR HARDWARE SCHEDULE

Refer to Hardware Schedule supplied for the project



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5241HF HALLMARK FIRE & ACOUSTIC DOORS & WINDOWS

1 GENERAL

This section relates to the manufacture, supply and installation of **Hallmark Group** interior fire, smoke stop and acoustic door sets:
It includes:

- fire, smoke stop and acoustic door-sets
- timber frames and steel frames for door-sets
- door glazing (vision panels)
- hinged

1.1 RELATED WORK

Refer to 5521 HARDWARE for door hardware not specified in this section.
Refer to PAINTING sections for finishing.

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

FRR	Fire resistant rating
Sm	Smoke stopping capability level
STC	Sound transmission class
Rw	Weighted sound reduction index

The following definitions apply specifically to this section:

FRR	Fire Resistance Rating is used to describe the minimum fire resistance required of primary and secondary elements. It comprises three numbers giving the time in minutes for which each of the criteria stability, integrity and insulation are satisfied.
Structural adequacy	Refers to the ability to maintain stability and adequate capacity as determined by NZS 4232.2 and AS 1530.4. Generally not required for doors or windows.
Integrity	Refers to the door or glazing's ability to resist the passage of flames and hot gases as specified in NZS 4232.2 and AS 1530.4.
Insulation	Refers to the ability to maintain a temperature on the door or glass surface exposed to the fire below the limits as specified in NZS 4232.2 and AS 1530.4. Specifications for FRR are expressed in the following order, -/60/60; this refers to no structural adequacy requirement, 60 minute integrity rating and 60 minute insulation rating for fire resistance.

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

BPS	Building Product Specifications
NZBC F8/AS1	Signs
AS 1191	Acoustics - method of laboratory measurement of airborne sound transmission insulation of building elements.
AS 1530.4:2005	Methods for fire tests on building materials, components and structures - Fire-resistance test of elements of construction.
NZS 3602	Timber and wood-based products for use in building
AS 3715	Metal finishing - Thermoset powder coatings for architectural application of aluminium and aluminium alloys
AS 3894.3	Site testing of protective coatings - Determination of dry film thickness

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NZS 4223.3	Glazing in buildings - Human impact safety requirements
NZS 4232.2	Performance criteria for fire resisting enclosures - Fire resisting glazing systems
NZS 4520	Fire resistant door-sets
AS/NZS 4666	Insulating glass units
NZS/BS 476.22	Fire test on building materials and structures - methods for determination of the fire resistance of non-loadbearing elements of construction
ISO 717.1	Acoustics - rating of sound insulation in buildings and of building elements - airborne sound insulation.

1.4 MANUFACTURER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Hallmark Group's Acoustic Door Datasheets
Hallmark Group's Fire Door Datasheets
Hallmark Group's Smoke Door Datasheets
Hallmark Group's Installation, Operation and Maintenance Guide
Hallmark Group's Before You Paint Guide
Hallmark Group's Warranty

For approved hardware list contact Hallmark Group.

Manufacturer/supplier contact details

Company:	Hallmark Group Ltd.
Web:	www.hallmarkgroup.co.nz
Email:	specification@hallmarkgroup.co.nz
Telephone:	0800 846 237

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years:	For materials and manufacturing workmanship

- Provide this warranty on the Hallmark Group standard form (if unavailable, use the standard form in the general section 1237WA WARRANTY AGREEMENT).
- Commence the warranty from the date of supply.

Refer to general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS

Work to be carried out by trade people experienced, competent and familiar with the Hallmark Group joinery system materials and techniques specified.

1.7 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any of the Hallmark Group specified systems, components or associated product listed in this section.

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:
Hallmark Group's Installation, Operation and Maintenance Guide

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Provide this information prior to Practical Completion.

Performance - fire door-sets & windows

1.10 FIRE REQUIREMENTS

To BPS, 8.3 Closures including fire doors, smoke control doors, glazing, and dampers. Provide door-sets of the scheduled fire resistance rating, tested to NZS 4520 'Fire resistant door-sets'.

1.11 VARIATIONS FROM STANDARD - FIRE

Submit before manufacture a written opinion from a registered testing laboratory, that any variation from a production model satisfies the criteria laid down in NZS 4520 'Fire resistant door-sets'.

1.12 FIRE DOOR-SET TAGGING & CERTIFICATION

Installer to submit to Hallmark an Installers Declaration -'Schedule of Evidence' in accordance with NZS 4520.

Upon receipt of 'Schedule of Evidence', Hallmark will assign tags for each door-set and a project register in accordance with NZS 4520. Tags to be fixed to FRR doors and frames in accordance to NZS 4520 and a copy of the Register to be provided to the building owner at Practical Completion.

1.13 FIRE AND SMOKE SEALS

To BPS, 8.3 Closures including fire doors, smoke control doors, glazing, and dampers.

1.14 FIRE GLAZING REQUIREMENTS

Glazing to be fixed fire resisting glazing, complete with frame and fixings, mullions, transoms and glazing beads, with a specified FRR and to NZS 4232.2 'Performance criteria for fire resisting enclosures - Fire resisting glazing systems'.

Quality control and assurance

2 PRODUCTS

2.1 INTERIOR TIMBER

To NZS 3602 'Timber and wood-based products for use in building'. Moisture content 8% to 14%.

Materials - fire / acoustic door sets

2.2 FIRE DOOR-SETS - EUROPA RANGE, 30FRR -240 FRR

Hallmark Group Europa Fire Door sets from 30-240 FRR to NZS 4520 and tested in accordance with AS 1530.4. Europa solid vermiculite mineral core doors are available with either timber or steel frames to Hallmark Group profiles. If required, available with acoustic seals to meet specified STC rating. Refer to SELECTIONS for details.

Make provision for the scheduled fire-rated hardware to be supplied and fitted. Make arrangements on delivery to the site, for the 'Installer's Declaration' to be returned to the contract administrator.

2.3 FIRE DOOR-SETS - FUTURA RANGE, 30FRR -60 FR

Hallmark Group Futura Fire Door sets from 30-60 FRR tested in accordance with NZS/BS 476.22. Futura solid timber particleboard core doors are available with timber frames to Hallmark Group profiles. If required, available with acoustic seals to meet specified STC rating. Refer to SELECTIONS for details.

Make provision for the scheduled fire-rated hardware to be supplied and fitted. Make arrangements on delivery to the site, for the 'Installer's Declaration' to be returned to the contract administrator.

2.4 FIRE GLAZING - DOOR VISION PANELS

Hallmark Group non-opening fixed pane fire glazing to NZS 4520. Aluminium, steel or timber glazing beads are available in accordance with selected fire door requirements. Refer to SELECTIONS for details.

Materials - Hallmark smoke / fire / acoustic door panel finishes

2.5 HALLMARK FLUSH PANEL DOOR SKIN - PAINT FINISH

Hallmark paint quality, moisture resistant MDF, oil tempered hardboard or exterior grade plywood flush panel door skins. Refer to SELECTIONS for details.

Components

2.6 DOOR HARDWARE

Hallmark Group approved hardware for the stated fire and acoustic performance. Refer to SELECTIONS for details.

2.7 SCREWS

Stainless steel. Length sufficient to penetrate into the background support up to the shank. Screws for fixing hinges, hardware or furniture to match the item being attached.

2.8 NAILS

Length sufficient to penetrate into the background support at least half the nail length, except if into Radiata pine, then three-fifths their length.

2.9 INSERTS, BOLTS AND FASTENERS

Fixings to be the appropriate type, finish, size and spacing to Hallmark Group details. Items to be installed in corrosive environments, to be stainless steel.

2.10 AIR TRANSFER GRILLS

Lorient LVH Intumescent air transfer grills for fire rated doors. Fire tested in accordance with AS 1530.4, providing up to 2 hour fire rating. Refer to SELECTIONS for details.

Seals/sealants

2.11 FIRE AND SMOKE SEALS

Hallmark Group approved fire & smoke seals, suitable for plain or rebated frames.

2.12 GENERAL PURPOSE SEALANT

General purpose, flexible, water based, acrylic gap filler/sealant for sealing door frame to the wall/lining.

2.13 INTUMESCENT SEALANT

Intumescent flexible acrylic sealant for sealing door frame to the wall/lining, tested to AS 1530.4, complying with NZS 4520. Sealant to meet fire rating of the scheduled doorset and wall system.

2.14 ACOUSTIC SEALANT

Flexible, water based, acrylic acoustic sealant for sealing door frames to the wall/lining. Sealant to meet acoustic rating of the scheduled doorset and wall system.

Finishes - Steel

2.15 ZINC METAL SPRAY

Steel frame to be abrasive blasted prior to application of 75 - 100 microns minimum coating thickness when measured to AS 3894.3 'Site testing of protective coatings'. Refer to SELECTIONS for details.

Finishes - General

2.16 PAINT FINISH / CLEAR FINISH

Refer to relevant PAINT section for details.

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3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE AND HANDLING

Refer to the general section 1270 CONSTRUCTION and Hallmark Group warranty conditions for requirements relating to delivery, storage and handling of product. Take delivery of materials and goods, store on site and protect from damage. Protect finished surfaces, edges and corners from damage. Move/handle goods in accordance with manufacturer's requirements. Reject and replace goods that are damaged or will not provide the required finish.

3.2 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Confirm that wall openings have been prepared ready for the installation of all door & window frames. The framed opening for fire doors must not exceed 10mm in height and 20mm in width of the door frame dimensions, for two piece jambs this is to the tight install size. Do not proceed with the door or window installation until required preparatory work has been completed.

Ensure the following:

Moisture content:	Timber frame 18% maximum

3.3 PRE-COATING/FINISHING REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for specified finish. Carry out such additional preparatory work as required bringing the substrate to suitable condition.

3.4 GENERALLY

Door/window & frame fabrication and installation to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, and stairs).

Installation/application

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.6 PROTECT

Main Contractor to provide the following temporary protection of the finished work:
Protect all elements against damage to arrises and glazing beads. Store frames and doors flat on pallets or upright at an angle no greater than 15 degrees from perpendicular, and away from moisture or direct sunlight.

Fabrication

3.7 FABRICATION GENERALLY

Manufacture and fabricate frames and doors as detailed. Install hinges and running gear as scheduled. Provide temporary bracing and protection. Temporarily secure all opening elements for transportation.

3.8 FABRICATE DOOR-SETS

Fabricate fire rated & acoustic rated door-sets in the factory with doors hung and provision for associated furniture made as required.

3.9 FABRICATE VISION PANELS / TOP & SIDE LIGHTS

Fabricate fire rated & acoustic rated glazing in the factory. Install all vision panels and glazing as detailed and specified, in factory in accordance with relevant interior glazing section.

3.10 HARDWARE GENERALLY

Make provision for the scheduled fire-rated hardware to be supplied and fitted either in the factory or on site. Key alike all lockable hardware able to be keyed alike, including other interior doors. Account for all keys and deliver separately to the site manager.

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3.11 HINGES

Fit Hallmark Group hinges to doors of appropriate type to support the door size and weight.

3.12 FACTORY FINISHING

Brace square and provide protection to assemblies during delivery to site. Where factory glazed, temporarily indicate the presence of transparent glazing with whiting, tape or signs compatible with the glass type.

3.13 ON SITE FINISHING -DOORS PAINT FINISH

Before installation:

- Prime both faces and all edges of timber doors not primed with an alkyd wood primer, for paint finish.
- Re-prime any subsequently cut edge, for paint finish
- Refer to painting section/s for paint or clear finishing.

Installation - generally

3.14 INSTALL FIRE DOOR-SETS

Install and fix to comply with NZS 4520 'Fire resistant door-sets', NZS 4232.2 'Performance criteria for fire resisting enclosures - Fire resisting glazing systems', the stated fire rating requirements and Hallmark Group installation details.

3.15 INSTALL FRAMES

Fix and assemble door & window frames rigidly in place, plumb, level and true to line and face without distortion to Hallmark Group requirements.

3.16 DISTORTION

Do not distort frames when wedging or other packing, or when tightening fixings. If necessary adjust packing and fixings to eliminate binding. Do not cut, plane or sand frames to remedy distortion.

3.17 FIXINGS - TIMBER FRAMES

Fix frames to Hallmark Group requirements. Punch all nail heads below timber surfaces which will be visible in completed work. Ensure that at least one frame fixing is adjacent to each hanging point when fixing timber frames.

3.18 ANCHORAGES

Install all required anchorages to Hallmark Group requirements for the fire rated and acoustic rated doors & windows, including sleeves, concrete inserts, anchor bolts and items with integral anchors that are to be embedded in concrete and/or masonry.

3.19 TOLERANCES

Install the finished pre-hung door to a dimensional accuracy of ± 2mm. For fire rated windows the maximum wedging gap permitted under NZS 4520 is 10mm on all 4 sides. Trim or pack the wall studs or masonry wall as appropriate. Do not adjust the frame thickness.

Installation - fire and acoustic door-sets

3.20 FIXING FIRE RATED, SMOKE-STOP & ACOUSTIC FRAMES

Fix in accordance with NZS 4520 'Fire resistant door-sets' and Hallmark Group instructions.

3.21 TIMBER STUD WALLS - TIMBER FRAMES

Wedge into opening and nail through into the studs. All wedges and fixing to be at hinge positions and opposite, with one fixing in the vicinity of the lock. Seal between back of frame and wall lining with intumescent sealant for fire walls and acoustic sealant for acoustic walls.

3.22 STEEL STUD WALLS - TIMBER FRAMES

To suit installation of timber door frame, adjacent the door frame fix timber studs by drilling the steel frame and fixing with countersunk self-drilling corrosion proof screws. At hinge side, fix direct to opening and pack on the other side to wedge in place. Fix at hinges and opposite, with one fixing in the vicinity of the lock. Seal between back of frame and wall lining with intumescent sealant for fire walls and acoustic sealant for acoustic walls.

3.23 TIMBER STUD WALLS - STEEL FRAMES

Using a pilot hole in the frame, fix to timber studs with countersunk self-drilling corrosion proof screws. Fix at hinges and opposite, with one fixing in the vicinity of the lock. Seal between back of frame and wall fire rating with intumescent sealant.

3.24 STEEL STUD WALLS - STEEL FRAMES

Using a pilot hole in the frame, fix to steel studs with countersunk self-drilling corrosion proof screws. Fix at hinges and opposite, with one fixing in the vicinity of the lock. Seal between back of frame and wall fire rating with intumescent sealant.

3.25 FILL FITTING IN GAP - TIMBER FRAMES

In accordance with Hallmark installation details, fill the fitting in gap with non-combustible material/packer i.e. fibre cement board or steel shims, allow for 10mm deep continuous seal either side of frame. Apply sealant to 10mm depth in continues bead to fitting gap, tool off smoothly with templates and tools supplied or recommended by the sealant manufacturer.

3.26 FILL FIRE RATED STEEL FRAMES

Steel frames to be;

- plaster or grout filled to concrete or concrete masonry walls,
- plaster or plaster board filled to timber or steel framed walls,
- as shown on the drawings and to Hallmark Group requirements.

Refer to SELECTIONS for details.

3.27 HANG DOORS

Hang doors on hinges as specified and to operate freely. Check and adjust operation of all doors.

3.28 BOTTOM CLEARANCE

For fire and smoke-stop door-sets, the clearance above finished floor coverings must not exceed 10mm, and must not exceed 25mm overall from the non-combustible floor level. Provide for specified floor coverings.

3.29 REMOVE DOORS

Remove doors from the frames prior to, or on installation, and immediately seal on all six sides. Finish as required, store safely and near completion refit to avoid any damage.

3.30 GLAZING - FIRE & ACOUSTIC RATED

Install approved glazing to NZS 4232.2 'Performance criteria for fire resisting enclosures - Fire resisting glazing systems' into the specified window, door and door-set system assembly.

Install acoustic rated glazing and fix to comply with the stated STC rating requirements and **Hallmark Group** installation details.

3.31 INSTALL HARDWARE

Install to NZS 4520 'Fire resistant door-sets'. Install latches, locks and door furniture as scheduled. Check and adjust operation of all doors.

Finishing

3.32 MARKING OF FIRE-RATED DOOR-SETS

The marking of fire-rated door-sets to be according to NZS 4520 'Fire resistant door-sets', section 6 'Marking and documentation'.

3.33 FIRE-RATED DOOR-SET SIGNS

To NZBC F8/AS1, 5.2, 'Fire and smoke control doors'.

3.34 MARKING OF FIRE-RATED WINDOWS

Mark fire-rated windows and screens to NZS 4232 2; section 211 'Marking of fire windows'.

3.35 SAFETY - GLAZING

Indicate the presence of transparent glass for the remainder of the contract period, with whiting, tape or signs compatible with the glass type. Indicators other than whiting must not be applied to the glass surface. Masking tape must not be used for this purpose.



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Completion & Commissioning

3.36 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

3.37 COMPLETION - TESTS & CERTIFICATION

Complete certification and tagging of FRR door-sets in with NZS 4520. Install fire door tags to all fire door-sets and provide a copy of FRR Door Register to the building owner at Practical completion.

4 SELECTIONS

For further details on selections go to www.hallmarkgroup.co.nz
Substitutions are not permitted to the following **Hallmark Group** products.

Materials - fire rated and acoustic - double action doors

4.1 HALLMARK GROUP - 60 MINUTE FIRE DOOR SET

Refer to Drawings, Door Schedule and Fire Report for requirements

Frame installation

4.2 STEEL JAMBS TO BE BACKFILLED

Location:	**Refer to Drawings, Door Schedule and Fire Report for requirements**

Hardware

4.3 HARDWARE

Refer to 5521 HARDWARE section.

4.4 KICK PLATES

Location:	**Refer to Drawings, Door Schedule**
Size:	Refer to Drawings, Door Schedule
Material:	Stainless steel

Finishes

4.5 PAINTING / CLEAR FINISHES

Refer to PAINTING section/s for painting or clear finishes.

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5311PI INTERIOR SUSPENDED CEILING SYSTEMS - BY POTTERS

1 GENERAL

This section relates to the manufacture, supply and installation of Potter Interior Systems suspended ceiling systems.

It includes:

- Ceiling tiles

1.1 ABBREVIATIONS AND DEFINITIONS

The following abbreviations are used throughout this part of the specification:

AWCINZ	Association of Wall and Ceiling Industries of New Zealand Inc
CAC	Ceiling attenuation class
LRV	Light reflectance value
NRC	Noise reduction coefficient
STC	Sound transmission class
o.d.s	Overall depth of system

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

BPS	Building Product Specifications
NZBC B1/VM1	Structural provisions for buildings
NZBC C/AS2	Protection from fire for buildings other than risk group SH
AS/NZS 1170.0	Structural design actions - General principles
AS/NZS 1170.1	Structural design actions - Permanent, imposed and other actions
AS/NZS 1170.2: 2011	Structural design actions - Wind actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
AS/NZS 2588	Gypsum plasterboard
AS/NZS 2589	Gypsum linings - Application and finishing
AS/NZS 2785	Suspended ceilings - Design and installation
NZS 4219	Seismic performance of engineering systems in buildings
NZS 4221	Fibrous plaster sheet
NZS 4541	Automatic fire sprinkler systems
ISO 5660.1	Reaction to fire tests - Heat release, smoke production and mass loss rate Part 1: Heat release rate (cone calorimeter method)
ISO 6308	Gypsum plasterboard - Specification
ASTM C423	Test method for sound absorption and sound absorption coefficients by the reverberation room method
ASTM C635	Standard specification for the manufacture, performance and testing of metal suspension systems for acoustical tile and lay-in panel ceilings
ASTM E1414	Standard test method for airborne sound attenuation between rooms sharing a common ceiling plenum (two room method)
EN 13964	Suspended ceilings - Requirements and test methods

Warranties

1.3 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years:	For Rondo suspension systems, Rondo Donn, Rondo Xpress Drywall & Rondo Key-lock
10 years:	For AMF / Fenta acoustic ceiling panels

30 years:	For AMF acoustic ceiling panels in Rondo suspension for MOE projects
50 years:	For Tracklok® Gridlok® Seismic Ceiling Bracing

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.4 WARRANTY - INSTALLER/APPLICATOR

Provide an installer warranty:

2 years:	For workmanship

- Provide this warranty on the installer standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

Provide evidence of experience, listing completed projects of similar size and complexity

1.6 QUALIFICATIONS WORKERS - INDUSTRY QUALIFICATION REQUIREMENTS

Installation by a manufacturer accredited installer, using the manufacturer technical services. Installers are to be members of the AWCINZ. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

Provide evidence of experience, listing completed projects of similar size and complexity.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.8 AS BUILT DOCUMENTS

Refer to the general section 1238 AS BUILT DOCUMENTATION for the requirements for submission and review of as built documents and records.

Provide the following as built documents and records:
The general section 1238 AS BUILT DOCUMENTATION describes the process of submission and review of as built documentation.

- Provide draft as built information prior to practical completion.
- Provide final as built information prior to the end of the defects liability period.

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:

Supply information on the materials and method of cleaning the ceiling system over its expected life.

1.10 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer / supplier warranty
- Producer Statement (PS1) - Design from supplier independent engineer
- Producer Statement (PS3) - Construction from the applicator / installer
- Producer Statement (PS4) - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.

Performance

1.11 LOADING CODE REQUIREMENT

To AS/NZS 2785, comply with the requirements of; AS/NZS 1170.0, AS/NZS 1170.1, AS/NZS 1170.2, NZS 1170.5, NZBC B1/VM1, as appropriate.

1.12 CERTIFICATION

Provide:

- certificates and other evidence that the system complies with the standards of performance specified.
- Producer Statements

1.13 ACOUSTIC REQUIREMENTS

Use an independent testing authority to test a specimen of the ceiling system to AS/NZS 2785, 2.6 Acoustic Requirements, and submit the results for acceptance.

Refer to SELECTIONS

1.14 FIRE HAZARD PROPERTIES

Group Number to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes. Refer to SELECTIONS.

1.15 FIRE RATING REQUIREMENT

Design the ceiling system so that together with the floor it is to BPS, 8.2 Fire resistance. and BPS, 8.2.1 Fire resistance ratings.

Refer to SELECTIONS.

1.16 ENVIRONMENTAL REQUIREMENTS

Design the ceiling system for use over its expected life without deterioration within the required temperature and humidity range.

Refer to SELECTIONS for details.

1.17 REFLECTANCE

Refer to SELECTIONS

Performance - Wind (design by contractor)

1.18 DESIGN PARAMETERS WIND - DESIGN BY CONTRACTOR

Design the installation to the wind pressure parameters of AS/NZS 1170.2. Refer to General section 1220 PROJECT for general details.

Refer to SELECTIONS specific design performance requirements.

Performance - Seismic (design by contractor)

1.19 SEISMIC – SPECIFIC DESIGN

Design the system and its anchorages/ fixings to resist the earthquake loads of the seismic zone in accordance with NZS 1170.5.

Refer to general section 1220 PROJECT for details.
Refer to SELECTIONS specific design performance requirements.

2 PRODUCTS

Suspension system

2.1 SUSPENSION SYSTEM - RONDO XPRESS DRYWALL

Brand:	Rondo Xpress Drywall Concealed Ceiling System
Material:	Hot-dip galvanized steel
Compliance:	AS/NZS 2785, AS/NZS 1170, NZS 1170.5, ASTM C635

2.2 SUSPENDED SYSTEM - RONDO KEYLOCK

Brand:	Rondo Keylock Concealed Ceiling System
Material:	Hot-dip galvanized steel
Compliance	AS/NZS 2785, AS/NZS 1170, NZS 1170.5, ASTM C635

2.3 RESILIENT CLIP AND CHANNEL

STWC resilient sound insulation clip and Rondo 310, 308 or 129 furring channel for sound rated systems.

AMF Heradesign Panel ceilings

2.4 AMF HERADESIGN® ACOUSTIC PANELS

Heradeign® acoustic panels manufactured from magnesite-bonded wood wool and tested to ASTM C423. Available in a range of panel types, and thicknesses. Can be direct fixed or in conjunction with exposed suspended grid system.

Components

2.5 SCREWS

Screws to suit the lining manufacturer.

2.6 RONDO STEEL STUD FRAMING

Rondo steel stud manufactured to AS/NZS 4600. Steel grade and zinc coating class to G2 Z272 to AS 1397. For use in conjunction with Gridlok® bracing system.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Do not begin installation until the building is closed in, fully glazed, the roof watertight, the atmospheric conditions within the manufacturer guidelines, and mechanical and electrical duct work above the ceiling completed.

3.4 CO-ORDINATE SERVICES

Co-ordinate and co-operate with electrical and mechanical work to avoid conflict between suspension members and luminaires, diffusers, pipework and ducting. Confirm the provision of extra hangers and fixings.

Ensure co-operation with work in and above the ceiling, including the marking of specific ceiling tiles below major access points to above-ceiling services. Colour coded markings to follow the standards laid down by mechanical and electrical services.

Services and other attachments, attached to or supported by the ceiling grid system to AS/NZS 2785, ensure that:
- items over 7.5kg and items under 7.5kg but falling greater than 3m, require a tether to AS/NZS 2785, anchored to structure.
- items attached to the ceiling grid must be under 10kg mass, items over 10kg cannot be attached to the grid and must be independently supported.
- unless designed otherwise, the ceiling systems total load of services and other attachments must not exceed 3kg/m².

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- light fittings installed to AS/NZS 2785 and NZS 4219.
- ceiling system clearances to structure and services etc. that are not attached to the ceiling system, to be to NZS 4219, and/or NZS 4541 for sprinklers.

3.5 SITE CONDITIONS

Do not begin installation until the building is closed in, fully glazed, the roof watertight, and mechanical and electrical duct work above the ceiling completed. To AS/NZS 2785, Appendix C, site Conditions, Installation and Inspections.

3.6 RESPONSIBILITY

Ensure that conditions are suitable for the ceiling installation. Arrange for the programming of the work to suit required practice.

Installation

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.8 INSTALL - GENERAL

Install the system to AS/NZS 2785 minimum standards and the ceiling manufacturer requirements.

Allowance for support members:
- Space required by the loads on the system and the type of ceiling.
- For the installation of services and accessories, including ductwork, light fittings and diffusers.
- Additional back support or suspension members for the fixing of services and accessories to prevent distortion, overloading or excessive vertical deflection.
- For access for maintenance of services.

Allowance for a ceiling system where failure of any one suspension point does not cause a progressive failure of the ceiling.
Allowance for height adjustment with a length adjustment device at each suspension point, permitting length variation of at least 50 mm.

If required, allow for notch grid members at the junction with the perimeter trim to make sure the ceiling units lie flat on the perimeter trim.
Do not attach the suspension system to the lip or flange of purlins.

Fix, erect and fit to finish rigid, plumb, square and true to line and face. Where components required cutting on site, use metal snips, fine-toothed band or hack saws.

Install all movement joints required.

Services support to conform to the following:
- If the service has not been designed to accept the ceiling load, do not fix suspension members to services (e.g. ductwork).
- If services obstruct the ceiling supports, provide bridging and suspension on each side of the services.
- Do not support services terminals on ceiling tiles/units.

3.9 ACCESSIBILITY

Provide access to the ceiling system and the in-ceiling and above-ceiling services so that maintenance and removal of any part can be carried out without damage to the ceiling system or panels.

3.10 PENETRATIONS

To AS/NZS 2785 and NZS 4219 generally, with sprinkler systems to NZS 4219 and/or NZS 4541.

Accommodate recessed light fittings, air conditioning outlets and other electrical and/or mechanical services that are fixed to or pass through the ceiling system. Provide independent support and/or required clearances for these as necessary. Such fittings are not to be supported by the acoustical ceiling panels.

3.11 RETURN AIR PLENUM

Tiles to prevent release of fibres into the ceiling space, air conditioning or ventilation system. Clip tile down to the grid to stop lifting if required.

3.12 CUTTING HERADESIGN

Cut using tungsten carbine-tipped blade to panels manufacturer's requirements.

3.13 PROTECT EXISTING WORK

Protect adjacent existing work from damage during the installation.

Finishing

3.14 PAINTING OF HERADESIGN PANELS

Refer to relevant painting section for requirements.

Ensure at least 2 coats of paint are applied, in accordance with paint manufacturer's instructions, with an airless paint sprayer at a rate of approximately 0.2 – 0.3 litres per m². Too much paint can be detrimental to the acoustic performance of the tile.

Recommend spare touch up bottles of same colour paint to touch up defects and screws where necessary.

Completion & Commissioning

3.15 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.potters.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Performance requirements

Suspension system

4.1 FLUSH CEILING SUSPENSION SYSTEM

Location / System:	GF meeting rooms / Rondo Key-lock Concealed Ceiling System - refer to Rondo documentation L01-05 lift lobbies and egress around core / Rondo Xpress Drywall - refer to Rondo documentation

Heradesign Panels

4.2 HERADESIGN PANELS – DIRECT FIXED TO FURRING CHANNEL

Location:	GF meeting rooms and L01-05 lift lobbies / egress around core
Brand/type:	AMF Heradesign
Size:	600mm x 1200mm
Thickness:	25mm
NRC:	up to 0.9NRC
Edge finish:	AK01 – 5mm Bevel on all face edges
Weight per m²:	13.5kg/m²
Batten type:	Rondo 155 – Wide furring channel
Batten centres:	600mm
Pattern type:	Stack bond
Colour:	Natural
Group Number:	1-S

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Components

4.3 POTTER ACCESS HATCH

Location:	GF meeting rooms and L01-05 lift lobbies / egress around core
Brand:	Rondo and Unihatch Hatch - by Potters
Type:	Refer to Powell Fenwick documentation
Size:	Refer to Powell Fenwick documentation

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5313KL RONDO SYSTEMS - PLASTERBOARD & SHEET CEILINGS

1 GENERAL

This section relates to the supply and installation of **Rondo Ceiling Systems.** It includes;

- Rondo KEY-LOCK Concealed Ceiling System
- Rondo XPRESS® Drywall Grid System
- Rondo Steel Stud Drywall Concealed Ceiling System
- Direct-fix or fully suspended applications
- Non-fire rated and fire-rated systems
- Bulkhead ceilings
- Seismic and acoustic designs

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

AWCINZ	Association of Wall and Ceiling Industries of New Zealand Inc

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

BPS	Building Product Specifications
NZBC B1/VM1	Structural design of buildings
NZBC B2/AS1	Durability provisions for building elements
AS/NZS 1170.0	Structural design actions - General principles
AS/NZS 1170.1	Structural design actions - Permanent, imposed and other actions
AS/NZS 1170.2: 2011	Structural design actions - Wind actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
AS/NZS 2588	Gypsum plasterboard
AS/NZS 2785	Suspended Ceilings - Design & Installation
NZS 4219	Seismic performance of engineering systems in buildings
NZS 4541	Automatic fire sprinkler systems
AS/NZS 4600:2005	Cold formed steel structures
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Rondo Professional Design Manual
Rondo KEY-LOCK® installation guide
Rondo XPRESS® Drywall Grid System Rondo brochure
Rondo Steel Stud Drywall Concealed Ceiling System in Design Guide
Certificate of Licence for New Zealand Made trademark - Licence No. 806965

Manufacturer/supplier contact details

Company:	**Rondo Building Services Pty Ltd**
Web:	www.rondo.co.nz
Email:	steve.hardy@rondo.co.nz
Telephone:	09 636 5110

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

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10 years	For Rondo branded products against defects in materials under normal use. In addition, Rondo warrants that the Rondo KEY-LOCK® Suspended Ceiling Systems will remain structurally sound for a period of 15 years.

- Provide this warranty on the manufacturer/supplier standard form
- Commence the warranty from the date of purchase.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 QUALIFICATIONS WORKERS – INDUSTRY QUALIFICATION REQUIREMENTS

Installation by a manufacturer accredited installer, using the manufacturer technical services. Installers are to be members of the AWCINZ. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

Compliance information

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer / supplier warranty.
- Internal Rondo engineered design - refer to SELECTIONS.
- Producer Statement (PS1) - Design from supplier independent engineer.
- Producer Statement (PS3) - Construction from the applicator / installer.
- Producer Statement (PS4) - Construction Review from an acceptable suitably qualified person.
- Other information required by the BCA in the Building Consent Approval documents.

Performance

1.9 LOADING CODE REQUIREMENT

To AS/NZS 2785, comply with the requirements of; AS/NZS 1170.0, AS/NZS 1170.1, AS/NZS 1170.2, NZS 1170.5, NZBC B1/VM1, as appropriate.

1.10 CERTIFICATION

Provide:

- Certificates and other evidence that the system complies with the standards of performance specified.
- Producer Statements.

1.11 FIRE RATING REQUIREMENT

Design the ceiling system so that together with the floor and ceiling lining system, to BPS, 8.2 Fire resistance. Refer to SELECTIONS.

1.12 ENVIRONMENTAL REQUIREMENTS

Durability to NZBC B2/AS1.

Performance - Wind (design by contractor)

1.13 DESIGN PARAMETERS WIND - DESIGN BY CONTRACTOR

Design the installation to the wind pressure parameters of AS/NZS 1170.2. Refer to general section 1220 PROJECT for general details.

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Contact Rondo Building Services Pty Ltd for their internal engineering design service or to facilitate Producer Statement - Design (PS1).
Refer to SELECTIONS specific design performance requirements.

Performance - Seismic (design by contractor)

1.14 SEISMIC - SPECIFIC DESIGN

Design the system and its anchorages/fixings to resist the earthquake loads of the seismic zone in accordance with NZS 1170.5. Refer to general section 1220 PROJECT for general details. Contact Rondo Building Services Pty Ltd for their internal engineering design service or to facilitate Producer Statement - Design (PS1).

Refer to SELECTIONS specific design performance requirements.

Quality control and assurance

1.15 INSPECTIONS

The Contractor is required to carry out or engage consultants to carry out inspections of parts of the work. It will typically be expected that the person carrying out the inspections will be required to provide producer statements in support of the work carried out.

2 PRODUCTS

Suspension system - Rondo KEY-LOCK suspended ceiling system

2.1 KEY-LOCK SUSPENDED CEILING SYSTEM

KEY-LOCK suspended ceiling system to AS/NZS 2785, hot-dip galvanized steel elements manufactured from G2 steel strip to AS 1397 including furring channels and snap in sections. Primary (Top Cross Rail) and secondary components (Furring Channel).

2.2 SEISMIC RESTRAINT

To AS/NZS 2785, 4.3.3 Seismic Restraint Types and/or suitable proprietary back braces for ceiling systems.

2.3 KEY-LOCK DIRECT FIX CEILING SYSTEM

KEY-LOCK direct fix ceiling system to AS/NZS 2785, including suspension depths of up to 200mm. Furring channels, Direct fix clips for fixing to timber, steel and concrete, to carry ceiling sheets, light fixtures and air distribution elements to comply with NZS 1170.5.
Provide diagonal bracing to provide lateral stability if required. Perimeter trim, expansion joints and seismic joints etc. to AS/NZS 2785, as required.
Hot-dip galvanized steel elements manufactured from steel strip to AS 1397.

2.4 PRIMARY SECTIONS

Rondo 25mm or 38mm top cross rail to AS 1397. Steel grade and zinc coating class G2 Z275 to AS 1397.

2.5 FURRING BATTEN SECTIONS

Rondo furring/batten sections to AS 1397. Steel grade and zinc coating class G2 Z275 to AS 1397.

Components

2.6 DIRECT FIX CLIPS

Hot-dip galvanized steel elements manufactured from steel strip to AS 1397.

2.7 SECTION JOINERS

Hot-dip galvanized steel elements manufactured from steel strip to AS 1397.

2.8 RONDO WALL TRIM

Rondo wall trim sections to AS 1397. Steel grade and zinc coating class G2 Z275 to AS 1397.

2.9 RONDO SUSPENSION RODS, BRACKETS CLIPS, RODS & ANCHORS

Rondo components to AS 1397. Steel grade and zinc coating class G2 Z275 to AS 1397.

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Accessories

2.10 FASTENERS SUSPENSION SYSTEM

Pop rivets or 8g-16 x 12mm (minimum) self drilling wafer head screws to join furring channels and C channels as detailed in Rondo Professional Design Manual and to Rondo Building Services Pty Ltd requirements.

2.11 FASTENERS DIRECT FIX

8g-16 x 25mm (minimum) self drilling wafer head screws for fixing to timbers detailed in Rondo Professional Design Manual and to Rondo Building Services Pty Ltd requirements.

2.12 SCREWS

25mm x 6 gauge non-rusting Type S self-drilling and self-tapping bugle head screws as detailed in Rondo Professional Design Manual and to Rondo Building Services Pty Ltd requirements.

Rondo XPRESS® Drywall Grid System

Materials - Rondo Steel Stud Drywall Ceiling System

2.13 STEEL STUD SECTIONS

Rondo stud sections to AS/NZS 4600. Steel Grade and zinc coating class G2 Z275 to AS 1397 with preformed service holes to stud webs and a range of BMT options. Refer to SELECTIONS for type.

2.14 STEEL TRACK SECTIONS

Rondo track sections to AS/NZS 4600. Steel Grade and zinc coating class G2 Z275 to AS 1397 with a range of widths and BMT options. Refer to SELECTIONS for type.

2.15 MECHANICAL JOINTS

Joint Type:	Fastener:
Type 1 (spans up to 3.0m or 2 or 3 span ceilings up to 4.0m)	1/#8-18 x 16mm wafer head tek screw in 2 places
Type 2 (spans larger than 3.0m)	2/#10-16mm tek screws
Type 3 (spans larger than 3.0m)	3/#10-16mm tek screws

2.16 SUSPENSION JOINT TYPE 1

30mm x 0.8mm hoop iron strapping wrapped around underside of purlin and fixed to web with 2/#8-18 x 16mm wafer head tek screws each side of purlin and screws.

2.17 SUSPENSION JOINT TYPE 2

Rondo angle bracket 553 fixed to purlin with 2/#8-18 x 16mm wafer head tek screws in 4 places.

2.18 SUSPENSION JOINT TYPE 3 - CONCRETE SOFFIT

Rondo angle bracket 247 fixed to stud with 2/#8-18 x 16mm tek screws and bracket fixed to concrete soffit with proprietary masonry anchor.

Lining and Insulation

2.19 PLASTERBOARD

Gypsum plaster core encased in a face and backing paper formed to AS/NZS 2588. Refer to SELECTIONS for type and thickness.

2.20 LINING BOARD

Refer to SELECTIONS for type, thickness and finish.

2.21 INSULATION

Refer to SELECTIONS for type and thickness.

Access Panels

2.22 ACCESS PANEL

Refer to SELECTIONS.

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3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Take delivery of materials and goods and store on-site on a level, firm base and protect from airborne contaminants such as acid and salt spray.

Protect finished surfaces, edges and corners from damage. Do not drag Rondo steel members across each other, or across other materials.
Move/handle goods in accordance with manufacturer's requirements.
Reject and replace goods that are damaged or will not provide the required finish.

3.2 ROUTINE MATTERS

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 SUBSTRATE

Ensure substrate is plumb, level and in true alignment. Do not start erection if the substrate will not allow work of the required standard. Complete any remedial work found necessary before framing erection.

3.4 COMMENCING THIS WORK

Commencing this work means the substrate is accepted as allowing work of the required standard.

3.5 CO-ORDINATE SERVICES

Co-ordinate and co-operate with electrical and mechanical work to avoid conflict between suspension members and luminaires, diffusers, pipework and ducting. Confirm the provision of extra hangers and fixings.
Ensure co-operation with work in and above the ceiling, including the marking of specific ceiling tiles below major access points to above-ceiling services. Colour coded markings to follow the standards laid down by mechanical and electrical services.
Services and other attachments, attached to or supported by the ceiling grid system to AS/NZS 2785, ensure that:

- items over 7.5kg and items under 7.5kg but falling greater than 3m, require a tether to AS/NZS 2785, anchored to structure.
- items attached to the ceiling grid must be under 10kg mass, items over 10kg cannot be attached to the grid and must be independently supported.
- unless designed otherwise, the ceiling systems total load of services and other attachments must not exceed 3kg/m².
- light fittings installed to AS/NZS 2785 and NZS 4219.
- ceiling system clearances to structure and services etc. that are not attached to the ceiling system, to be to NZS 4219, and/or NZS 4541 for sprinklers.

3.6 SITE CONDITIONS

Do not begin installation until the building is closed in, fully glazed, the roof watertight, and mechanical and electrical duct work above the ceiling completed. To AS/NZS 2785, Appendix C, site Conditions, Installation and Inspections.

Installation generally

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.8 SETTING OUT

Set out the framing work true to line and square before starting erection.

3.9 INSTALL

Installation to AS/NZS 2785 minimum standards, and the systems Rondo Professional Design Manual and Rondo Building Services Pty Ltd requirements.

Allowance for support members:

- Space required by the loads on the system and the type of ceiling.

- For the installation of services and accessories, including ductwork, light fittings and diffusers.
- Additional back support or suspension members for the fixing of services and accessories to prevent distortion, overloading or excessive vertical deflection.
- For access for maintenance of services.

Allowance for a ceiling system where failure of any one suspension point does not cause a progressive failure of the ceiling.
Allowance for height adjustment with a length adjustment device at each suspension point, permitting length variation of at least 50mm.

If required, allow for notch grid members at the junction with the perimeter trim to make sure the ceiling lining lies flat on the perimeter trim. Do not attach the suspension system to the lip or flange of purlins.

Fix, erect and fit to finish rigid, plumb, square and true to line and face. Where components required cutting on site, use metal snips, fine-toothed band or hack saws. Adjust all suspension systems and clips by laser level until they are all level. Hangers and bracing are not to be fixed closer than 150mm to plenum building services.

Install all movement joints required.

Services support to conform to the following:

- If the service has not been designed to accept the ceiling load, do not fix suspension members to services (e.g. ductwork).
- If services obstruct the ceiling supports, provide bridging and suspension on each side of the services.
- Do not support services terminals on ceiling lining, unless specified.

3.10 BULKHEADS

Form bulkheads to manufacturer requirements. Diagonally brace at regular intervals to provide lateral stability. In addition to the dead load of the bulkhead, all bulkheads should be designed for the following minimum loads:

- 0.25 kPa laterally.
- 0.15 kPa vertically.

3.11 INSTALL SEISMIC RESTRAINTS

Install ceiling system seismic restrains and bracing as required to prevent lateral movement and resist the imposed horizontal seismic force, to AS/NZS 2785.

3.12 PENETRATIONS

To AS/NZS 2785 and NZS 4219 generally, with sprinkler systems to NZS 4219 and/or NZS 4541.

Accommodate recessed light fittings, air conditioning outlets and other electrical and/or mechanical services that are fixed to or pass through the ceiling system. Provide independent support for these as necessary.

3.13 ISOLATE

Isolate dissimilar metals with neoprene sheeting, tape or pipe lagging.

3.14 INSULATION

Installation to Rondo Professional Design Manual and Rondo Building Services Pty Ltd requirements. Fix, erect and fit to finish rigid, plumb, square and true to line and face.

3.15 LINING

Fix and finish lining boards to manufacturer and Rondo Building Services Pty Ltd requirements.

Install services before lining. Stagger sheet joins.

3.16 ACCESSIBILITY

Provide access to the ceiling system and the in-ceiling and above-ceiling services so that maintenance and removal of any part can be carried out without damage to the ceiling system or panels.

3.17 ACCESS PANEL

Install to Rondo Panther installation requirements.

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3.18 PROTECT EXISTING WORK

Protect adjacent existing work from damage during the installation.

Installation - Rondo KEY-LOCK Ceiling System

3.19 INSTALLATION

Install the Rondo KEY-LOCK suspension system to AS/NZS 2785, and the Rondo Professional Design Manual and KEY-LOCK® installation guide.

Screw-fix sheets to furring channel sections at the centres required by the ceiling lining manufacturer. Stagger joints and fully support on furring sections and primary sections at centres to suit the load and Rondo installation manual.
Refer to 5113 PLASTERBOARD LININGS for plasterboard and stopping specification.

Installation - Rondo XPRESS® Drywall Grid System

3.20 INSTALLATION

Install the Rondo XPRESS® Drywall Grid System to AS/NZS 2785, Rondo Professional Design Manual, Rondo XPRESS® Drywall Grid System Rondo brochure and Rondo Building Services Pty Ltd requirements.

Installation - Rondo Steel Stud Drywall Ceiling System

3.21 INSTALLATION - GENERAL

Installation to Rondo® Steel Stud Drywall Framing Systems Steel Framing Installation Guide, Rondo Professional Design Manual and Rondo Building Services Pty Ltd requirements. Fix, erect and fit to finish rigid, plumb, square and true to line and face.

3.22 INSTALLATION - STEEL STUD DRYWALL CEILING SYSTEM

Installation to Rondo Professional Design Manual and Rondo Building Services Pty Ltd requirements.

3.23 BRIDGING TRACK SECTIONS

Fit bridging in position with fasteners in accordance with the Rondo Professional Design Manual.

Completion

3.24 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.rondo.co.nz
Substitutions are not permitted.

4.1 ACOUSTIC RATED SYSTEMS

Location:	Refer to drawings and agreement between Naylor Love and Developer requirements
STC:	Refer to drawings and agreement between Naylor Love and Developer requirements

Performance - Wind (design by contractor)

4.2 DESIGN PARAMETERS WIND - DESIGN BY CONTRACTOR

Refer to Structural Engineering

Performance - Seismic (design by contractor)

4.3 DESIGN PARAMETERS SEISMIC - DESIGN BY CONTRACTOR

Refer to Structural Engineering

Rondo KEY-LOCK Ceiling System

4.4 RONDO KEY-LOCK SUSPENDED CEILING SYSTEM

Location:	Refer to Drawings
Type/Brand:	KEY-LOCK Suspended Ceiling System
FRR:	Refer to Drawings
Top Cross Rails (TCR):	#127 (25mm deep) #128 (38mm deep) - For fire rated solutions
Furring Channels (FC):	#129 (28mm deep) #155 (28mm deep) - 48mm wide, enabling negative board joint detail. #308 (16mm deep)
TCR to FC Joiners:	#139 (for 127 & 128 to 129 & 308) #159 (for 127 & 128 to 155)
Perimeter Trims:	#141 Seismic Heavy Duty Channel to suit 129 (28mm) #140 Channel to suit 129 (28mm) #142 Channel to suit 308 (16mm)
Suspension Brackets & Clips:	To suit substrate and component selection, Contact Rondo Building Services Pty Ltd

4.5 RONDO KEY-LOCK DIRECT FIX CEILING SYSTEM

Location:	Refer to Drawings
Type/Brand:	KEY-LOCK Direct Fix Ceiling System
FRR:	Refer to Drawings
Furring Channels (FC):	#308 (16mm deep) #129 (28mm deep) #155 (28mm deep) - 48mm wide, enabling negative board joint detail
Perimeter Trims:	#141 Seismic Heavy Duty Channel to suit 129 (28mm) #140 Channel to suit 129 (28mm) #142 Channel to suit 308 (16mm)
Fasteners direct fix:	To suit substrate and component selection, Contact Rondo Building Services Pty Ltd

4.6 RONDO KEY-LOCK BULKHEAD SYSTEM

Location:	Refer to Drawings
Type/Brand:	KEY-LOCK Bulkhead System
FRR:	Refer to Drawings

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Materials - Rondo XPRESS® Drywall Grid System

4.7 RONDO XPRESS® DRYWALL GRID SYSTEM

Location:	Refer to Drawings
Type/Brand:	Rondo XPRESS ® Drywall Grid System
Grid configuration:	Refer to grid configurations & load
Main Tee:	XD1 - 38mm (h) x 38mm (face) Main Tee XD1H - 38mm (h) x 38mm (face) Heavy Gauge Main Tee XD3 - 38mm (h) x 24mm (face) Main Tee XD3H - 38mm (h) x 24mm (face) Heavy Gauge Main Tee XDWS - 38mm (h) x 24mm (face) Wall to Wall Main Tee XDWH - 38mm (h) x 38mm (face) Heavy Gauge Wall to Wall Main Tee
Cross Tee:	XD2 - 38mm (h) x 38mm(face) Cross Tee XD4 - 38mm (h) x 24mm (face) Cross Tee
Wall Trim:	XD5 - 40mm (h) x 40mm (w) Wall Angle 553 - 35mm (h) x 35mm (w) Wall Angle XD6 - 40mm (h) x 38mm (w) x 19mm (w) Perimeter Channel WASL - 27mm (h) x 10mm (w) x 10mm (h) x 19mm (w) Shadowline Long Leg Wall Angle SA12 - 40mm (h) x 40mm (w) Wall Angle
Clips:	XDSC - Splice Clip - 180° XD10 - Transition Clip - 90° XD11 Acoustical Transition Clip - Rondo XPRESS® to Rondo DONN® XD12 - 100mm Fascia Drywall Clip XD13 - 150mm Fascia Drywall Clip XD14 - 200mm Fascia Drywall Clip XD16 Main Tee Separation Joint Clip XD17 - Seismic Clip XD19 - Strongback Clip XD36 - 3-Way Off-Module Connector
Suspension:	Suspension method and position dependant on load requirements. Rondo does not recommend mixing of suspension systems within the ceiling grid.
Direct fix brackets:	XD26 - Direct Fix Angle Bracket - 180 x 40mm XD27 - Direct Fix Angle Bracket - 120 x 40mm XD28 - Direct Fix Clip - 180mm Extenion Strip XD29 - Direct Fix Clip - 180 x 50mm
Control joints:	Refer to manual for details
Expansion Joints:	Refer to manual for details

Components

4.8 TRIM

Location:	Refer to drawings
Wall trim:	140, 141 with 129 furring channel, 142 with 308 furring channel
Bulkhead trim:	321 (13mm)

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Steel Stud Drywall Ceiling System

4.9 RONDO STEEL STUD AND TRACK CEILING SYSTEM

Location:	Refer to Drawings
Type/Brand:	Rondo Steel Stud and Track Ceiling System
FRR:	Refer to plasterboard manufacturers fire rated system documentation for required suspended ceiling system material and sizing requirements.
Ceiling studs:	Refer to design manual.
Wall track:	Refer to design manual.
Bridging:	Stud or track section, refer to design manual.
Fixing:	Refer to design manual.

Access Panels

4.10 PLASTERBOARD ACCESS PANEL

Location:	Refer to drawings
Brand:	Rondo PANTHER® Access Panel Systems
Type:	Formed to accept Plasterboard Insert sound rated
Size:	polymer frame, set bead for panel sizes. 300 x 300mm 450 x 450mm 530 x 530mm Metal frame, set bead 600 x 600mm

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5512DL DURAPLAN COMMERCIAL BATHROOM FIXTURES

1 GENERAL

This section relates to the supply and installation DuraPlan Systems Ltd commercial restroom fixtures. It includes:

- Duraline Bench Seating
- Durasafe Lockers
- Duraplan Privacy Screens

1.1 RELATED WORK

Refer to ~ for ~

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

BPS	Building Product Specifications
ISO 5660	Reaction to fire tests - Heat release, smoke production and mass loss ratio

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Duraline Bench Seating	Product Guide & Technical Guide
Duramac Vanities	Product Guide & Technical Guide
Durasafe Lockers	Product Guide & Technical Guide
Duraplan Privacy Screens	Product Guide & Technical Guide
DuraLam	Colour charts (refer to DuraPlan for availability and further information.)
Fire Report	BRANZ Fire Test Report and Group Number Classification FH18049-1 , dated 24 January 2024.

Manufacturer/supplier contact details

Company:	Duraplan Systems Ltd
Web:	www.duraplan.co.nz
Email:	sales@duraplan.co.nz
Telephone:	09 972 7682

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For compact laminate panel integrity
2 years	For hardware

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years	For installation when installed by a DuraPlan installation team

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

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Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be part of the DuraPlan installation team. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.9 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not be limited to:
Fully dimensioned layout plans, elevations and sections
Fixing details
Selected finishes

If requested provide the following additional information:
~

Submit shop drawings for review to ~.

- ~ working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication.

Performance

1.10 INTERIOR SURFACE FIRE PROPERTIES - WALLS & CEILING, GROUP NUMBER

DuraLam Antibacterial Compact Laminate has been tested to ISO 5660 and has been assigned the following Group Numbers in accordance with BPS, 8.5.1 Group Numbers:

DuraLam	Group Number 3

2 PRODUCTS

Materials

2.1 DURALINE BENCH SEATING

Duraline Bench Seating consists of a bench seat on a powder coated or galvanized mild steel or 316 stainless steel frame in various configurations including wall mounted or freestanding.

The bench options available are:

- 90mm x 35mm pine slats with polyurethane finish
- 90mm x 35mm hardboard slats with polyurethane finish
- 90mm x 13mm compact laminate slats
- solid 400mm wide x 13mm compact laminate sheet with machine slots.

Compact laminate available in DuraLam or Laminex colour range.
Note: Stainless steel coat hooks mounted on a rail positioned above the seating is an optional extra. Refer to SELECTIONS.

2.2 DURASAFE LOCKERS

Durasafe lockers manufactured from 13mm black core compact laminate doors, end and filler panels with 16mm/18mm MR Board carcase and powder coated aluminium trims.

Available in configurations of:

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- 1 tier
- 2 tier
- 3 tier
- 4 tier
- Z-tier

with a range lock options. Compact laminate available in DuraLam or Laminex colour range. Refer to SELECTIONS.

2.3 DURAPLAN PRIVACY SCREENS

Duraplan Privacy Screens manufactured from 13mm compact laminate panels with black core to IS EN 438-4. Edges polished finish only. Certified antimicrobial to JIS Z 2801 to prevent the growth of bacteria on the surface up to 99% within 24 hours. Wall fixed with extruded aluminium alloy 6060 with exposed face anodic coated 13mm x 30mm wall channel. Supported floor to ceiling with extruded aluminium alloy 6060 with exposed face anodic coated 40mm x 41mm square post.

Components

2.4 DURALINE BENCH SEAT FRAME

Powder coated or galvanized mild steel or 316 stainless steel bench seat frame. Available in:

- Wall mounted - single 400mm wide, complete with wall fixings
- Freestanding Cantilevered Frame CH - double 840mm wide with upstand
- Freestanding H Frame CH - double 840mm wide with upstand
- Freestanding N Frame - single 400mm wide or double 790mm wide
- Freestanding Cantilevered Frame - double 790mm wide
- Freestanding Cantilevered C Frame - single 400mm wide

2.5 FIXINGS

To suit substrate type, supplied by DuraPlan with units.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work. For wall hung brackets, ensure adequate solid blocking has been provided behind wall brackets.

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALL DURALINE BENCH SEATING

All seating is delivered to site pre-finished, pre-cut and ready for immediate installation in accordance with DuraPlan requirements. Install mounting frame brackets to either wall or floor with supplied fixings, ensuring brackets are mounted level, square, plumb and true to line.

If required, Install wall or frame mounted coat hooks and/or shelf unit with brackets & fixings supplied, in accordance with DuraPlan requirements and instructions.

3.6 INSTALL DURAMAC VANITIES

Install Duramac vanity units on wall hung brackets with supplied fixings in accordance with DuraPlan requirements and instructions. Ensure units are installed level, square, plumb and true to line and face.

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3.7 INSTALL DURASAFE LOCKERS

Install Durasafe lockers complete with all required components including locks, hinges, ventilation grills, hanging rods etc in accordance with DuraPlan requirements and instructions. Ensure units are installed level, square, plumb and true to line and face.

3.8 INSTALL DURALPLAN PRIVACY SCREENS

Install Duraplan privacy screens in accordance with DuraPlan requirements. Carry out the fixing, erection and fitting to finish rigid, square, plumb, and true to line and face.

Completion & Commissioning

3.9 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go www.duraplan.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Materials

4.1 DURALINE BENCH SEATING

Location:	Male & Female, End of Trip Facilities
Manufacturer:	DuraPlan Systems Ltd
Type:	Duraline Bench Seating
Application:	Locker plinth mounted & Shower cubicle
Length:	Locker plinth seating: - 2 x L shaped: 1600mm x 2400mm, 2000mm x 2000mm (Women's EOT) - 2 x L shaped: 1600mm x 2400mm, 2000mm x 2000mm (Men's EOT) Shower seats: - 1100w x 400d (per shower cubicle)
Frame type:	Wall hung with fixings to suit masonry/steel/timber/framed wall / single 400mm wide
Frame finish:	*Architect to confirm - bracket finish - colour near ordering time* - Galvanized or Powder coated mild steel-refer to Dulux powder coat colour range
Seat type/finish:	*Architect to confirm - colour near ordering time* Solid 13mm compact laminate with 20mm x 400mm machine slots
Accessories:	N/A

4.2 DURASAFE LOCKERS

Location:	Male & Female, End of Trip Facilities
Manufacturer:	DuraPlan Systems Ltd
Type:	Durasafe Lockers
Configuration:	Womens EOT: - 2 tier / 6 x 4No modules L shaped arrangement - 2 tier / 5No modules wide Mens EOT: - 2 tier / 6 x 4No modules L shaped arrangement - 2 tier / 5No modules wide
Dimensions	1600mm high x 450mm deep x 400mm wide overall
Finish/colour:	13mm Compact laminate / *Architect to confirm - colour near ordering time*
Lock:	RFID Lock
Hinge:	110 degree soft close cabinet hinge
Accessories:	Vent slots in locker doors - *Design TBC during shop drawing stage* 450h Timber constructed plinth with compact laminate facing panel

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4.3 DURAPLAN PRIVACY/SPLASH SCREENS

Location:	Male & Female, End of Trip Facilities
Manufacturer:	DuraPlan Systems Ltd
Type:	Duraplan Shower Splash Screens
Dimensions	2000mm high x 800mm wide overall
Pedestal height/type:	Floor channel 13mm x 30mm extruded aluminium alloy 6060 with exposed face anodic coated
Finish/colour:	13mm Compact laminate / *Architect to confirm - colour near ordering time*
Trim/finish:	Silver anodised aluminium finish - *Architect to confirm - colour near ordering time*
Accessories:	N/A

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5521 HARDWARE

1 GENERAL

This section covers the supply and installation of door and window hardware and furniture.
Refer to LockFit Hardware selections and specification

Documents

1.1 DOCUMENTS
Refer to the general section 1233 REFERENCED DOCUMENTS.

1.2 MANUFACTURER'S DOCUMENTS
Manufacturer's and supplier's documents relating to work in this section are:

Copies of the above literature are available from ~

Company:	LOCKFIT LIMITED Q
Web:	Home | Lockfit
Email:	conor@lockfit.co.nz
Telephone:	022 174 4099

Requirements

1.3 SUPPLIER
A specialist in the supply of hardware, employing an experienced architectural hardware representative available to assist during the course of the hardware installation.

1.4 SUBMIT A SUPPLIER'S SCHEDULE
Refer to LockFit Hardware selections and specification

2 PRODUCTS

2.1 DOOR HARDWARE
Refer to SELECTIONS for product selection.

Components

2.2 FIXINGS
Provide matching fixings, including screws, clips, bolts and brackets for hardware supplied.

3 EXECUTION

Conditions

3.1 RETAIN
Retain hardware in the manufacturer's original packaging. Ensure that units are complete with fixings and installation instructions. Label each unit separately with its hardware number and door/window number to match the submitted and approved schedule.

3.2 PACKAGE
Package required hardware units in clear plastic and label each package with its hardware and door/window number and location to match the drawings and the submitted and approved schedule. Place packages in cartons selected for "level", "location", and/or "sector" and label the packages and the cartons similarly.

3.3 STORE
Store hardware packages in a shelved, dry and securely locked area. Provide supervision when the secure area is unlocked and packages and cartons are being distributed; signing off each package from the schedule as released.

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Installation

3.4 INSPECTION

Before starting the hardware installation, check frames, doors, sashes and adjacent finishes are ready for the proper installation of the hardware.

3.5 LOCATE

Locate hardware units at heights and/or locations shown on the drawings, or as required to comply with relevant Codes and Standards. Before proceeding, confirm any dimension not shown or known.

3.6 CUTTING AND FITTING

Carry out cutting and fitting of the substrate necessary for installing any hardware unit before painting or finishing of that surface. Remove hardware when required for painting, placing it in the packaging or carton originally supplied and returning it to the secure store until ready for re-installation.

3.7 INSTALL HARDWARE

Install each hardware unit in accordance with the hardware manufacturer's requirements using templates and tools supplied or recommended by them. Set units level, plumb and true to line and required location, with all moving parts and actions freely and easily operating. Do not make any modifications to supplied units.

Completion

3.8 ADJUST

Adjust and check each operating hardware unit for correct and smooth functioning. Replace those units that cannot be adjusted if they do not function correctly. Clean units and adjoining surfaces upon completing their installation. Only use lubricant if and when recommended by the hardware manufacturer/supplier.

3.9 REPLACE

Replace damaged or marked elements.

3.10 LEAVE

Leave work with parts fully and freely working and to the standard required by following procedures.

3.11 REMOVE

Remove debris, unused materials and elements from the site.

3.12 PROTECT

Protect hardware units from damage or marking.

3.13 FINAL ADJUSTMENT

Where hardware is installed more than a month prior to project completion, return and make a final check and adjustment of hardware units to ensure they are operating correctly, fitted properly and are undamaged.

4 SELECTIONS

4.1 DOOR HARDWARE

Refer to LockFit selections and specification



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5531W WINDOW TREATMENTS INTERNAL ROLLER BLINDS

1 GENERAL

This section relates to the supply and fixing of Roll Blinds that is **NOT PART OF BASE BUILD, but connections in the Starke curtain walling are to be provided as part of base build**
It includes;

- Blinds
- Ceiling Recess Flush Boxes
- Single or Double rollers



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5811 EXTERNAL SIGNAGE

1 GENERAL

1.1 EXTERNAL SIGNAGE IN CONTRACT

5no. 1800 x 400 illuminated blank signage boxes Ground Level soffit, sign writing by tenant

Containment routes will be provided for future power supply to 2no. external signs located at Level 5. The curtain wall design will include allowance to support the weight of signage and will include support bracketry to suit a client supplied signage design, incorporated during the facade design and shop drawing process.

1.2 DIRECTORY SIGNAGE

Ground Level: Powder coated aluminium or similar (approx. 1m x2m in area)

Upper levels: Powder coated aluminium or similar (approx. 1m x2m in area)

1.3 INTERNAL SIGNAGE

The building shall be provided with statutory signage including that to indicate male, female and accessible toilets and fire exits.

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6122SF SIKA - FLOOR PREPARATION, LEVELLING, SCREEDS

1 GENERAL

This section relates to supply and application of Sikafloor Preparation products and components. It includes:

- Primers and bonding agents
- Cementitious products

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

WME	Wood moisture equivalent

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZS 3114	Specification for concrete surface finishes

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

- Sika Method Statement Evaluation and Preparation of Surfaces for Flooring Systems ver 1.4
- Sikadur® -32+ Product data Sheets
- Sika Emulsion -93 Product data Sheets
- Sikafloor® -01 Primer Product data Sheets
- Sikafloor® -045 Rapid Product data Sheets
- Sikafloor® -14 Prep N Prime Impact Product data Sheets
- Sikafloor® Level TOP Product data Sheets
- Sikafloor® Level -30 Product data Sheets
- Sikafloor® Level Ultra Product data Sheets
- Sikafloor® Level Eco Product data Sheets
- Sikafloor® EpoCem Modul Product data Sheets
- Sikafloor®-81 EpoCem Product data Sheets
- Sika® Level -315 F Product data Sheets
- Sika® Level SkimCoat Product data Sheets
- SikaScreed® -1 Product data Sheets
- SikaScreed® Binder Product data Sheets
- Sika BPIS Sikafloor® Level TOP
- Sika BPIS Sikafloor® Level Ultra
- Sika BPIS Sikafloor® Level -30
- Sika BPIS SikaScreed® -1
- Sika BPIS Sika® Level -315 F

Manufacturer/supplier contact details

Company:	Sika (NZ) Ltd
Web:	www.sika.co.nz
Email:	hunter.allan@nz.sika.com
Telephone:	0800 745 269

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

2 years	For material failure under normal conditions

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- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years For workmanship

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be trained and experienced in the use of specified Sika product. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.7 HEALTH AND SAFETY

Obtain material safety data sheet for each product. Comply with the required safety, transport, handling, storage and disposal procedures.

2 PRODUCTS

Primers and Bonding Agents

2.1 SIKADUR® -32+

Moisture tolerant, two part, structural epoxy bonding agent, made from epoxy resins and special fillers.

2.2 SIKA EMULSION -93

A waterproof dispersion bonding agent and mortar improver.

2.3 SIKAFLOOR® -01 PRIMER

Concentrated synthetic resin primer.

2.4 SIKAFLOOR® EPOCEM® MODUL

A two part water based epoxy resin primer and adhesion promoter for application of Sikafloor -81 EpoCem.

2.5 SIKAFLOOR® -14 PREP N PRIME IMPACT

Flexible, water-based, non-porous primer.

Trowel Applied Cementitious Products

2.6 SIKAFLOOR® -045 RAPID

Rapid setting, trowel applied, cementitious mortar up to 50mm thick.

2.7 SIKA® LEVEL SKIMCOAT

Trowel applied, one-component fast drying, cementitious skim coat up to 13mm thick.

2.8 SIKASCREED® -1

Pre-mixed cementitious screed.

2.9 SIKASCREED® BINDER

A cementitious binder screed based on hydraulic binders and special additives.

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Pumpable Self levelling Cementitious Products

2.10 SIKAFLOOR® LEVEL TOP
Pumpable, cementitious self-levelling compound.

2.11 SIKAFLOOR® LEVEL -30
Pumpable, polymer modified, self-levelling cementitious screed, for use on interior and exterior concrete substrate.

2.12 SIKAFLOOR® LEVEL ULTRA
Pumpable, fibre reinforced, self-levelling compound for use on interior and exterior concrete substrate.

2.13 SIKAFLOOR® LEVEL ECO
Pumpable, high build levelling underlayment compound for use on interior concrete substrate.

2.14 SIKAFLOOR® -81 EPOCEM®
A three part epoxy modified cementitious, fine texture mortar forming a self-levelling screed between 1.5mm to 3mm thick.

2.15 SIKA® LEVEL -315 F
Pumpable, fibre reinforced self-levelling compound. Applied in layers between 3mm -15mm thick.

2.16 SIKA EPOXY RESIN
Refer to SELECTIONS.

2.17 SIKAFLEX SEALANT
Refer to SELECTIONS.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS
Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 PRE-INSTALLATION REQUIREMENTS
Check work previously carried out and confirm it is of the required standard for this part of the work.

3.3 VENTILATION
Provide ventilation during application of Sika flooring systems.

Installation/application

3.4 STANDARDS AND TOLERANCES
Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 PREPARATION - GENERALLY
Clean surfaces so they are free of oil, grease, wax dirt, asphalt, curing compounds, latex and gypsum compounds, dust, paint, or any contaminants which might act as a bond breaker.

3.6 PREPARE EXISTING CONCRETE SUBSTRATE
Remove any weak, defective, damaged, or loose concrete from the floor substrate. Define the areas for removal with a 10mm deep saw-cuts to prevent feather edges occurring after removal. Exposed concrete to have a pull-off strength greater than 1.5MPa. Prepare concrete substrate to achieve a gripping profile that is clean, dry and free from dirt, grease, oils and any other forms of surface contamination.

Vacuum blast the concrete substrate to remove cement laitance and any existing coatings or contaminants. Chemically wash the surface to remove any residual contaminants.

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3.7 PREPARE EXISTING TIMBER SUBSTRATE

Remove all loose, unsound, or damaged substrate or surface material. Remove any existing levelling materials or glues. Sand surface to remove high points, protrusions, or uneven surfaces. Check substrate to have a maximum WME of 18%.

3.8 APPLICATION GENERALLY

Apply Sika Floor Preparation, Levelling and Screed in accordance with Sika's product data sheets and Method Statement.

3.9 SUBSTRATE PRIMERS

Apply primer evenly over the surface with brush or roller.

3.10 CONSTRUCTION JOINTS

Apply Sika epoxy resin to construction joints.

3.11 EXPANSION JOINTS

Prepare, fill and positively seal the expansion joints with Sikaflex sealant according to joint width and depth.

3.12 DIVIDER STRIPS

Use metal formwork or similar divider strips to separate, or terminate sections of the flooring work. Set strips to the appropriate heights and temporarily anchor and seal into place to eliminate movement and leakage during the placement / pouring of the Sikafloor flooring system.

3.13 MIXING AND PLACING OF PRODUCTS

Mix and apply Sika product in accordance with product data sheets.

3.14 FINISHED SURFACE PROFILE

Provide a U3 NZS 3114 standard finish.

3.15 CURING TIMES / OVERCOATING

Observe the requirements for waiting / curing times as defined in product technical data sheets, prior to applying any additional coatings.

Completion & Commissioning

3.16 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.sika.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Materials - Primers and Bonding Agents

4.1 SIKA EMULSION -93

Type/Brand:	Sika® Emulsion -93
Substrate:	Concrete

Materials - Trowel Applied Cementitious Products

4.2 SIKAFLOOR® -045 RAPID

Substrate:	Concrete
Primer:	Sikafloor® -14 Prep N Prime Impact
Cementitious mortar:	Sikafloor® -045 Rapid
Thickness:	1mm - 50mm

4.3 SIKA® LEVEL SKIMCOAT

Substrate:	Concrete Ceramic tiles, terrazzo Plywood
Primer:	Not required (concrete) Sikafloor® -01 Primer (porous subs Sikafloor® -14 Prep N Prime Impact (non-porous subs
SkimCoat:	Sika® Level SkimCoat
Thickness:	Up to 13mm

4.4 SIKASCREED® -1

Substrate:	Concrete
Bonding agent:	Sikadur® -32+
Screed:	SikaScreed® -1
Thickness:	12mm – 60mm (use Sikadur 32+ adhesive to bond to the substrate when thickness is less than 30mm)

4.5 SIKASCREED® BINDER

Substrate:	Concrete
Bonding agent:	Sikadur® -32+
Screed/Binder:	SikaScreed® Binder
Thickness:	12mm – 60mm (use Sikadur 32+ adhesive to bond to the substrate when thickness is less than 40mm)

Pumpable Self levelling Cementitious Products

4.6 SIKAFLOOR® LEVEL TOP

Substrate:	Concrete
Primer:	Sikafloor® -01 Primer (porous concrete substrate) Sikafloor® -14 Prep N Prime Impact (non-porous concrete substrate)
Levelling compound:	Sikafloor® Level TOP
Thickness:	1mm - 30mm (neat) 10mm - 50mm (bulked with 1-2mm aggregate)

4.7 SIKAFLOOR® LEVEL 30

Substrate:	Concrete (General) Exterior application substrate to be sealed. Contact Sika for further information For other substrates contact Sika NZ Ltd.
Primer:	Sikafloor® -01 Primer (normal use) Sikafloor® -14 Prep N Prime Impact Contact Sika NZ Ltd (high-load)
Levelling compound:	Sikafloor® Level 30
Thickness:	4mm – 30mm

4.8 SIKAFLOOR® LEVEL ULTRA

Substrate:	Concrete. For other substrates contact Sika NZ Ltd.
Primer:	Sikafloor® -01 Primer (porous) Sikafloor® -14 Prep N Prime Impact (non-porous)
Levelling compound:	Sikafloor® Level Ultra
Thickness:	1mm – 50mm

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4.9 SIKAFLOOR® LEVEL ECO

Substrate:	Concrete
Primer:	Sikafloor® -01 Primer (internal porous) Sikafloor® -14 Prep N Prime Impact (internal non-porous)
Levelling compound:	Sikafloor® Level Eco
Thickness:	3mm – 75mm

4.10 SIKAFLOOR® -81 EPOCEM®

Substrate:	Concrete
Primer:	Sikafloor® EpoCem® Modul
Levelling compound:	Sikafloor® -81 EpoCem®
Thickness:	1.5mm - 3mm 2mm minimum thickness when used as a temporary moisture barrier under Sikafloor epoxy floors.

4.11 SIKA® LEVEL -315 F

Substrate:	Ceramic Concrete PVC
Primer:	Sikafloor® -01 Primer (internal porous) Sikafloor® -14 Prep N Prime Impact (internal non-porous) Contact Sika NZ Ltd (heavy loads)
Levelling compound:	Sika® Level -315 F
Thickness:	3mm - 15mm

Sika Epoxy Resin and Sikaflex Sealant

4.12 SIKA EPOXY RESIN

Location:	Construction joint Static crack
Type/Brand:	Contact Sika NZ L
Substrate:	Contact Sika NZ L
Primer:	Contact Sika NZ L
Thickness:	Contact Sika NZ L

4.13 SIKAFLEX SEALANT

Location:	Expansion joint
Type/Brand:	Contact Sika NZ L
Substrate:	Contact Sika NZ L
Primer:	Contact Sika NZ L
Thickness:	Contact Sika NZ L

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6192 FLOORING SUBSTRATE PREPARATION

1 GENERAL

This section relates to the preparation of a flooring substrate for floor coverings over new floors. It only applies where floors need to be bought up to the required level

Documents

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 1859.2	Reconstituted wood-based panels - Specifications - Dry processed fibreboard
AS/NZS 1859.4	Reconstituted wood-based panels - Specifications - Wet processed fibreboard
NZS/AS 1884	Floor coverings - Resilient sheet and tiles - Installation practices
AS/NZS 2269.0	Plywood - Structural - Specifications
AS/NZS 2908.2	Cellulose-cement products - Flat sheet

Requirements - moisture in concrete slabs

1.2 MOISTURE CONTENT OF CONCRETE SLAB

Check moisture content to NZS/AS 1884, Appendix A and do not commence laying of floor covering until readings for the whole area show 75% relative humidity or less, for textile, resilient sheet and tile floor finishes and 60-70% for timber overlay floor finishes. If non-complying, the slab is to be sealed in accordance with this specification, refer to 4. SELECTIONS.

1.3 SEAL CONCRETE SLABS

Seal concrete slab to control moisture content.

2 PRODUCTS

Materials

2.1 FLOOR LEVELLING COMPOUND

Proprietary floor levelling compound. Refer to SELECTIONS for type.

2.2 CONCRETE CURE AND SEAL COMPOUND

Catalytic agent in a waterborne proprietary silicate base. Refer to SELECTIONS for type.

2.3 CONCRETE SEALER

Penetrating sealer or moisture cured polyurethane. Refer to SELECTIONS for type.

3 EXECUTION

Conditions

3.1 DO NOT START

Do not start work before the building is enclosed, all wet work is complete, doors are hung and lockable, finishes and trim complete and good lighting is available.

3.2 INSPECT

Inspect the substrate to ensure it is a suitable finish. Do not start work if it will not allow work of the required standard.

Application - substrate preparation

3.3 PREPARING NEW CONCRETE FLOOR

To be level, smooth, clean, cured and dried. Check moisture content to NZS/AS 1884, Appendix A. Add cure and seal catalytic agent to concrete or seal as required. Remove loose material and dust.

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3.4 SEALING OF CONCRETE FLOOR

Ensure the surface to be treated is clean, free of dirt, water, or any residues of sodium silicates, acrylic curing compounds, tilt slab release agents, paint adhesives, existing floor preparations, plasterboard sanding dust, plaster and other coatings. Where necessary grind the concrete prior to application of the sealing coat. Sealing to be in accordance with the manufacturer's specification.

Application - laying

3.5 FLOOR LEVELLING APPLICATION

Ensure good ventilation during application of levelling system. Apply systems to Manufacturers requirements and instructions, including mixing, applying, finishing and curing. Protect from damp, condensation and water for at least 24 hours once application is completed.

Completion

3.6 REPLACE

Replace damaged or marked elements.

3.7 REMOVE

Remove all debris, unused materials and elements from the site.

3.8 PROTECT

Protect completed work from damage for the period between completion of the preparation work and completion of flooring.

4 SELECTIONS

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6211 WALL TILING SYSTEMS

1 GENERAL

This section relates to the supply and installation of interior and exterior wall tiling systems:
It includes:

- Tiles
- Tile adhesives and grouts
- All relevant underlays, components and accessories necessary to complete installation.

1.1 RELATED WORK

Refer to 6221 FLOOR TILING SYSTEMS for floor tiling systems.

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

WMAI	Waterproofing Membrane Association NZ Inc

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

BPS	Building Product Specifications
NZBC E3/AS1	Internal moisture
NZBC E3/AS2	Internal moisture
AS 3958.1	Ceramic tiles - Guide to the installation of ceramic tiles
AS/NZS 4671	Steel reinforcing materials
AS/NZS 4858	Wet area membranes
AS ISO 13007.1	Ceramic tiles - Grouts and adhesives -Terms, definitions and specifications for adhesives
AS ISO 13007.3	Ceramic tiles - Grouts and adhesives - Terms, definitions and specifications for grouts
BS EN 12004.1	Adhesives for ceramic tiles. Requirements, assessment and verification of constancy of performance, classification and marking
BS EN 13888.1	Grouts for ceramic tiles. Requirements, classification, designation, marking and labelling.
WMAI	Code of Practice for Internal Wet-area Membrane Systems

Health & Safety at Work Act: 2015

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer/supplier contact details

Company:	Waterproofing Supplier (TBC by Naylor Love)

Warranties - tiling

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years	For installation of tiling systems

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

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Warranties - waterproofing

1.6 WARRANTY - INSTALLER/APPLICATOR - FOR WATERPROOFING SYSTEMS

Provide an installer/applicator warranty:

10 years — For installation of waterproofing systems

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS GENERALLY - TILING SYSTEMS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 QUALIFICATIONS - WATERPROOFING SYSTEMS

Workers to be approved / accredited / registered / licensed / certified by manufacturer / supplier. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.9 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.10 HEALTH & SAFETY - SILICA DUST

Comply with Health & Safety at Work Act:2015 and take all necessary precautions as recommended in WorkSafe guidelines for Respirable Crystalline Silica (RCS).

Compliance information

1.11 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Manufacturer / supplier warranty -waterproofing membrane
- Installer / applicator warranty -waterproofing membrane
- Producer Statement - Construction (PS3) from the waterproof membrane applicator / installer
- Other information required by the BCA in the Building Consent Approval documents.

Performance

1.12 SURFACE FIRE PROPERTIES FOR LININGS

Ceramic tiles have been assigned a Group Number of 1-S, as determined by BPS, Table 8.5.2.1: Material Group Numbers for some substrate and coating combinations.

1.13 INTERNAL MOISTURE - WET AREA MEMBRANES

Wet area membranes under tiled areas to comply with NZBC E3/AS1 & sections 1-4 of WMAI Code of Practice for Internal Wet-area Membrane Systems as modified by NZBC E3/AS2 for interior applications.

2 PRODUCTS

Materials

2.1 TILES

Refer to SELECTIONS.

Materials - preparation & underlays

2.2 LEVELLING COMPOUND / RENDER

Proprietary cementitious render / levelling compound for concrete / concrete masonry walls.

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2.3 WATERPROOFING MEMBRANE - INTERIOR

Proprietary interior wet area waterproofing system to AS/NZS 4858.

Materials - adhesive and grout

2.4 TILE ADHESIVE

Tile adhesive, and if required primer, to suit particular location/use. To AS ISO 13007.1 and BS EN 12004.1.

2.5 PROPRIETARY GROUT

Proprietary grout to suit particular location/use. To AS ISO 13007.3 and BS EN 13888.1.

Accessories

2.6 MOVEMENT AND EXPANSION JOINTS - RIGID JOINTS

Either, proprietary aluminium/brass with rubber or foam and compound infill, or rigid stabilised PVC sides with flexible central section.

2.7 MOVEMENT JOINT SEALANT

Neutral cured or acid-cured sealant to AS 3958.1, 2.7.5 Sealant.

2.8 TILE EDGE TRIMS

Refer to SELECTIONS.

2.9 SEALER

Proprietary sealer.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

Inspect tiles on delivery to ensure that they are as specified, from the same batch, of a consistent colour and pattern and sufficient to complete the work. Reject tiles that vary widely in colour or pattern and any tiles that are damaged.

3.2 ROUTINE MATTERS

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Ensure that the substrate, with the preparation called for in this section, are of the quality necessary to allow tiling of the required standard. Ensure all services and accessories are in place and located to suit the tile layout.

Ensure concrete or concrete masonry walls are fully cured and dry. Ensure new concrete has cured for 28 days or more.

If in doubt check for moisture content by hygrometer. Ensure moisture content is:

Concrete	75% relative humidity or less

3.4 CONFIRM LAYOUT

Before commencing work confirm the proposed layout of tiles, movement joints and other visual considerations of the finished work. Minimise in number of cut tiles and where possible, no cut tiles less than half size and only at the perimeter of the work.

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3.5 TEMPERATURE

Unless otherwise specified by selected tiling installation product manufacturer, do not carry out tiling where the air temperature is below 5°C or substrate temperature is above 40°C.

3.6 EXTERNAL CONDITIONS

Ensure any areas of external tiling, waterproofing, floor levelling, grouting or concrete repair must be protected from hot windy conditions, rain and/or frosts during application.

3.7 LIGHTING

Light the tile work as closely and clearly as possible to that of the finished lighting, to ensure that differences in plane surface are highlighted during installation.

Installation/application

3.8 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.9 GENERALLY

Prepare surface and complete tiling installation in accordance with AS 3958.1 and if required complete interior waterproof membrane installation to sections 1-4 of WMAI Code of Practice for Internal Wet-area Membrane Systems as modified by NZBC E3/AS2.

Application - substrate preparation

3.10 PREPARE SUBSTRATES

Prepare backgrounds as described in AS 3958.1, Section 4. All surfaces to be structurally sound, dry, clean and free from movement, dirt, dust, oil, grease, wax and any other loose or contaminating materials. Concrete substrates should also be free of laitance, efflorescence, curing compounds and release agents.

Remove any projections or unevenness. Substrate material must be even and true with a maximum variation in plane of no greater than 4mm in every 2m, in accordance with AS 3958.1, section 4.

Suitably prepare backgrounds and substrates in accordance with the manufacturer's instructions of the tiling installation products for the relevant substrate type.

3.11 PRIME SUBSTRATE

If required, surfaces should be primed as per manufacturer's instructions for the selected products and substrate types. Refer to SELECTIONS.

3.12 LEVELLING SUBSTRATE

Smooth out irregular concrete / concrete masonry substrates using proprietary levelling compound or render in accordance with manufacturer's requirements. Ensure maximum variation in plane of no greater than 4mm in every 2m, in accordance with AS 3958.1, section 4.

Application - waterproofing

3.13 INSTALL WATERPROOFING MEMBRANE - INTERIOR WET AREAS

Install interior waterproofing membrane to manufacturers requirements and in accordance with NZBC E3/AS1 and sections 1-4 of WMAI Code of Practice for Internal Wet-area Membrane Systems as modified by NZBC E3/AS2.

3.14 INSPECT - INTERIOR WET AREAS

Prior to application of tiling over, visually inspect waterproof membrane in accordance to WMAI Code of Practice for Internal Wet-area Membrane Systems, 4.0.5. Make good any damage that is identified in accordance with waterproof membrane manufacturer/supplier requirements.

Application -tiling

3.15 FITTING TILES

Setting out, cutting and fitting of tiles to be as described in AS 3958.1, section 5. If not shown on drawings, confirm set out, bond and pattern before installation.

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- Ensure cut edges are smooth and installed without jagged or flaked edges.
- Always use whole tiles or if tiles have to be cut the largest portion of a cut tile possible.
- Maintain the heights of wall tile work in full courses to the nearest dimension.
- Within allowed tolerances, ensure corners of tiles are flush and level with corners of adjacent tiles.
- Keep joint lines, including mitres, straight and of an even width.
- Fully bed trim units, moulded or shaped pieces and other accessories with an appropriate bedding material.
- Fix accessories level, plumb and true to the designated projection at detailed locations and heights.

3.16 TILE FINISH AND JOINTS

Provide tile finish and joints, including tolerances, as described in AS 3958.1, 5.4.6. Joint widths to be suited to tile and to the manufacturer's instructions.

- Ensure finished surfaces are flat and true to a tolerance of ±4mm in 2 metres from the required plane.
- Lippage between adjacent tiles shall not exceed 2mm and where joint widths are less than 3mm wide lippage shall not exceed 1mm. For tiles ground flat, such as polished tiles, lippage shall not exceed 1.5mm.
- Ensure joint widths are consistent throughout the installation, measured at the tile face.
- Ensure joint alignment is consistent throughout the installation and to a tolerance of ±4mm in 2 metres from the detailed joint alignment.
- Clean surplus bedding material from joint spaces and tile surface.

3.17 ADHESIVE APPLICATION - THIN BED

Apply a thin bed of selected tile adhesive to the adhesive manufacturer's requirements, generally final bed thickness does not exceed 3mm. Install using the following methods:

Notched trowel method

- Adhesive application to be as described in AS 3958.1, 5.6.2(a) and to adhesive manufacturers requirements. Apply adhesive to substrate to a uniform thickness and rib using notched trowel. Select trowel square notch size to suit tile size and type, to achieve full coverage. Press tile firmly onto substrate and beat into place. Additional back buttering of tiles may also be required, usually required for tiles 400x400mm and larger.

Floating method

- Adhesive application to be as described in AS 3958.1, 5.6.2(b) and to adhesive manufacturers requirements. Apply adhesive to substrate to a uniform thickness. Apply tiles with a twisting or sliding action and tap back firmly into the floated bedding.

Buttering method

- Adhesive application to be as described in AS 3958.1, 5.6.2(c) and to adhesive manufacturers requirements. Apply adhesive evenly to the back of each tile with a flat edged trowel. Press tile firmly onto substrate and tap into place. This method is not suitable for mosaic tile installation.

Tiles in awkward locations

- The buttering method may be required, or fixing might be necessary to achieve full bedding, even though the notched trowel method is used generally.

Ensure that the whole of the back of the tile is in good contact with the adhesive with no voids. Remove a tile periodically during installation to ensure correct coverage. Do not fix tiles over skinned adhesive.

3.18 ADHESIVE APPLICATION - THICK BED

Apply a floated thick bed of selected tile adhesive to substrate, as described in AS 3958.1, 5.6.3 and to adhesive manufacturer's requirements. Generally, to an average bed thickness of 6mm, ensuring maximum bed thickness is in accordance with adhesive manufacturers requirements.

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If required by the adhesive manufacturer notch surface with a trowel in the manner of in AS 3958.1, 5.6.2(a) Notched Method or provide a light ribbing only of surface.

Alternatively, the buttered method as described in AS 3958.1, 5.6.2(c) or a combined method may be required. Carry out in accordance adhesive manufacturers requirements. This is not suitable for mosaic tile installation.

Press tile firmly onto substrate then tap and beat into place. Ensure that the whole of the back of the tile is in good contact with the adhesive with no voids. Remove a tile periodically during installation to ensure correct coverage. Do not fix tiles over skinned adhesive.

3.19 INSTALL TRIMS

Accurately locate and fully bed edge trim units, dividing strips, moulded or shaped pieces and other accessories with an appropriate bedding material. Fix accessories level, plumb and true to the designated projection at detailed locations and heights.

3.20 SEALING

Apply selected sealer to tiling in accordance with manufacturer's requirements.

3.21 APPLY GROUTING

Remove any spacer inserts, prepare joints and apply grout in accordance with manufacturers requirements and as described in AS 3958.1, 5.7 Grouting. Ensure finish is uniform in colour, smooth and without voids, pinholes or low spots.

Application - movement joints

3.22 FORM MOVEMENT AND EXPANSION JOINTS

Install movement joints in accordance with AS 3958.1, 5.4.5 Movement Joints. Joints to go right through the tile and bed to the background, maintaining any waterproofing.

Movement joints to walls to be a minimum of 6mm wide and to be located:

- Over existing movement joints
- At junction between different background materials
- Where tiling abuts other materials, including sanitary fixtures and windows/doors frames.
- At inter-storey height horizontally and at 3m to 4.5m apart vertically.
- At internal vertical corners in shower compartments.

3.23 MOVEMENT AND EXPANSION JOINTS, INSTALL RIGID JOINTS

Metal or plastic joints, refer to SELECTIONS.
Accurately locate as detailed and fix joints in situ, with the bedding, or on top of the bedding, to finish flush with the installed tile and to the tile manufacturer's requirements. Fit and fix rubber/rubber compound inserts to finish flush.

3.24 MOVEMENT AND EXPANSION JOINTS, INSTALL COMPOUND/SEALANT FILL

Carefully clean out the joint, if required install bond breaker or backing rod to control width/depth ratio, and fill with compound/sealant placed by gun. After the correct interval, finish the surface off smooth, and flush on flat areas or concave in corners, to the compound/sealant manufacturer's requirements.

Cleaning

3.25 CLEAN TILES

Upon completion of setting and grouting, thoroughly sponge and wash the tiles to leave them completely clean and without blemish. Finally polish glazed tiles with a clean dry cloth.

Completion

3.26 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

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Substitutions are not permitted to the following, unless stated otherwise.

Materials - Tiles

4.1 WALL TILES

Location:	Refer to Drawings and Schedule within drawing package
Supplier:	To be confirmed with Naylor Love
Tile type:	Refer to Drawings and Schedule within drawing package
Tile colour:	Refer to Drawings and Schedule within drawing package
Tile size:	Refer to Drawings and Schedule within drawing package
Grout colour:	To be worked through with tiler once all tiles texture/colour has been confirmed
Grout width:	To be worked through with tiler once all tile types have been confirmed
Sealant colour:	clear

Materials - preparation & underlays

4.2 WATERPROOFING MEMBRANE - INTERIOR

Location:	Refer to drawings that note the critical zones of waterproofing required to walls
Primer:	Check selected waterproofing membrane for primer requirements

Materials - adhesive and grout

4.3 TILE ADHESIVE

Location:	Internal Floor and wall tiles
Manufacture	Cemix Group
Trade name/number	Cemix Ultraline Grout

4.4 GROUT

Location:	Wall Tiles
Manufacture / Trade Name	Mapei
Colour:	Refer to relevant tile selection for grout colour
Grout width:	Refer to relevant tile selection for grout joint width

Accessories

4.5 MOVEMENT AND EXPANSION JOINTS - RIGID JOINTS

Location:	Perimeter and movement Joints
Manufacture / Trade Name	Mapei

4.6 MOVEMENT JOINT SEALANT

Location:	Perimeter and movement Joints
Manufacture / Trade Name	Mapei
Colour:	Refer to relevant tile selection for sealant colour

Spares & maintenance products

4.7 SPARES & MAINTENANCE PRODUCTS

Refer to the general section 1270 CONSTRUCTION for details of how spares and maintenance products will be handled. Provide the following spares and maintenance products:

Item:	Wall and Floor Tiles
Quantity:	1x pack/box per tile type

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6211 WATERPROOFING UNDER TILES TO WEST AREAS

1 SELECTIONS

1.1 SIKALASTIC -220 W - INTERNAL

One component, ready to use, water-based resin liquid applied membrane for waterproofing under tiles on floors and walls in wet areas, in internal applications. Supported by BRANZ Appraisal 812 (Internal).



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6221 FLOOR TILING SYSTEMS

1 GENERAL

This section relates to the supply and installation of interior and exterior floor tiling systems. It includes:

- Tiles
- Tile adhesives and grouts
- All relevant underlays, components and accessories necessary to complete installation

1.1 RELATED WORK

Refer to 6211 WALL TILING for wall tiling systems.

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

WMAI	Waterproofing Membrane Association NZ Inc

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC D1/AS1	Access routes
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZBC E3/AS1	Internal moisture
NZBC E3/AS2	Internal moisture
AS/NZS 2908.2	Cellulose-cement products - Flat sheets
AS 3958.1	Ceramic tiles - Guide to the installation of ceramic tiles
NZS 4121	Design for access and mobility - Buildings and associated facilities
AS/NZS 4671	Steel reinforcing materials
AS/NZS 4858	Wet area membranes
AS ISO 13007.1	Ceramic tiles - Grouts and adhesives: Terms, definitions and specifications for adhesives
AS ISO 13007.3	Ceramic tiles - Grouts and adhesives: Terms, definitions and specifications for grouts
BS EN 12004.1	Adhesives for ceramic tiles. Requirements, assessment and verification of constancy of performance, classification and marking
BS EN 13888.1	Grouts for ceramic tiles. Requirements, classification, designation, marking and labelling.
WMAI	Code of Practice for Internal Wet-area Membrane Systems

Health & Safety at Work Act: 2015

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacture/supplier contact details

Company:	Waterproofing Supplier (TBC by Naylor Love)

Warranties - tiling

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years:	For installation of tiling systems

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT).
- Commence the warranty from the date of practical completion of the contract works.

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Refer to the general section 1237 WARRANTIES for additional requirements.

Warranties - waterproofing

1.6 WARRANTY - MANUFACTURER/SUPPLIER - FOR WATERPROOFING SYSTEMS

Provide a material manufacturer/supplier warranty:

10 years For waterproofing system

- Provide this warranty on manufacturer/supplier standard warranty form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS - TILING SYSTEMS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 QUALIFICATIONS - WATERPROOFING SYSTEMS

Workers to be approved / accredited / registered / licensed / certified by manufacturer / supplier. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.9 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.10 HEALTH & SAFETY - SILICA DUST

Comply with Health & Safety at Work Act:2015 and take all necessary precautions as recommended in WorkSafe guidelines for Respirable Crystalline Silica (RCS).

Compliance information

1.11 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Manufacturer / supplier warranty -waterproofing membrane
- Installer / applicator warranty -waterproofing membrane
- Producer Statement - Construction (PS3) from the waterproof membrane applicator / installer
- Other information required by the BCA in the Building Consent Approval documents.

Performance

1.12 SURFACE FIRE PERFORMANCE - NON-COMBUSTIBLE

Tiles composed entirely of ceramic are non-combustible.

1.13 INTERNAL / EXTERNAL MOISTURE - WATERPROOFING SYSTEMS

Wet area membranes under tiled areas to comply with NZBC E2/AS1 for exterior applications, NZBC E3/AS1 & sections 1-4 of WMAI Code of Practice for Code of Practice for Internal Wet-area Membrane Systems as modified by E3/AS2 for interior applications.

Performance - Slip resistance

1.14 SLIP RESISTANCE - SURFACES EXEMPT FROM TESTING

Walking surfaces comply with NZBC D1/AS1, Table 2 for slip resistance requirements and are exempt from testing.



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2 PRODUCTS

Materials

2.1 TILES
Refer to SELECTIONS.

Materials - preparation & underlays

2.2 FLOOR LEVELLING COMPOUND
Proprietary floor levelling compound.

2.3 PROPRIETARY SCREED
Manufactured screed systems.

Materials - waterproofing

2.4 WATERPROOFING MEMBRANE - INTERIOR
Proprietary interior wet area waterproofing system to AS/NZS 4858.

Materials - adhesive and grout

2.5 TILE ADHESIVE
Tile adhesive to suit particular location/use, and if required primer. To AS ISO 13007.1 and BS EN 12004.1.

2.6 PROPRIETARY GROUT
Proprietary grout to suit particular location/use. To AS ISO 13007.3 and BS EN 13888.1.

Accessories

2.7 MOVEMENT AND EXPANSION JOINTS - RIGID JOINTS
Either, proprietary aluminium/brass with rubber or foam and compound infill, or rigid stabilised PVC sides with flexible central section.

2.8 MOVEMENT JOINT SEALANT
Neutral cured or acid cured sealant to AS 3958.1, 2.7.5 Sealants.

2.9 TILE EDGE TRIMS
Refer to SELECTIONS.

2.10 SEALER
Proprietary sealer.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE AND HANDLING
Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

Inspect tiles on delivery to ensure that they are as specified, from the same batch, of a consistent colour and pattern and sufficient to complete the work. Reject tiles that vary widely in colour or pattern and any tiles that are damaged.

3.2 ROUTINE MATTERS
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS
Check work previously carried out and confirm it is of the required standard for this part of the work.

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Ensure that the substrate, with the preparation called for in this section, are of the quality necessary to allow tiling of the required standard and that all services and accessories are in place and located to suit the tile layout.

Ensure concrete floors are fully cured and dry. New concrete must have cured for 28 days or more.

If in doubt check for moisture content by hygrometer. Ensure moisture content is:
Concrete 75% relative humidity or less

3.4 CONFIRM LAYOUT

Before commencing work confirm the proposed layout of tiles and expansion joints and other visual considerations of the finished work. Minimise in number of cut tiles and where possible, no cut tiles less than half size and only at the perimeter of the work.

3.5 TEMPERATURE

Unless otherwise specified by selected tiling product manufacturer, do not carry out tiling where the air temperature is below 5°C or substrate temperature is above 40°C.

3.6 EXTERNAL CONDITIONS

Ensure any areas of external tiling, waterproofing, floor levelling, grouting or concrete repair must be protected from hot windy conditions, rain and/or frosts during application.

3.7 LIGHTING

Light the tile work as closely and clearly as possible to that of the finished lighting, to ensure that differences in plane surface are highlighted during installation.

Installation/application

3.8 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.9 GENERALLY

Prepare surface and complete tiling installation in accordance with AS 3958.1 and if required complete interior waterproof membrane installation to sections 1-4 of WMAI Code of Practice for Interior Wet Area Membrane Systems as modified by E3/AS2 or exterior waterproofing to NZBC E2/AS1.

Application - substrate preparation

3.10 PREPARE SUBSTRATES

Prepare backgrounds as described in AS 3958.1, Section 4. All surfaces to be structurally sound, dry, clean and free from movement, dirt, dust, oil, grease, wax and any other loose or contaminating materials. Concrete substrates should also be free of laitance, efflorescence, curing compounds and release agents. Remove any projections or unevenness.

Concrete floor substrates, after any levelling compounds or screeds applied, must be even and true with a maximum variation in accordance with AS 3958.1 Table 4.3:

- For adhesive fixing, thin bed 5mm in every 3 m
- For adhesive fixing, thick bed 10mm in every 3 m
- For mortar cement fixing, 5mm in every 3m

Suitably prepare backgrounds and substrates in accordance with the manufacturer's instructions of the tiling installation products for the relevant substrate type.

3.11 PRIME SUBSTRATES

Surfaces should be primed as per manufacturer's instructions for the selected products and substrate types. Refer to SELECTIONS.

3.12 FLOOR LEVELLING

Ensure all existing surfaces are smooth and level. If levelling is required, prepare for and apply floor levelling compounds to manufacturer’s instructions.

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Application - underlays

3.13 INSTALL WATERPROOFING MEMBRANE - INTERIOR WET AREAS

Install waterproofing membrane to manufacturers requirements and in accordance with NZBC E3/AS1 and sections 1-4 of WMAI Code of Practice for Interior Wet Area Membrane Systems as modified by E3/AS2.

3.14 INSPECT & FLOOD TEST - INTERIOR WATERPROOF MEMBRANE

Prior to application of tiling over, visually inspect and flood test waterproof membrane system, in accordance to WMAI Code of Practice for Interior Wet Area Membrane Systems, 4.0.5. Make good any damage that is identified in accordance with waterproof membrane manufacturer/supplier requirements.

Application - screeds

3.15 FLOOR SCREEDS

Form screeds to manufacturer's instructions with a deviation from plane of not more than 5mm over 3 metres. Where specified, place galvanized steel mesh over with spacers to centralise it in the floor screed. Lap the reinforcing mesh at least one full mesh and do not butt against vertical surfaces.

3.16 FLOOR SCREED TO FALLS

Form screeds, to manufacturer's instructions, in areas where water is used in significant amounts with a deviation from plane of not more than 5mm over 3 metres.

Unless otherwise specified form screeds with the following falls:

1 : 40 minimum	For tiled decks which also acts as a roof
1 : 60 minimum	For paving over ground
1 : 50 minimum	For unenclosed shower bases (to NZBC E3/AS1, 3.3.5)
1 : 60 minimum	For enclosed shower bases
1 : 50 minimum	For shower bases for people with disabilities (to NZS 4121, 10.5.11.3 (b).)
1 : 60 minimum	For commercial kitchens or similar

Application –tiling

3.17 FITTING TILES

Setting out, cutting and fitting of tiles to be as described in AS 3958.1. If not shown on drawings, confirm set out, bond and pattern before installation.

- Ensure cut edges are smooth and installed without jagged or flaked edges.
- Always use whole tiles or if tiles have to be cut the largest portion of a cut tile possible.
- Maintain the heights of wall tile work in full courses to the nearest dimension.
- Within allowed tolerances, ensure corners of tiles are flush and level with corners of adjacent tiles.
- Keep joint lines, including mitres, straight and of an even width.
- Fully bed trim units, moulded or shaped pieces and other accessories with an appropriate bedding material.
- Fix accessories level, plumb and true to the designated projection at detailed locations and heights.

3.18 TILE FINISH AND JOINTS

Provide tile finish and joints, including tolerances, as described in AS 3958.1, 5.4.6. Joint widths to be suited to tile and to the manufacturer's instructions.

- Ensure finished surfaces are flat and true to a tolerance of ±4mm in 2 metres from the required plane.
- Lippage between adjacent tiles shall not exceed 2mm and where joint widths are less than 3mm wide lippage shall not exceed 1mm. For tiles ground flat, such as polished tiles, lippage shall not exceed 1.5mm.
- Ensure joint widths are consistent throughout the installation, measured at the tile face.
- Ensure joint alignment is consistent throughout the installation and to a tolerance of ±4mm in 2 metres from the detailed joint alignment.

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- Clean surplus bedding material from joint spaces and tile surface.

3.19 ADHESIVE APPLICATION - THIN BED

Apply a thin bed of selected tile adhesive to the adhesive manufacturer's requirements, generally final bed thickness does not exceed 3mm. Install using the following methods:

Notched trowel method

- Adhesive application to be as described in AS 3958.1, 5.6.2(a) and to adhesive manufacturers requirements. Apply adhesive to substrate to a uniform thickness and rib using notched trowel. Select trowel square notch size to suit tile size and type, to achieve full coverage. Press tile firmly onto substrate and beat into place. Additional back buttering of tiles may also be required, usually required for tiles 400x400mm and larger.

Floating method

- Adhesive application to be as described in AS 3958.1, 5.6.2(b) and to adhesive manufacturers requirements. Apply adhesive to substrate to a uniform thickness. Apply tiles with a twisting or sliding action and tap back firmly into the floated bedding.

Buttering method

- Adhesive application to be as described in AS 3958.1, 5.6.2(c) and to adhesive manufacturers requirements. Apply adhesive evenly to the back of each tile with a flat edged trowel. Press tile firmly onto substrate and tap into place. This method is not suitable for mosaic tile installation.

Tiles in awkward locations

- The buttering method may be required, or fixing might be necessary to achieve full bedding, even though the notched trowel method is used generally.

Ensure that the whole of the back of the tile is in good contact with the adhesive with no voids. Remove a tile periodically during installation to ensure correct coverage. Do not fix tiles over skinned adhesive

3.20 ADHESIVE APPLICATION - THICK BED

Apply a floated thick bed of selected tile adhesive to substrate, as described in AS 3958.1, 5.6.3 and to adhesive manufacturer's requirements. Generally, to an average bed thickness of 6mm, ensuring maximum bed thickness is in accordance with adhesive manufacturers requirements.

If required by the adhesive manufacturer notch surface with a trowel in the manner of in AS 3958.1, 5.6.2(a) Notched Method or provide a light ribbing only of surface.

Alternatively, the buttered method as described in AS 3958.1, 5.6.2(c) or a combined method may be required. Carry out in accordance adhesive manufacturers requirements. This is not suitable for mosaic tile installation.

Press tile firmly onto substrate then tap and beat into place. Ensure that the whole of the back of the tile is in good contact with the adhesive with no voids. Remove a tile periodically during installation to ensure correct coverage. Do not fix tiles over skinned adhesive.

3.21 INSTALL TRIMS

Accurately locate and fully bed edge trim units, dividing strips, moulded or shaped pieces and other accessories with an appropriate bedding material. Fix accessories level, plumb and true to the designated projection at detailed locations and heights.

3.22 SEALING

Apply selected sealer to tiling in accordance with manufacturer's requirements.

3.23 APPLY GROUTING

Remove spacer inserts, prepare joint, apply and finish off grout to the manufacturer's requirements and as described in AS 3958.1, 5.7 Grouting. Ensure grout finish is uniform in colour, smooth and without voids, pinholes or low spots.

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Application - movement joints

3.24 FORM MOVEMENT AND EXPANSION JOINTS

Install movement joints in accordance with AS 3958.1, 5.4.5 Movement Joints. Joints to go right through the tile and bed to the background, maintaining any waterproofing.

Joints, except those with reinforced edges, subject to traffic heavier than light pedestrian should not be wider than 10mm. Movement joints to floor to be located at:

- Over existing movement joints
- Intermediate movement joints to be provided to internal floors at approximately 4.5m centres where any floor dimension exceeds 9m or 6m if subjected to direct sunlight.
- Intermediate movement joints to be provided to external floors at approximately 4.5m centres where any floor dimension exceeds 4.5m.
- At perimeter where abutting perimeter walls, columns, curbs and steps. Also, where there is a change of conditions such as under-floor heating, substrate type or tile type.

3.25 MOVEMENT AND EXPANSION JOINTS, INSTALL RIGID JOINTS

Metal or plastic joints, refer to SELECTIONS.

Accurately locate as detailed and fix joints in situ, with the bedding, or on top of the bedding, to finish flush with the installed tile and to the tile manufacturer's requirements. Fit and fix rubber/rubber compound inserts to finish flush.

3.26 MOVEMENT AND EXPANSION JOINTS, INSTALL COMPOUND/SEALANT FILL

Carefully clean out the joint, if required install bond breaker or backing rod to control width/depth ratio, and fill with compound/sealant placed by gun. After the correct interval, finish the surface off smooth, and flush on flat areas or concave in corners, to the compound/sealant manufacturer's requirements.

Cleaning

3.27 CLEAN TILES

Upon completion of setting and grouting, thoroughly sponge and wash the tiles to leave them completely clean and without blemish. Finally polish glazed tiles with a clean dry cloth.

Completion

3.28 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

Substitutions are not permitted to the following, unless stated otherwise.

Materials - Tiles

4.1 FLOOR TILES

Location:	Refer to Drawings and Schedule within the drawing package
Supplier:	To be confirmed with Naylor Love
Tile type:	Refer to Drawings and Schedule within the drawing package
Tile colour:	Refer to Drawings and Schedule within the drawing package
Tile size:	Refer to Drawings and Schedule within the drawing package
Grout width:	To be worked through with tiler once all tiles texture/colour has been confirmed
Grout colour:	To be worked through with tiler once all types have been confirmed
Sealant colour:	clear

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Materials - preparation & underlays

4.2 WATERPROOFING MEMBRANE - INTERIOR

Location:	Refer to drawings the note the critical zones of waterproofing required to floors
Substrate:	Concrete
Primer:	Check selected waterproofing membrane for primer requirements

Materials - adhesive and grout

4.3 TILE ADHESIVE

Location:	Internal Floor and wall tiles
Manufacture	Cemix Group
Trade name/number	Cemix Ultraline Grout

4.4 GROUT

Location:	Floor Tiles
Manufacture/Trade Name	Mapei
Colour:	Refer to relevant tile selection for grout colour
Grout width:	Refer to relevant tile selection for grout joint width

Accessories

4.5 MOVEMENT AND EXPANSION JOINTS - RIGID JOINTS

Location;	Perimeter and movement Joints
Manufacture/Trade Name	Mapei

4.6 MOVEMENT AND EXPANSION JOINTS - SEALANT

Location:	Perimeter and movement Joints
Manufacture/Trade Name	Mapei
Colour:	Refer to relevant tile selection for sealant colour

Spares & maintenance products

4.7 SPARES & MAINTENANCE PRODUCTS

Refer to the general section 1270 CONSTRUCTION for details of how spares and maintenance products will be handled. Provide the following spares and maintenance products:

Item:	Wall and Floor Tiles
Quantity:	1x pack/box per tile type

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6411AD ADVANCE VINYL SURFACING

1 GENERAL

This section relates to the supply and installation of Advance Flooring New Zealand Ltd vinyl surfacing.

It includes:

- Vinyl sheet flooring
- Vinyl sheet wall coverings
- Accessories and Trims

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

BPN	British Pendulum Number
ISTS	Independent Slip Testing Services
PUR	Polyurethane
PVC	Poly-Vinyl Chloride
SRV	Slip Resistance Value
UFH	Underfloor heating

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZS AS 1884	Floor coverings - Resilient sheet and tiles - Installation practices
AS 4586	Slip resistance classification of new pedestrian surface materials
EN ISO 9239-1:2010	Reaction to fire tests for floorings - Determination of the burning behaviour using a radiant heat source
IEC 61340.4.1	Electrostatics - Standard test methods for specific applications - Electrical resistance of floor coverings and installed floors
EN 1081	Resilient, laminate and modular multilayer floor coverings - Determination of the electrical resistance
EN 13501-1	Fire classification of construction products and building elements, classification using data from reaction to fire tests
BPS	Building Product Specifications

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
Advance Flooring Installation Instructions
Advance Flooring Maintenance Instructions
Advance Flooring Product Brochures
Fire Test Reports
ISTS Slip Resistance Test Report for Strong Safety Vinyl, April 2024
Static Dissipative Floors Installation Guideline

Manufacturer/supplier contact details

Company:	Advance Flooring New Zealand Ltd
Web:	www.advanceflooring.co.nz
Email:	sales@advanceflooring.co.nz
Telephone:	0508 238 262

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Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty

10 years For materials

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 year For Installation

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

1.8 TEST - STATIC CONTROL

Test static control flooring to IEC 61340.4.1 or EN 1081 and provide a certificate of compliance.

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:

- Advance Flooring Maintenance Instructions

Provide this information prior to practical completion.

Performance - General

1.10 SURFACE FIRE PROPERTIES FOR FLOORING

Advance sheet vinyl products for flooring have been tested to EN ISO 9239-1 and achieve the minimum Critical Radiant Flux requirements of NZBC C/AS2, Table 4.12.3.1: Critical radiant flux requirements for flooring (kW/m2).

1.11 SURFACE FIRE PROPERTIES FOR LININGS

Advance sheet vinyl for linings is tested to EN 13501-1 to achieve a group Number 1-S (EN 13501-1 Class B smoke production rating s1)

Performance - Slip resistance

1.12 SLIP RESISTANCE - SURFACES EXEMPT FROM TESTING

Walking surfaces comply with NZBC D1/AS1, Table 2 for slip resistance requirements and are exempt from testing.

1.13 SLIP RESISTANCE - PREVIOUSLY TESTED SURFACE

Advance safety vinyl sheet flooring - Strong has been tested to AS 4586, Appendix A wet pendulum test method (slider 96) 44 BPN (SRV)

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2 PRODUCTS

Materials - Vinyl Sheet flooring

2.1 VINYL SHEET FLOORING - FORTIS

Advance Fortis R9 homogeneous vinyl, general purpose non-directional sheet, 2.0mm thick x 2m wide roll. Available in a range of colours. Refer to SELECTIONS.

Components

2.2 COVE FILLET

Pre-formed 20mm or 32mm cove fillet. Refer to SELECTIONS

2.3 VINYL ADHESIVE

Refer to SELECTIONS.

2.4 WELDING ROD

Extruded PVC weld rod. Colour matched to floor.

2.5 COLD WELDING PASTE

Type A Werner Mueller cold welding paste.

2.6 CONDUCTIVE TAPE

Copper foil conductive tape.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS - CONCRETE

Check previous work and confirm it is of the required standard. Carry out surface repairs using levelling compound. Substrate to be smooth, uniform, clean, and free from oil, grease, dust, and loose particles. Check moisture content to NZS/AS 1884, Appendix A. Do not commence laying vinyl until readings for the whole area show 75% relative humidity or less.

3.4 BEFORE COMMENCING WORK

Do not start work before the building is enclosed, wet work is complete, doors are hung and lockable, finishes and trim complete and good lighting is available.

3.5 PREPARATION

Roll out flat and leave to acclimatise to room conditions for 24 hours, between 18°C and 30°C. Protect work from solar heat gain for 48 hours either side of the work period.

3.6 LAYING GENERALLY

Carry out the whole of this work to NZS/AS 1884, and the flooring manufacturer's requirements.

3.7 TECHNIQUE

Before installation, confirm the proposed layout, location of seams and other visual considerations.

3.8 APPLYING FLOOR LEVELLING COMPOUND

Apply levelling compound in accordance with manufacturer's requirements.

3.9 LAYING HARDBOARD OR FIBRE CEMENT UNDERLAY

Overlay subfloor with hardboard or fibre cement sheet to manufacturer's instructions. Stagger end joints and sand all joints and raised edges smooth and level.

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3.10 APPLYING PRIMER OR SEALER FOR VINYL FLOORING

Prime and/or seal porous plaster, concrete and timber substrates to the adhesive manufacturer's requirements.

3.11 LAYING ANTI-STATIC GRID

Lay self-adhesive copper foil conductive tape to substrate at right angles to sheet direction. For sheets less than 10m long, place a single strip of foil tape at one short end. For sheets over 10m in length lay foil tape strip at 10m intervals. Place 100mm strip lengthways under transverse joints. Connect foil to grounding wire as per manufacturer's instructions.

Application

3.12 APPLICATION OF ADHESIVE

Apply adhesive at the required spread rate to manufacturers requirements. Follow open time requirements, noting substrate porosity, ambient temperature and relative humidity. Remove excess adhesive as work proceeds.

3.13 LAYING VINYL FLOOR SHEET

Install rolls in consecutive order based on batch number. Trim one edge of sheet and overlap the second sheet by 10mm minimum, underscribe joins with recess scriber to form 0.4mm gap. Install sheet vinyl with seams kept clear of adhesive and roll sheets in both directions with a 50-60 kg roller. Allow to set for 24 hours before welding.

3.14 CROSS JOINS

Plan and allow cuts to avoid cross joins. Obtain written approval before proceeding if cross joins are unavoidable. Cross joins are not acceptable in wet areas.

3.15 COVING VINYL

Form 100-150mm cove upstand at junctions to walls, using proprietary cove fillet and adhesive in accordance with manufacturer's requirements.

3.16 COMPLETE MITRES

Form butterfly mitres to internal and external corners, weld all joints.

3.17 VINYL TO STAIRCASES

Lay pre-cut vinyl sheets to each tread and riser. Fit selected nosing to each tread and top of stair flight, to manufacturer's requirements.

3.18 FIT VINYL EDGING

Fit tapered vinyl edging to borders, except where abutting carpet.

Wall Application

3.19 APPLYING WALL SHEET

Fix vinyl with adhesive, wrap to corners with joins no closer than 200mm from internal or external corners. Cut vinyl neatly to finish.

3.20 FLOOR TO WALL FINISHING STRIP

Adhere to walls in a true, straight line using water-based adhesive. Roll immediately using a seam roller for maximum bond strength.

Application - general

3.21 INSTALLING ACCESSORIES

Scribe fit, adhere or otherwise fix true to line and face to the sheet manufacturer's requirements.

Completion & Commissioning

3.22 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS



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For further details on selections go to www.advanceflooring.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Materials

4.1 ADVANCE VINYL SHEET FLOORING - FORTIS

Location:	Cleaners room on L01-05
Supplier:	Advance Flooring New Zealand Ltd.
Product:	Fortis - R9 Homogenous Vinyl
Thickness:	2.0mm
Colour:	Refer to finishes schedule
Seam welding:	Heat weld
Trims:	As needed

Components

4.2 COVING

Cove fillet size:	As needed
Height:	150mm
Type:	Continuous - a continuation of the floor sheet up the wall

Accessories

4.3 ADHESIVE

Type:	UZIN KE2000s



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6413A ADVANCE RUBBER SURFACING

1 GENERAL

This section relates to the supply and installation of Advance Flooring New Zealand Ltd rubber surfacing complete with trims and edgings.
It includes:

- rubber sheet
- rubber tiles
- rubber planks

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

EPDM	Ethylene propylene diene monomer (rubber)
CRF	Critical radiant flux
SRV	Slip resistance value
Advance	Advance Flooring New Zealand Ltd

The following definitions apply specifically to this section:

Critical radiant flux	Measure of fire performance test result under NZBC C/AS2

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC D1/AS1	Access routes
NZS/AS 1884	Floor coverings - Resilient sheet and tiles - Installation practices

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Advance Installation Instructions
Advance Data Sheets

Manufacturer/supplier contact details

Company:	Advance Flooring New Zealand Ltd
Web:	www.advanceflooring.co.nz
Email:	sales@advanceflooring.co.nz
Telephone:	0508 238 262

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

7 years:	For wear resistance and dimensional stability

- Provide this warranty on the Advance Floooring New Zealand Ltd standard form (if unavailable, use the standard form in the general section 1237WA WARRANTY AGREEMENT.)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

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1 year: Execution

- Provide this warranty on the installer/applicator standard form (if unavailable, use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any specified Advance Flooring product or associated components.

1.7 QUALIFICATIONS

Rubber surfacing to be carried out by competent, experienced layers familiar with the Advance Flooring materials and techniques specified.

1.8 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of product cleaning and maintenance information as electronic PDF format documents.

Provide this information prior to Practical Completion.

Compliance information

1.9 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicator's approval certificate from the manufacturer/importer/distributor
- Manufacturer/supplier warranty
- Installer/applicator warranty
- Producer Statement - Construction (PS3) - from the applicator/installer
- Other information required by the BCA in the Building Consent Approval documents

Performance

1.10 SURFACE FIRE PERFORMANCE

Advance Flooring rubber sheet and rubber tile products achieve the minimum critical radiant flux requirements of NZBC C/AS2, Table 4.12.3.1: Critical radiant flux requirements for flooring (kW/m2).

Performance - Slip resistance

1.11 SLIP RESISTANCE - PREVIOUSLY TESTED SURFACE

The following walking surfaces have previously been tested for slip resistance, and comply with NZBC D1/AS1 requirements.

1.12 CERTIFY

Provide certificates and any other evidence at the time of selection/supply that the flooring surface complies with NZBC D1 /AS1: 'Access routes.'

2 PRODUCTS

Materials

2.1 EXPRESS DELIVERY R01

Express Delivery Neoflex™ R01, resilient rubber flooring manufactured from recycled and new chip rubber

2.2 NEOFLEX™ - 600 SERIES

Neoflex™ - 600 series manufactured from polymetrically bound synthetic mixed coloured EPDM rubber.

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2.3 NEOFLEX™ - 700 SERIES

Neoflex™ - 700 series manufactured from polymetrically bound synthetic rubbers (70% Mixed Coloured EPDM Rubber and 30% Recycled black EPDM Rubber).

2.4 NEOFLEX - 800 SERIES

Neoflex™ - 800 series manufactured from polymetrically bound synthetic solid coloured EPDM Rubber.

2.5 NEOFLEX™ - BFC SERIES

Neoflex™ - BFC series manufactured from polymetrically bound synthetic rubbers (mixed coloured large EPDM rubber chips).

2.6 NEOFLEX™ - NATURAL SERIES

Neoflex™ - Natural series manufactured from polymetrically bound synthetic mixed coloured EPDM Rubber.

2.7 NEOFLEX - RECO SERIES

Neoflex™ - Reco series manufactured from polymetrically bound synthetic EPDM rubber.

Accessories

2.8 ADHESIVE

PU88, solvent-free, two-part polyurethane adhesive.

2.9 LEVELLING / REPAIR COMPOUND

To suit substrate and flooring installation.

2.10 TRIMS AND EDGING

Refer to SELECTIONS.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCT

To manufacturer's requirements and NZS/AS 1884 Floor coverings - Resilient sheet and tiles - Installation practices. Accept rolls of sheet, packages of tiles and accessories undamaged and dry. Store rolls upright with other material on level surfaces in non-traffic non-work areas that are enclosed, clean and dry. Avoid distortion, stretching, marking and damage to edges while shifting, unrolling and handling sheet / tiles and accessories

3.2 ROUTINE MATTERS

Refer to the general section 1250 TEMPORARY WORKS & SERVICES for protection requirements. Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PREPARATION

Check that each colour supplied is from the same batch. Follow Advance Flooring requirements for preparatory conditioning of rolls and tiles, working temperatures and conditions before, during and after laying. Protect work from solar heat gain. Switch off under-floor heating during and for 48 hours either side of the work period.

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 DO NOT START

Do not start work before the building is enclosed, all wet work is complete, doors are hung and lockable, finishes and trim complete and good lighting is available.

3.6 PRE-INSTALLATION REQUIREMENTS

Inspect the substrate to ensure it is a suitable finish. Confirm moisture content is acceptable for laying.

Moisture content: Timber 18% maximum

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Concrete 75% RH

3.7 PROTECTION

Protect adjoining work surfaces and finishes during the installation.

3.8 LAYING GENERALLY

Carry out the whole of this work to NZS/AS 1884 Floor coverings - Resilient sheet and tiles - Installation practices and Advance Flooring requirements.

3.9 TECHNIQUE - SHEET

Before beginning installation confirm the proposed layout of material, location of seams and other visual considerations of the finished work.

Application - substrate preparation

3.10 NEW CONCRETE

Clear substrate of debris, clean off surface contamination and carry out surface repairs using 'Roberts R38 Flexiscreed' levelling compounds. Carefully feather out at perimeters of repaired areas. Grind level and then vacuum to remove all dust. Check moisture content to NZS/AS 1884 Floor coverings - Resilient sheet and tiles - Installation practices, Appendix A, do not commence laying until readings for the whole area show 75% relative humidity or less and concrete has been left to cure for a minimum of 28 days.

Sheet application - general

3.11 DIRECTION

Unroll and install all Neoflex™ sheets in the same direction and to the labelled requirements.

Sheet application - adhesive

3.12 APPLICATION OF ADHESIVE

Apply adhesive evenly and at the recommended rate by trowel and "wetted" roller as required by the adhesive manufacturer and without trowel marks after setting. Follow requirements for open time, taking note of the substrate porosity, ambient temperature and relative humidity. Remove excess adhesive as the work proceeds using required techniques.

3.13 LAY SHEET - ADHESIVE METHOD

Roll out, leave to condition and install to Advance Flooring requirements. Ensure there are no air bubbles or twisting and that the seams are kept clear of adhesive. Immediately sheet is adhered roll with a 50 kg hand-held flooring roller to eliminate any entrapped air. Place sand bag weights on edges, seams, corners and ends until adhesive has set. If required continuously roll the sheet until the adhesive has set.

Completion & Commissioning

3.14 DEFECTIVE OR DAMAGED WORK

Replace damaged or marked elements where repair is not possible or will not be acceptable. Leave work to the standard required for following procedures.

3.15 CLEAN SHEET

Vacuum off, damp mop with a low foam neutral detergent, allow to dry and finally buff with a rotary machine using suitable pads at 300 rpm. Leave surfaces free of adhesive, dirt and debris and to the standard required by following procedures.

3.16 REMOVE

Remove debris, unused materials and elements from the site. Remove temporary protection of adjoining surfaces on completion of flooring installation.

3.17 PROTECT

Protect completed work from damage for the period between completion of laying and completion of the contract works. Protect the rubber flooring from rolling traffic and heavy loads using hardboard or plywood sheets.

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3.18 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.advanceflooring.co.nz
Substitutions are not permitted to the following Advance Flooring New Zealand Ltd products, unless stated otherwise.

Materials

4.1 ADVANCE NEOFLEX RUBBER FLOORING

Location:	GF egress corridor to EOT facilities
Manufacturer:	Rephouse
Supplier:	Advance Flooring New Zealand Ltd
Brand/range	Neoflex Recycled Rubber
Thickness:	3mm
Roll width:	1200mm
Adhesive :	PU88 adhesive
Colour:	Allow for 600series core colour - final selection TBC
Finish:	Allow for Fresh-Finish

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6512AC ADVANCE CARPET TILES

1 GENERAL

This section relates to the supply and installation of Advance Flooring New Zealand Ltd solution dyed nylon carpet tiles as an interior floor finish.

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

CRF	Critical radiant flux
PH	Potential of hydrogen

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
AS/NZS 2455.1	Textile floor coverings - Installation practice - General
AS/NZS 2455.2	Textile floor coverings - Installation practice - Carpet tiles

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Installation Instructions - Carpet Tiles & Planks (Oct 2024)
Maintenance Instructions - Carpet Tiles & Planks (Oct 2024)
BPIR Data Sheets
Fire Certificates

Manufacturer/supplier contact details

Company:	Advance Flooring New Zealand Ltd
Web:	www.advanceflooring.co.nz
Email:	sales@advanceflooring.co.nz
Telephone:	0508 238 262

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

For the specified Advance Flooring carpet tiles

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty for:

1 year	For installation

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works

Refer to the general section 1237 WARRANTIES for additional requirements.

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Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:

Maintenance Instructions - Carpet Tiles & Planks

Provide this information prior to practical completion.

Performance - fire

1.10 SURFACE FIRE PROPERTIES

Carpet tile flooring to comply with NZBC C/AS2 requirements for minimum Critical Radiant Flux. Refer to SELECTIONS.

2 PRODUCTS

Carpet tiles

2.1 CARPET TILES

Manufactured from 100% polyamide 6 solution dyed nylon tufted loop pile on backing. Available in various designs. Refer to SELECTIONS.

Components

2.2 ADHESIVE

Pressure sensitive carpet tile adhesive. Refer to SELECTIONS.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 DELIVERY CHECK

Check delivery against the order for correct colour, quantity and batch. Check for the same production number on all boxes.

3.3 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.4 CONDITIONING

Prior to installation remove carpet tiles from packaging, spread out on floor and condition for at least 48 hours at a room temperature of 15.5-29.5°C and a relative humidity of 40-65%.

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Substrate preparation

3.5 CHECK SUBSTRATE

Check substrate is sound, level, smooth and clean and has been prepared to AS/NZS 2455.1. Carry out such additional preparatory work as required to bring the substrate to suitable condition.

3.6 TEST CONCRETE FLOOR

Test concrete floor for moisture with a hygrometer and for alkalinity with PH test strips or a PH meter to the manufacturer's requirements , keep records and make available on request. Do not commence installation until readings show a relative humidity of ≤70% and a PH level between 5-9.

Installation/application

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.8 INSTALLATION GENERALLY

Carry out the whole of the work to AS/NZS 2455.2 and Advance Flooring installation guide for carpet tiles.

3.9 APPLY ADHESIVE

Apply adhesive to the substrate to the manufacturer's requirements and instructions. Let dry completely before laying carpet tiles.

3.10 INSTALL CARPET TILES

Lay in the direction as required to achieve the specified laying pattern.

Completion

3.11 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

3.12 ROOM ENVIRONMENT

Keep room well ventilated and maintain at a room temperature of 15.5-29.5°C and a relative humidity of 40-65% for at least 48 hours post installation completion.

3.13 PROTECTION REQUIREMENTS

Heavy traffic and furniture not to be placed on flooring for at least 48 hours post installation completion. Protect carpet tiles from rolling traffic for the duration of the contract works using hardboard or plywood sheets.

4 SELECTIONS

For further details on selections go to www.advanceflooring.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Carpet tiles

4.1 ADVANCE FLOORING NYLON CARPET TILES

Location:	Refer to finishes plan
Supplier:	Advance Flooring New Zealand Ltd
Brand:	Stitches and Gauge
Collection:	Sketches
Shape:	Tile
Size:	500x500mm
Colour:	Refer to finishes schedule
Backing:	Sus-Pac
Laying pattern:	Monolithic
Adhesive:	Giltgrip66

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4.2 ADVANCE FLOORING NYLON CARPET TILES

Location:	Refer to finishes plan
Supplier:	Advance Flooring New Zealand Ltd
Brand:	Stitches and Gauge
Collection:	Limestone
Shape:	Broad Plank
Size:	500x1000mm
Colour:	Refer to finishes schedule
Backing:	Sus-Pac
Laying pattern:	Basket Weave
Adhesive:	Giltgrip66

Spares & maintenance products

4.3 SPARES & MAINTENANCE PRODUCTS

Refer to the general section 1270 CONSTRUCTION for details of how spares and maintenance products will be handled. Provide the following spares and maintenance products:

Item:	Tile
Quantity:	1 box

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6612AM ADVANCE ENTRY MATS & CARPET

1 GENERAL

This section relates to the supply and installation of Advance Flooring New Zealand Ltd entry mats and carpet.
It includes:

- modular / custom-made entrance matting systems
- custom-made entrance carpets (in sheet and tile format)
- associated trims and frames

Documents

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
ISO 9239-1:2010	Reaction to fire tests for floorings - Determination of the burning behaviour using a radiant heat source

1.2 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Advance Technical Product Literature including Installation instructions and data sheets.

Manufacturer/supplier contact details

Company:	Advance Flooring New Zealand Ltd
Web:	www.advanceflooring.co.nz
Email:	sales@advanceflooringsystems.com
Telephone:	0508 238 262

Warranties

1.3 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years:	Limited warranty for Advance Architectural Series – Axis, Shuttle, Nova, CoralTread, ExtraTread, MasterTread, EverTread. Refer to Advance for conditions
10 years:	Limited warranty for Advance Classic Series - StarTread, Orbit. Refer to Advance for conditions.
5 years:	Limited warranty for Symphony 2. Refer to Advance for conditions
2 years:	Limited warranty for ScrapeRIB and Bross Entry Carpet. Refer to Advance for conditions
10 years:	Limited warranty for Gecko Entry Tile. Refer to Advance for conditions
10 years:	Indoor warranty for DecoRIB and WideRIB entry carpet. Refer to Advance for conditions
3 years:	Limited outdoor warranty for DecoRIB and WideRIB entry carpet. Refer to Advance for conditions
2 years:	Limited warranty for DuraTap Coir Matting. Refer to Advance for conditions.

- Provide this warranty on Advance standard form (if unavailable, use the form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

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1.4 WARRANTY - INSTALLER/APPLICATOR

Provide an installer warranty:

1 year: For installation

- Provide this warranty on the installer standard form (if unavailable, use the form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.6 QUALIFICATIONS

Entrance matting and carpet installers to be competent, experienced workers familiar with the Advance materials and techniques specified.

1.7 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of Advance Maintenance Instructions - Advance Entrance Matting Systems as electronic PDF format documents:

Provide this information prior to practical completion.

Performance

1.8 SURFACE FIRE PERFORMANCE

Products tested to ISO 9239-1 and achieve the minimum critical radiant flux requirements of NZBC C/AS2, Table 4.12.3.1: Critical radiant flux requirements for flooring (kW/m2).

Critical radiant flux achieved is as follows:

Axis entry mat	5.4kW/m²
ExtraTread entry mat	7.8kW/m²
Shuttle entry mat	8.8kW/m²
Nova entry mat	5.2kW/m²
Coral Tread entry mat	7.0kW/m²
MasterTread entry mat	7.8kW/m²
EverTread entry mat	8.2kW/m²
Symphony 2	4.5kW/m²
ScrapeRIB entry carpet	5.2kW/m²
Bross entry carpet	5.2kW/m²
Dimension entry tile	8.0kW/m²
Gecko entry carpet tile	8.6kW/m²
DecoRIB entry carpet	8.7kW/m²
WideRIB entry carpet	8.7kW/m²
DuraTap coir matting	6.4kW/m²
Orbit entry mat	3.0kW/m²
StarTread entry mat	8.0kW/m²

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2 PRODUCTS

Materials - entry mat

2.1 AXIS ENTRY MAT

Axis entry mat, interlocking modular matting system with water absorbent Symphony 2 polyamide carpet in-fills and 15mm high frame providing an overall height of 17mm, supplied in a range of colours. Refer to SELECTIONS.

Components

2.2 MATWELL ALUMINIUM FRAME AND RAMPING

Proprietary Advance matwell frame and ramping. Refer to SELECTIONS for options.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to the general section 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to the general section 1250 TEMPORARY WORKS & SERVICES for protection requirements. Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 LAYOUT

Plan the general layout to:

- conform with pattern orientation requirements as specified
- maximize perimeter and mat/carpet/tiles sizes

3.4 TEMPERATURE

Floor temperature:	Minimum 16°C.
Concrete pH:	No more than 10.0.

3.5 HANDLE AND STORE

Keep matting dry. Protect from damage.

3.6 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Installation - substrate preparation

3.7 PREPARE FLOOR SUBSTRATE

Refer to 6192 FLOORING SUBSTRATE PREPARATION for preparation of flooring substrate.

Ensure base is smooth and level before commencing installation.

Installation - entry mat

3.8 INSTALL ENTRY MAT

Install proprietary frame and entry mat in accordance with Advance details and requirements.

Completion

3.9 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.advanceflooring.co.nz
Substitutions are not permitted to the following, unless stated otherwise.



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Materials

4.1 ADVANCE ENTRY MAT SYSTEM

Location:	GF wind lobby (Murchison Rd entrance) and main lobby at 5 Mile Lane entrance
Manufacturer:	Advance Flooring
Matwell size:	Refer to finishes plan
Carpet range:	Axis
Carpet colour:	Sand SY11
Install type:	Recessed
Matwell frame:	ALF3515
Matwell ramping:	ALR4513 - as needed
Rail/grid finish:	Satin/natural



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6614JT JACOBSEN TREDSAFE NOSINGS & TRANSITIONS

1 GENERAL

This section relates to the supply and installation of Tredsafe® products.

It includes:

- Stair nosings and nosing inserts
- Flooring transitions
- Edging trims

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS 4586	Slip resistance classification of new pedestrian surface materials
NZS 4121	Design for Access and Mobility - Buildings and Associated Facilities

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Tredsafe® Stair Nosings - Technical Data Sheets
Tredsafe® Detail Trims - Technical Data Sheets
Tredsafe® Inserts - Technical Data Sheet
Tredsafe® Lumitred Inserts - Technical Data Sheet
Tredsafe® Stair Nosings BPIR
Tredsafe® Detail Trims BPIR
Tredsafe® Inserts BPIR
Tredsafe® Lumitred Inserts BPIR
Tredsafe® Installation and Maintenance Covered Stair Nosings
Tredsafe® Installation and Maintenance Uncovered Stair Nosings
Tredsafe® Insert Installation and Maintenance
Tredsafe® Transitions and Edging Maintenance
Tredsafe® Care and Maintenance
ATTAR AS4586 Slip Test Results

Manufacturer/supplier contact details

Company:	Jacobsen Creative Surfaces Ltd
Web:	www.tredsafe.co.nz om www.jacobsen.co.nz - main distributor
Email:	info@tredsafe.co.nz
Telephone:	09 813 5236 Tredsafe 09 574 0640 Jacobsen - main distributor

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

3 years	For materials

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

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Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 year	For installation

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:
Tredsafe® Installation and Maintenance Covered Stair Nosings

Tredsafe® Installation and Maintenance Uncovered Stair Nosings
Tredsafe® Insert Installation and Maintenance
Tredsafe® Transitions and Edging Maintenance
Tredsafe® Care and Maintenance

Provide this information prior to practical completion.

Compliance information

1.8 COMPLIANCE - ACCESSIBLE REQUIREMENTS

Tredsafe® stair nosings comply with NZS 4121.

Performance

1.9 SLIP RESISTANCE - PREVIOUSLY TESTED SURFACE

Tredsafe® stair nosing inserts have previously been tested for slip resistance and comply with NZBC D1/AS1 requirements.

Tredsafe® PVC ridged pyramid finish nosing inserts have been tested to AS 4586 Appendix A Wet pendulum test method using Slider 96 Rubber and achieves a reported SRV classification of 47.

Tredsafe® PVC ridged pyramid finish nosing inserts have been tested to AS 4586 Appendix B Dry floor friction test method and achieves a co-efficient of friction of 0.75.

2 PRODUCTS

Materials - stair nosings for uncovered (concrete or timber) stairs

2.1 TREDSAFE® ALUMINIUM STAIR NOSING - FOR UNCOVERED STAIRS

Tredsafe®, natural satin anodised aluminium stair nosing profiles complete with non-slip Tredsafe® inserts, with a ramped back edge to avoid trip hazards on uncovered stairs such as concrete or timber. Pre-drilled for supplied countersunk screw fixings. Available in a range of profiles, insert sizes and colours. Refer to SELECTIONS.

Materials - floor detail trims

2.2 TREDSAFE® CURVED FLOOR TRIM - FOR CARPET TO VINYL FLOOR

Tredsafe®, aluminium curved floor trims for transition between carpet and vinyl floor coverings. Profiles have either a 10mm radius rounded front or are slightly ramped with a minimal trim to provide a smooth transition. Available in a range of profiles in mill finish or natural satin anodised finish. Refer to SELECTIONS.

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2.3 TREDSAFE® CURVED FLOOR TRIM - FOR CARPET/VINYL TO BARE FLOOR

Tredsafe®, aluminium curved floor trim profile with rounded front to provide a smooth transition between carpet or LVT (Luxury Vinyl Tiles or Planks) and adjacent bare floor. Available in a range of profiles in mill finish or natural satin anodised finish. Refer to SELECTIONS.

2.4 TREDSAFE® FLOOR TRIM - FOR HARD FLOORING (TILED)

Tredsafe®, anodised aluminium floor trim for smooth floor transitions from 1.3mm to 11mm height variations for hard flooring to adjacent floor finishes. Supplied with pre-applied double sided adhesive tape for fixing. Available in a range of profiles and finishes. Refer to SELECTIONS.

Components - anti-slip inserts

2.5 TREDSAFE® - PVC ANTI-SLIP INSERTS

Tredsafe® PVC, non-slip inserts have a raised pyramid texture which provides multi-directional slip resistance. Insert is supplied with a pre-applied, self-adhesive backing tape for ease of installation and concealment of fixing screws below for a neat and tidy job. Available in 13mm, 37mm, 43mm or 53mm widths and a wide range of safety, subtle and specialty colours. Refer to SELECTIONS.

Components - fixings

2.6 ADHESIVE FIXING- BONDING ALUMINIUM NOSINGS AND TRIMS

Tredsafe® Tredlock is a fast curing, low odour, non-corrosive, elastic, single component, hybrid polymer adhesive with good UV & weather resistance. Suitable for interior and exterior applications.

2.7 MECHANICAL FIXING - ALUMINIUM NOSINGS AND TRIMS

Screw fixings supplied with profile: Zinc coated screws for internal applications and 304 stainless steel for external applications.

2.8 DOUBLE SIDED TAPE

Double sided adhesive tape supplied with one contact face pre-attached to inserts and/or aluminium trim profiles.

Accessories

2.9 CLEANER

Isopropyl alcohol or equivalent solvent cleaner for the cleaning of aluminium surfaces prior to the application of double-sided tape and contact with adhesive. Also where required, used to clean substrate prior to adhesive application.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check substrate and confirm it is of the required standard for this part of the work.

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALLATION GENERALLY

Install in accordance with Tredsafe® installation instructions.

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3.6 LAYOUT

Plan the general layout to conform to size and orientation requirements.

3.7 TEMPERATURE

Apply Tredsafe® Tredlock adhesive between 5°C to 35°C temperatures only.

3.8 CLEAN SUBSTRATE

As required sand or grit blast substrate to achieve a clean substrate in accordance with Tredsafe® requirements. Brush off excess dirt and debris before application.

When using Tredsafe® Tredlock adhesive, where there are concerns regarding cleanliness of substrate allow to clean substrate with isopropyl alcohol or equivalent. Allow sufficient time to dry prior to adhesive application. Brush off surface dirt and debris before installation.

3.9 CLEAN TRIMS

Clean metal trims with isopropyl alcohol or equivalent prior to contact with adhesive or double sided tape, in accordance with Tredsafe® requirements.

3.10 INSTALL TREDSAFE® STAIR NOSINGS

Install Tredsafe® stair nosings in accordance with Tredsafe® requirements and instructions. Refer to SELECTIONS for fixing method.

3.11 INSTALL TREDSAFE® FLOOR DETAIL TRIMS

Install Tredsafe® floor detail trims in accordance with Tredsafe® requirements and instructions. Refer to SELECTIONS for fixing method.

If joining matching straight and curving trim profiles, ensure curve has passed apex and is straight before using straight profile trim. Ensure adjacent profiles align.

3.12 INSTALL TREDSAFE® NON-SLIP INSERTS

Install Tredsafe® non-slip inserts in accordance with Tredsafe® requirements. Ensure aluminium stair nosing / trim is clean, free from dust, residue and debris. Pre-cut insert to length, remove adhesive tape backing and place insert into formed channel in nosing / trim without undue stretching. Once in place, using small weighted roller, roll over insert to ensure consistent adhesion and a secure bond.

Completion & Commissioning

3.13 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.tredsafe.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials - stair nosings for uncovered (concrete or timber) stairs

4.1 TREDSAFE® ALUMINIUM STAIR NOSING SINGLE INSERT - FOR UNCOVERED

Location:	All Stairs - Internal and External
Supplier:	Jacobsen Tredsafe Limited
Nosing code:	AA125
Nosing type:	Natural satin anodised aluminium
Nosing width:	69mm wide with single 53mm insert.
Nosing return:	24mm return
Nosing length:	full width of stairs
Insert type:	Tredsafe® Anti-slip PVC / silica quartz - single ~mm insert
Insert colour(s):	102 Safety Yellow
Installation:	Screw fix using supplied screw fixings in pre-drilled holes and/or adhesive fix using Tredsafe® Tredlock. It is recommended to use both but at the discretion of the installer.

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4.2 TREDSAFE® ALUMINIUM STAIR NOSING DOUBLE INSERT - FOR UNCOVERED

Supplier:	Jacobsen Tredsafe Limited
Nosing type:	Natural satin anodised aluminium
Insert type:	Tredsafe® Anti-slip PVC / silica quartz - double ~mm inserts
Insert colour(s):	tbc
Installation:	Screw fix using supplied screw fixings in pre-drilled holes and/or adhesive fix using Tredsafe® Tredlock. It is recommended to use both but at the discretion of the installer.

Materials - detail trims

4.3 TREDSAFE® CURVED FLOOR TRIM - FOR CARPET TO VINYL FLOOR

Supplier:	Jacobsen Tredsafe Limited
Installation:	Screw fix trim using supplied countersunk screws.

4.4 TREDSAFE® CURVED FLOOR TRIM - FOR CARPET/VINYL TO BARE FLOOR

Supplier:	Jacobsen Tredsafe Limited
Installation:	Screw fix trim using supplied countersunk screws

4.5 TREDSAFE® FLOOR TRIM - FOR HARDFLOORING (TILED)

Supplier:	Jacobsen Tredsafe Limited
Trim finish:	Natural satin anodised aluminium
Installation:	Double sided adhesive tape

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6711R RESENE PAINTING EXTERIOR

1 GENERAL

This section relates to the surface preparation, painting and clear finishing of new and existing exterior substrates using Resene Paints Ltd architectural and decorative coating systems.

Related work

1.1 RELATED WORK
Refer to 6700R RESENE PAINTING GENERAL for general matters related to painting work.

Requirements

2 PRODUCTS

Materials

2.1 PRODUCTS
Refer to 6700R RESENE PAINTING GENERAL for product clauses.

3 EXECUTION

Conditions

3.1 EXECUTION
Refer to 6700R RESENE PAINTING GENERAL for execution clauses.

4 SELECTIONS

For further details on selections go to www.resene.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Resene exterior paint systems

Exterior cementitious - new

4.1 RESENE NEW EXTERIOR TILT SLAB/PRECAST CONCRETE– ANTI-GRAFFITI CLEAR – DRY LOOK

Surface Prep:	Resene SIPDS No3 and Spec Sheet 3: 1C/1
Saturation coat:	Resene Aquapel D65S, Solventborne Water Repellent
1st coat	Resene Concrete Clear Gloss D54a, Waterborne Glaze
2nd coat:	Resene Uracryl GraffitiShield Semi-Gloss RA58, 2 pack Waterborne
3rd coat:	Resene Uracryl GraffitiShield Semi-Gloss RA58, 2 pack Waterborne

Note: Allow Resene Concrete Clear to dry for 48 hours prior to applying Resene Uracryl GraffitiShield. This system is not intended for polished or highly honed panels.

4.2 RESENE NEW EXTERIOR TILT SLAB/PRECAST CONCRETE - PENETRATING WATER REPELLENT ONLY

Surface Prep:	Resene SIPDS No3 and Spec Sheet 3: 1/1
Saturation coat:	Resene Aquapel D65S, Solventborne Water Repellent
2nd coat:	Not Required
3rd coat:	Not Required

Note: This section is not intended for honed or polished panels

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Exterior timber - new

4.3 RESENE NEW EXTERIOR PLYWOOD SOFFITS - STAIN

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 4/1
1st coat:	Resene Woodsman Wood Oil Stain D57, Solventborne
2nd coat:	Resene Woodsman Wood Oil Stain D57, Solventborne

Exterior fibre cement cladding - new

4.4 RESENE NEW EXTERIOR FIBRE CEMENT CLADDING

Surface Prep:	Resene SIPDS No3 and Spec Sheet 3: 4/1
1st coat:	Resene Concrete Primer D405, Acrylic Concrete Primer
2nd coat:	Resene X-200 D62, Acrylic Weathertight Membrane
3rd coat:	Resene X-200 D62, Acrylic Weathertight Membrane

Exterior metal - new

4.5 RESENE NEW EXTERIOR GALVANIZED/ZINC COATED STEEL DOORS/FRAMES- SINGLE PACK DECORATIVE

Surface Prep:	Resene SIPDS No4 and Spec Sheet 4: 2/1
1st coat	Resene ArmourX GP Metal Primer D411, Solventborne Modified Alkyd
2nd coat:	Resene Lustacryl D310, Semi-Gloss waterborne enamel
3rd coat:	Resene Lustacryl D310, Semi-Gloss waterborne enamel

4.6 RESENE NEW EXTERIOR MILD STEEL DOORS/FRAMES- SHOP PRIMED - SINGLE PACK DECORATIVE

Surface Prep:	Resene SIPDS No4 and Spec Sheet 4: 1/1
1st coat	Resene ArmourX GP Metal Primer D411, Solvent orne Modified Alkyd
2nd coat:	Resene ArmourX GP Metal Primer D411, Solvent orne Modified Alkyd
3rd coat:	Resene Lustacryl D310, Semi-Gloss waterborne enamel
4th coat:	Resene Lustacryl D310, Semi-Gloss waterborne enamel

Note: this section assumes the Steel has been primed with a standard single pack Zinc phosphate primer.

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6721R RESENE PAINTING INTERIOR

1 GENERAL

This section relates to the surface preparation, painting and clear finishing of new and existing interior substrates using Resene Paints Ltd architectural and decorative coating systems.

Related work

1.1 RELATED WORK
Refer to 6700R RESENE PAINTING GENERAL for general matters related to painting work.

Requirements

2 PRODUCTS

Materials

2.1 PRODUCTS
Refer to 6700R RESENE PAINTING GENERAL for product clauses.

3 EXECUTION

Conditions

3.1 EXECUTION
Refer to 6700R RESENE PAINTING GENERAL for execution clauses.

4 SELECTIONS

For further details on selections go to www.resene.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Resene interior paint systems

Plasterboard - new

4.1 RESENE NEW INTERIOR PLASTERBOARD, WALLS - DRY AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1: 1/1
Fire rating:	Group 1-S. Test Report FH4967
1st coat	Resene Broadwall D403, Waterborne Wallboard Sealer
2nd coat:	Resene SpaceCote Low Sheen D311, Waterborne Enamel
3rd coat:	Resene SpaceCote Low Sheen D311, Waterborne Enamel

4.2 RESENE NEW INTERIOR PLASTERBOARD, WALLS - WET AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1A: 1/1
Fire rating:	Group 1-S. Test Report 7-593235-CO
1st coat:	Resene Waterborne Sureseal D42a, Waterborne Pigmented Sealer
2nd coat:	Resene SpaceCote Low Sheen Kitchen & Bathroom D311K Waterborne Enamel
3rd coat:	Resene SpaceCote Low Sheen Kitchen & Bathroom D311K Waterborne Enamel

4.3 RESENE NEW INTERIOR PLASTERBOARD, WALLS - SERVICE AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1A: 1/1
Fire rating:	Group 1-S. Test Report 7-593235-CO
1st coat:	Resene Waterborne Sureseal D42a, Waterborne Pigmented Sealer
2nd coat:	Resene Lustacryl Kitchen & Bathroom D310K Waterborne Enamel
3rd coat:	Resene Lustacryl Kitchen & Bathroom D310K Waterborne Enamel

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4.4 RESENE NEW INTERIOR PLASTERBOARD, CEILINGS - DRY AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1: 1/1
Fire rating:	Group 1-S, Test Report FH4967
1st coat:	Resene Broadwall D403, Waterborne Wallboard Sealer
2nd coat:	Resene Ceiling Paint D305, Waterborne Flat Acrylic
3rd coat:	Resene Ceiling Paint D305, Waterborne Flat Acrylic

4.5 RESENE NEW INTERIOR PLASTERBOARD, CEILINGS - WET AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1A: 1/1
Fire rating:	Group 1-S, Test Report 7-593235-CO
1st coat:	Resene Waterborne Sureseal D42a, Waterborne Pigmented Sealer
2nd coat:	Resene SpaceCote Low Sheen Kitchen & Bathroom D311K, Waterborne Enamel
3rd coat:	Resene SpaceCote Low Sheen Kitchen & Bathroom D311K, Waterborne Enamel

4.6 RESENE NEW INTERIOR PLASTERBOARD, CEILINGS - SERVICE AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1A: 1/1
Fire rating:	Group 1-S, Test Report 7-593235-CO
1st coat:	Resene Waterborne Sureseal D42a, Waterborne Pigmented Sealer
2nd coat:	Resene Lustacryl Kitchen & Bathroom D310K, Waterborne Enamel
3rd coat:	Resene Lustacryl Kitchen & Bathroom D310K, Waterborne Enamel

Interior timber - new

4.7 RESENE NEW INTERIOR TIMBER DOORS, JOINERY - PAINT FINISH

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 9/1
1st coat:	Resene Quick Dry D45, Waterborne Acrylic Primer Undercoat
2nd coat:	Resene Lustacryl D310, Semi-Gloss Waterborne Enamel
3rd coat:	Resene Lustacryl D310, Semi-Gloss Waterborne Enamel

4.8 RESENE NEW INTERIOR TIMBER WALLS - PLYWOOD - CLEAR COAT ONLY

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 10/1
Fire rating:	Group 3
1st coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish
2nd coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish
3rd coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish

4.9 RESENE NEW INTERIOR TIMBER WALLS - PLYWOOD - STAIN AND CLEAR

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 10/1
Fire rating:	Group 3
1st coat:	Resene Colorwood D50a, Waterborne Natural Wood stain
2nd coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish
3rd coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish
4th coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish

4.10 RESENE NEW INTERIOR TIMBER FEATURE CEILINGS - STAIN AND CLEAR

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 10/1
Fire rating:	Group 3
1st coat:	Resene Colorwood D50a, Waterborne Natural Wood stain
2nd coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish
3rd coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish
4th coat:	Resene Aquaclear Satin D59, Waterborne Urethane Varnish

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4.11 RESENE NEW INTERIOR TIMBER FEATURE CEILINGS - OIL FINISH OPTION

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 10/1
Fire rating:	Group 3
1st coat:	Resene Woodsman Natural Wood Oil D514
2nd coat:	Resene Woodsman Natural Wood Oil D514
3rd coat:	Resene Woodsman Natural Wood Oil D514

Interior metal - new

4.12 RESENE NEW INTERIOR MILD STEEL - SINGLE PACK DECORATIVE - CEILING SERVICES

Surface Prep:	Resene SIPDS No4 and Spec Sheet 4: 5/1
1st coat:	Resene ArmourX GP Metal Primer D411, General Purpose Modified Alkyd
2nd coat:	Resene Lumbersider D34, Acrylic low sheen
3rd coat:	Resene Lumbersider D34, Acrylic low sheen

4.13 RESENE NEW INTERIOR GALVANIZED STEEL - SINGLE PACK DECORATIVE - CEILING SERVICES

Surface Prep:	Resene SIPDS No4 and Spec Sheet 4: 6/1
1st coat:	Resene Galvo Prime D402, Waterborne Galvanised steel primer
2nd coat:	Resene Lumbersider D34, Acrylic low sheen
3rd coat:	Resene Lumbersider D34, Acrylic low sheen

4.14 RESENE NEW INTERIOR ALUMINIUM - CEILING SERVICES

Surface Prep:	Resene SIPDS No4 and Spec Sheet 4: 8/1
1st coat:	Resene Galvo Prime D402, Waterborne Galvanised steel primer
2nd coat:	Resene Lumbersider D34, Acrylic low sheen
3rd coat:	Resene Lumbersider D34, Acrylic low sheen



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6745R RESENE PROTECTIVE COATINGS - STEELWORK

1 GENERAL

This section relates to the preparation and application of Resene Paints Ltd coating systems to steelwork.

1.1 RELATED WORK

Refer to 3411 STRUCTURAL STEELWORK for fabrication of structural steelwork.

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

ACOP	Approved Code of Practice
DFT	Dry film thickness
SIPDS	Surface Information & Preparation Data Sheets
SSPC	Society for Protective Coatings

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 2312.1	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings, Paint coatings
AS/NZS 2312.2	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings, Hot dip galvanizing
AS/NZS ISO 9001	Quality management systems - requirements
AS 1627.1	Metal finishing - Preparation and pretreatment of surfaces, Removal of oil, grease and related contamination
AS 1627.2	Metal finishing - Preparation and pretreatment of surfaces, Power tool cleaning
AS 1627.4	Metal finishing - Preparation and pretreatment of surfaces, Abrasive blast cleaning
AS 1627.7	Metal finishing - Preparation and pretreatment of surfaces, Hand tool cleaning of metal surfaces
AS 3894.3	Site testing of protective coatings - Method 3 Determination of fry film thickness

WorkSafe ACOP: Management and Removal of Asbestos

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:

Resene Surface Information & Preparation Data Sheets (SIPDS)
Resene Engineered Coating Systems Manual
Resene Product Technical Data Sheets
Resene Safety Data Sheets
Resene Putting Your Safety First brochure
Maintenance Guide for Resene Paint Finishes

Manufacturer/supplier contact details

Company:	Resene Paints Ltd.
Web:	www.resene.co.nz
Email:	advice@resene.co.nz
Telephone:	0800 RESENE (0800 737 363)

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

~ years For ~

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works

Refer to the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

3 years: For execution

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.9 SAMPLES

Refer to the general section 1270 CONSTRUCTION for details of how samples will be reviewed and how instructions to proceed will be given. Provide the following samples for review:

	Sample A	Sample B	Sample C
Sample description:	~	~	~
Sample type:	~	~	~
Number:	~	~	~
Location:	~	~	~
Supporting documentation:	~	~	~
Reviewer:	Contract administrator ~	Contract administrator ~	Contract administrator ~
Time for review:	10 working days ~	10 working days ~	10 working days ~
Review criteria:	~	~	~

1.10 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:
Maintenance Guide for Resene Paint Finishes

Provide this information prior to practical completion.

1.11 QUALITY CONTROL SYSTEM - AS/NZS ISO 9001

Plan, establish and maintain quality control system to AS/NZS ISO 9001. Make available quality control records upon request of contract administrator or consenting authority.

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1.12 INSPECTIONS

Type:	~
Requirement:	~
Location:	~
Notify:	Contract administrator
	~
Notification:	2 working days prior to work/item being carried out

2 PRODUCTS

Materials

2.1 RESENE COATING SYSTEMS

Refer to SELECTIONS.

2.2 RESENE PRIMER

Refer to SELECTIONS.

2.3 THINNERS/ADDITIVES

Thinners and additives as required by Resene Paints Ltd for particular applications.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-COATING/FINISHING REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for specified finish.
Carry out such additional preparatory work as required to bring the substrate to suitable condition.

3.4 CONDITIONS FOR PAINTING

Surfaces to be painted are dry and ambient conditions are such that condensation will not occur before the paint reaches surface-dry condition:

Ambient relative humidity	Maximum 85%
Air temperature	Between 10°C and 25°C
Substrate temperature	3°C above Dew Point

Application

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.6 APPLICATION GENERALLY

Prepare and apply coatings in accordance with Resene Engineered Coatings Systems Manual, SIPDS, and Product Technical Data Sheets.

3.7 COMPATIBILITY

Use only Resene Paints Ltd products as required for the particular surface and conditions of exposure, and that materials used within each painting system are compatible with each other.



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3.8 SEQUENCE OF OPERATIONS

Complete surface preparation before commencing painting. Apply paint in the specified sequence using the specified paint. Allow full drying time between coats to the manufacturer's stated requirements. Do not expose primers, undercoats and intermediate coats beyond a few days before applying the next coat. Surfaces being painted to be dry and ambient conditions met to prevent condensation from occurring before the paint reaches surface-dry condition.

3.9 DRYING TIME

Before applying the next coat of paint, give each coat the required drying time.

Surface preparation

3.10 LEAD-BASED PAINT

Handle lead-based in accordance with Resene Putting Your Safety First brochure.

3.11 ASBESTOS

Handle asbestos in accordance with WorkSafe ACOP: Management and Removal of Asbestos.

3.12 UNPAINTED SURFACES

Do not paint:

- Faying face of high strength friction grip (HSFG) bolted joints
- Areas for site welding keeping 75mm clear all round
- Surfaces for embedding in concrete. Where steel is only partly encased, extend priming 100mm maximum into the concrete encasement area.

3.13 BRUSHING AND POWER TOOL CLEANING

Remove oil and grease to AS 1627.1. Water blast to remove salt deposits. Scrape and power wire brush to a minimum class 2 finish to AS 1627.2. Grind sharp edges to a 2mm radius. Clean to bright metal, without producing a polished surface. Check that no burrs or sharp arrises remain which may prevent full coating thickness being attained.

3.14 ABRASIVE BLASTING

Remove oil and grease to AS 1627.1. Water blast to remove salt deposits. Abrasive blast clean to a class 2½ finish to AS 1627.4. Select grit type and equipment so the cleaned surface profile between peaks and valleys does not exceed one third of the dry film thickness. Check that no burrs or sharp arrises remain which may prevent the full coating thickness being attained.

3.15 PREPARING HOT DIP GALVANIZED SURFACES

Remove grease, oil to AS 1627.1. Water blast to remove salt deposits. Allow to dry and proceed with the next operation immediately. Carefully whip blast (sweep blast) the surface to provide a slightly roughened surface profile using clean new non-metallic blasting media. Do not to remove more than 10 microns of zinc from galvanized surface. Remove white corrosion completely before painting.

3.16 PREPARING "IN-LINE" GALVANIZED, ZINC AND ALUMINIUM/ZINC COATINGS

Remove grease, oil and other solvent-soluble contaminants to AS 1627.1. Water blast to remove salt deposits. Remove white corrosion by wet and dry sanding or high pressure water blasting before painting. Allow to dry and proceed with the next operation immediately.

3.17 SHOP PRIMING

Degrease to AS 1627.1. Water blast to remove salt deposits. Allow to dry and remove all loose corrosion products by wire brushing, power tool cleaning, or abrasive blast cleaning. Dust off and apply a coat of primer within 4 hours of completing surface preparation in accordance with appropriate SIPDS standard and specified dry film thickness.

3.18 PATCH PRIMING

Clean areas of damaged priming and areas left clear for site jointing to a standard comparable with the shop cleaning specified. Wash off chemical deposits from welding fumes. Apply priming coats to same standard as shop primers, ensuring thorough coating of bolts, nuts and connection areas. Re-prime if the primer fails, or more than 4 weeks elapse before the final coating system is applied. Overlap patch primer 20mm over sound existing coating.



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Coating/Painting

3.19 EACH COAT

Each coat of paint and the completed paint system to have the following qualities and properties:

- Uniform finish, colour, texture, sheen and hiding power
- The correct number of coats and specified dry film thickness of each coat is achieved
- Free of defects, including pin-holing, alligatoring, blistering, staining, overspray, peeling, runs, sages and wrinkling

3.20 PAINT FILM THICKNESS

The film thickness and dry film thicknesses noted in SELECTIONS are the minimum to be achieved. Do not exceed thickness by more than 20%. Achieve the specified film thickness for each coat before applying the subsequent coat. Measure the dry film thickness to AS/NZS 3894.3 (SSPC-PA2).

Completion

3.21 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

3.22 COMPLETION - TESTS & CERTIFICATION

Refer to 1270 CONSTRUCTION for general test and certification requirements at completion.
~

4 SELECTIONS

For further details on selections go to www.resene.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Mild steel primer only systems

4.1 INORGANIC ZINC SILICATE PRIMER - IZS1

System:	Resene equivalent to AS/NZS 2312.1 IZS1 Inorganic zinc, Time to first maintenance C3 - Medium 15-25 years
Description:	Mild steel primer only
Surface prep:	AS 1627.4 (Sa 2½)
Primer coat:	Resene Zincilate 11 RA21 @ 75 microns DFT

Exterior new mild steel, ferrous metals

4.2 RESENE NEW EXTERIOR MILD STEEL - PUR5

System:	Resene equivalent to AS/NZS 2312.1 PUR5 Inorganic zinc or zinc epoxy, epoxy intermediate, acrylic polyurethane Time to first maintenance C4 High 25+ years
Description:	Gloss polyurethane finish
Surface prep:	AS 1627.4 (Sa 2½)
1st coat:	Resene Zincilate 11 RA21 @ 75 microns DFT or Resene ArmourZinc 120 RA22 @ 75 microns DFT
2nd coat:	Resene Armourcote 510 RA40 @ 200 microns DFT
3rd coat:	Resene Uracryl 403 (Gloss) RA56 @ 50 microns DFT
4th coat:	Resene Uracryl 403 (Gloss) RA56 @ 50 microns DFT
4th coat colour:	~

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Interior new mild steel, ferrous metals

4.3 RESENE INTERIOR NEW MILD STEEL, SOLID COLOUR - PUR2

System:	Resene equivalent to AS/NZS 2312.1 PUR2
Description:	Mild steel, interior non-encased, epoxy primer, acrylic polyurethane gloss
Surface prep:	AS 1627.4 (Sa 2½)
1st coat:	Resene Armourcote 220 RA34 @ 75 microns DFT
2nd coat:	Resene Uracryl 403 (Gloss) RA56 @ 50 microns DFT
3rd coat:	Resene Uracryl 403 (Gloss) RA56 @ 50 microns DFT
3rd coat colour:	~



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7150 SANITARYWARE, TAPWARE AND ACCESSORIES

1 GENERAL

1.1 SANITARYWARE, TAPWARE AND ACCESSORIES
Refer to Plumbing consultants drawings

1.2 HARROSON BLOY - SCHEDULE
Refer to Schedule by Harrison Bloy for all plumbing fixtures

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7382 FIRE STOPPING SYSTEMS

1 GENERAL

This section relates to fire rated service penetration systems and control joint fire stopping systems and includes:

- fire resistant barrier for seismic and other movement gaps
- formulated compound of incombustible fibres
- fire-stop composite sheets
- fire-stop collars, grilles and dampers
- fire-stop wraps and pillows
- fire-stop sealants and foams
- fire-stop mortars

Documents

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS2	Protection from fire for buildings other than risk group SH
BSEN 1366.4	Fire resistance tests for service installations. Linear joint seals
NZS/AS 1530.1	Methods for fire tests on building materials, components and structures - Combustibility test for materials
AS 1530.4:2005	Methods for fire tests on building materials, components and structures - Fire resistance test of elements of construction
AS 1668.1	The use of ventilation and airconditioning in buildings - Fire and smoke control in buildings
AS 4072.1	Components for the protection of openings in fire-resistant separating elements - Service penetrations and control joints
AS 1682.1	Fire dampers Specification
AS 1682.2	Fire dampers Installation
NZS 4520	Fire resistant doorsets
ASTM C1519 - 10	Standard Test Method for Evaluating Durability of Building Construction Sealants by Laboratory Accelerated Weathering Procedures
BPS	Building Product Specifications

Requirements

1.2 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

1.3 MANUFACTURERS INFORMATION

Submit type test certificates for each combination of fire stopping system, application, type of service, and substrate and penetration orientation. Include drawings of tested details.

- Submit report to AS 4072.1 appendix C.
- Submit evidence that systems specified without reference to brand conform to specified requirements.
- Submit copies of relevant manufacturers' instructions, for systems specified without reference to brand.
- Material data sheets (MSDS): Submit MSDS for systems specified without references to brand.
- Give notice if substrate or penetrations or both are not suitable for fire stopping.

1.4 LABELLING OF FIRE RATED SERVICES PENETRATIONS

All service penetrations to fire cells and fire separation systems are required to comply with all the designed fire integrity of the specified systems. Label all fire rated service penetrations to AS 4072.1 using the Certified Identification System provided by CID International Ltd.

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Each fire stopping installation to have a permanently fixed tag or label containing the following information:

- Manufacturer's name
- Name and address of installer
- Date of installation

Refer to CID International Ltd at www.cidcert.com to record all service penetrations.

1.5 INSPECTIONS

Give sufficient notice so that inspections may be made of the following:

- Service penetrations completed and ready for fire stopping.
- Finish fire stopping, before being concealed.

Compliance information

1.6 FIRE STOPPING SYSTEM COMPLIANCE

To NZBC C/AS2, 2.3 Fire resistance ratings, NZBC C/AS2, 4.3.2 Fire stopping, and NZBC C/AS2, 4.3 **Fire cell construction f**or interior elements, and NZBC C/AS2, 5.5.3 Cavity barriers.

1.7 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer's, and or supplier's warranty
- Installer's warranty
- Producer Statement - Construction from the installer
- Other information required by the BCA in the Building Consent Approval documents.

1.8 CERTIFICATION

Submit evidence of compliance, to the recommendations of AS 4072.1 Appendix B.

Submit a certification document for installed fire stopping penetration and control joints.

- Form: To figure B1 of AS 4072.1

Schedule: Submit a schedule of installed fire stopped penetrations and control joints.

- Form: To figure B2 of AS 4072.1

2 PRODUCTS

Materials

2.1 COMPRESSIBLE FIRE STOPPING

Fire resistant barrier comprising of water resistant intumescent strips between layers of flexible foam. For seismic gaps fit fixing brackets to manufacturer's instructions. Fire tested to AS 1530.4. Butt joints and end seals to be stopped with fire rated sealant. Refer to SELECTIONS for type.

2.2 FIRE SEALING STRIPS

Compressible fire resistant strip comprising of mineral wool. Tested to NZS/AS 1530.1. Butt joints and end seals to be stopped with fire rated sealant. Refer to SELECTIONS for type.

2.3 FIRE GRILLES/DAMPERS

Ventilation grills for walls comprising of a moisture resistant intumescent core within a galvanized or stainless steel frame tested to AS 1530.4, AS 1668.1, AS 1682.1 and NZS 4520. Refer to SELECTIONS for type.

2.4 FIRE COLLARS

Consists of intumescent material encased in a steel collar with fixing tabs, tested to AS 1530.4, and AS 4072.1. Refer to SELECTIONS for type.

2.5 FIRE WRAPS

Intumescent strip or wrap. Tested to AS 1530.4. Refer to SELECTIONS for type.

2.6 FIRE PILLOWS FOR TEMPORARY PROTECTION

Cloth bag with high temperature fire resistant granular material. Tested to AS 1530.4 and AS 4072.1. Refer to SELECTIONS for type.

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2.7 FIRE AND ACOUSTIC SEALANT

One part sealant to AS 1530.4, AS 4072.1 and BSEN 1366.4 to provide up to 4 hours fire integrity and up to 3 hours insulation. Tested to ASTM C1519 - 10 for Dynamic movement and artificial age test. Refer to SELECTIONS for type.

2.8 FIRE RATED EXPANDING FOAM

Expanding polyurethane foam to AS 1530.4 and AS 4072.1. Do not use around plastic or insulated pipes or cables. Refer to SELECTIONS for type.

2.9 FIRE STOP MORTARS

Re-enterable cement based compound, mixed with water. Non-shrinking, moisture resistant. Insoluble in water after setting. Refer to SELECTIONS for type.

3 EXECUTION

3.1 DELIVERY, STORAGE AND HANDLING

Take delivery of materials and goods and store on site and protect from damage.
Protect finished surfaces, edges and corners from damage.
Move/handle goods in accordance with manufactures requirements.
Reject and replace goods that are damaged or will not provide the required finish.

3.2 GENERAL PREPARATION

Fire stopping after services have been installed through penetrations and properly spaced and supported, after sleeving where appropriate, and after removal of temporary lines, but before restricting access to the penetrations, including before dry lining.

Supply ventilation for non-aqueous solvent-cured materials. Apply fire stopping material to uniform density. Finish surfaces to a uniform and level condition. Maintain cable separation. Protect adjacent surfaces from damage arising through installation of fire stopping.

Allow for thermal movement for the pipes and ducts. Reinforce or support fire stopping materials with non combustible materials when:

- The unsupported span of the fire stopping materials > 100mm.
- The fire stopping materials are non-rigid.

To large openings provide fire stopping capable of supporting the same loads as the surrounding element or provide similar structural support around the opening.

Fire stopping

3.3 INSTALLATION OF COMPRESSIBLE FIRE STOPPING

To NZBC C/AS2, 4.3 Firecell construction. Ensure any rough protrusions in gap/joint to be removed before incursion of fire rated strip.

3.4 INSTALLATION OF COMPRESSIBLE FIRE SEALING STRIPS

To NZBC C/AS2, 4.3 Firecell construction. Ensure any rough protrusions in gap/joint to be removed before incursion of fire rated sealing strip.

Fire grilles and dampers

3.5 INSTALLATION OF FIRE GRILLES AND DAMPERS

To AS 1682.2 Fire dampers Installation.

Prepare unit by sealing around edges with fire rated sealant before placing into the centre of the opening. Fit with fixing brackets provided with the unit. Seal around the perimeter of both faces to the wall with fire rated sealant.

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Fire wraps

3.6 INSTALLATION OF FIRE WRAPS - SOLID CONSTRUCTION

Fit pipe fire wraps to PVC-U and or PE pipes where they penetrate the wall or floor. Install to the manufacturer's installation instructions. Position pipe wrap firmly around the pipe and remove self adhesive strip. Press firmly onto adjoining face and slide into position. If the gap between the pipe wrap and the concrete is greater than 5mm, backfill with fire-rated sealant. If the gap is less that 5mm apply a 10mm deep bead of fire-rated sealant.

3.7 INSTALLATION OF FIRE WRAPS - HOLLOW CORE WALLS

Fit pipe fire wraps to PVC-U and or PE pipes where they penetrate the wall or floor. Install to the manufacturer's installation instructions. Position pipe wrap firmly around the pipe. Press firmly onto adjoining face and slide into position. Fit steel bands if the gap between the pipe wrap and the concrete is greater than 5mm, backfill with fire-rated sealant. If the gap is less that 5mm apply a 10mm deep bead of fire-rated sealant.

Fire collars

3.8 INSTALLATION OF FIRE COLLARS

Ensure substrate around pipe penetration is flat and free from obstructions.

Face fix fire collars with structural fixings to each exposed side of the fire rated plasterboard lined wall to solid in-wall blockings.

Face fix fire collars to only the underside of concrete floor penetrations using appropriate size masonry anchors.

Seal around pipes with acoustic fire rated sealant to provide smoke and acoustic seal.

Installation of penetrations through fire walls

3.9 INSTALLATION OF MULTI-CABLE TRANSITS

Encase and separate cables with fire rated sleeve system. Fill remaining space with the sleeves and seal with water repellent UV resistant fire sealant to a depth of 20mm each face. Hollow structures to have a metal cavity constraint system to constrain sealing product.

3.10 INSTALLATION OF CABLE TRAY PENETRATIONS

Separate cables from each other with appropriate size flame retardant rubber sheets. Fill remaining space with flame retardant rubber sheets. If gas and water tightness is required, seal with water repellent UV resistant fire sealant to a depth of 10mm to each exposed face of the sheets. Hollow structures to have a metal cavity constraint system to constrain sealing product.

3.11 INSTALLATION OF MULTI-MIX TRANSITS FOR CABLES AND PIPES

Sleeve cables and pipes with fitting intumescent sleeves Plastic pipes to be sleeved with crushing material. Fill remaining space with filler sleeves and seal with water repellent UV resistant fire sealant to a depth of 20mm each face. Hollow structures to have a metal cavity constraint system to constrain sealing product.

3.12 INSTALLATION OF CABLE, STEEL, COPPER AND PLASTIC PIPE PENETRATIONS

Fit fire resistant plugs to each end of the penetration. Plug to form a tight fit to pipes and cables and to wall of penetration.

Oversized holes or out of line conduit or pipes to be wrapped with intumescent (crushing for plastic pipe) material with excess space filled with fire retardant rubber and sealed with water repellent UV resistant fire sealant to a depth of 20mm.

Fire pillows

3.13 INSTALLATION OF FIRE PILLOWS FOR TEMPORARY PROTECTION

Pack firmly into opening and around pipes and cable services. Overlap the pillows a minimum of 50mm and ensure that they overhang the perimeter of the opening. Fill gaps that cannot be filled with pillows, and gaps around services, with fire rated sealant.



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Fire rated sealants/foams

3.14 INSTALLATION OF FIRE AND ACOUSTIC SEALANTS/FOAMS

Clean all surfaces from dust , dirt or other contaminants. Mask adjacent areas and remove immediately after tooling. Prime edges if required by sealant manufacturer. Fill all joints to required depth with a backing rod or bond breaker tape prior to sealant application.

Fire rated expandable polyurethane foam to 15mm wide joints maximum in fire walls.

Fire barriers for ventilated cavity construction

3.15 FIRE BARRIERS - VENTILATED CAVITY CONSTRUCTION

Ensure substrate is suitable to fix strips to and strip is suitable for cavity width. Fix strips to the back of cavity between battens as indicated. Install to Manufacturers installation requirements.

Completion

3.16 ROUTINE CLEANING

Carry out routine trade cleaning of this part of the work including periodic removal all debris, unused materials and elements from the site.

3.17 DEFECTIVE OR DAMAGED WORK

Repair damaged elements. Replace damaged where repair is not possible or will not be acceptable. Leave fire stopping system to the standard required for following trades.



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7421AI ALLPROOF INTERIOR FLOOR WASTE SYSTEMS

1 GENERAL

This section relates to **Allproof Industries** interior floor waste systems suitable for residential and commercial applications.
It includes:

- Vision series shower channel kit
- Tile waste kit
- Cyclone waste kit
- Easy clean trap floor waste kit
- Flange and grate system (flange and grate combo only, not a full kit)
- Grate, flange and floor waste gully components necessary to complete the installation

1.1 RELATED WORK

Refer to 7150 SANITARY FIXTURES, TAPWARE & ACCESSORIES for sanitary fixtures.

Refer to 7420 and 7421 SANITARY SYSTEMS for above ground gravity flow sanitary systems

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC G1/AS1	Personal hygiene
NZBC G13/AS1	Foul water - Sanitary plumbing
NZBC G13/AS3	Foul water - Sanitary plumbing and drainage
AS/NZS 3500.2	Plumbing and drainage - Sanitary plumbing and drainage

Plumbers, Gasfitters and Drainlayers Act 2006

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Allproof Industries interior floor waste system brochures
Allproof Industries interior floor waste system technical details
Allproof Industries interior floor waste system installation guide.

Manufacturer/supplier contact details

Company:	**Allproof Industries**
Web:	www.allproof.co.nz
Email:	info@allproof.co.nz
Telephone:	09 481 8020

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5-50 years	For Allproof Industries interior floor waste system components. For warranty conditions and details refer to Allproof Industries.

- Provide this warranty on Allproof Industries Ltd standard form
- Commence the warranty from the date of purchase.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS

Plumbers to be experienced competent workers, familiar with the materials and the techniques specified. Carry out all work under the direct supervision of a certifying plumber under the Plumbers, Gasfitters and Drainlayers Act 2006.

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Compliance information

1.6 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Installer's approval certificate from the manufacturer / importer / distributor
- Manufacturer's, importer's or distributor's Certificate of Conformance
- Installer's warranty
- Producer Statement - Construction from the installer
- Producer Statement - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.

Performance

1.7 TESTING

Confirm timing before carrying out any tests. Supply potable water and apparatus needed. Test to NZBC G13/AS1, 7.1 Test Methods or AS/NZS 3500.2, section 15 Testing of Sanitary Plumbing and Sanitary Drainage Installations, as required. Carry out and record a visual inspection that each joint showed no evidence of leaks.

2 PRODUCTS

Materials - Allproof floor waste kit systems

2.1 VISION SERIES SHOWER CHANNEL KIT

Allproof Vision series shower channel kit comprised of the following:

- Stainless steel grate and channel with a central outlet
- VF80 leak control flange
- 80mm x 50mm Floor waste gully standard, 80mm x 65mm available
- Channels available in 4 stock lengths, 5 grate options, and custom colour powder coating options.
- Customized lengths and outlet locations available

Refer to SELECTIONS for options.

2.2 ELEGANCE GRATE

Allproof Elegance grates with features as follows:

- Grates - 8 stainless steel design options
- Compatible with Tile Shower Waste Kit, Revolver and 100mm Cyclone Flange
- Suits 80mm or 100mm outlets
- stainless steel standard and custom colour powder coating options
- 2 metallic finishes available on SS7 grate only

Refer to SELECTIONS for options.

Components - flanges

2.3 LEAK CONTROL FLANGE

Allproof Leak Control Flange with features as follows:

- PVC leak control flange to suit 50mm to 100mm pipe sizes
- Construction cap available
- Flange has locating lugs for floor waste grate, allowing sub-tile moisture to escape through DWV pipe system
- Outlet range includes 50mm, 50mm/90°outlet, 65mm, 80mm and 100mm pipe size
- Grates - 18 options available

Refer to SELECTIONS for options.

2.4 TILERITE

Allproof Tilerite PVC floor waste flange with features as follows:

- Base flange fits inside 80mm and 100mm pipe riser
- Threaded clamp ring and cyclone spigot
- Vinyl / waterproofing membrane clamped using 3 x stainless steel screws and clamp ring
- Height adjustable grate with threaded spigot
- Grates - square and round options

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- Product options - 80mm and 100mm pipe sizes

Refer to SELECTIONS for options.

Component - floor waste gully

2.5 FLOOR WASTE GULLY

Allproof Floor Waste Gully with features as follows:

- Injection moulded PVC floor waste gullys / traps
- Product options - 80x50mm, 80x65mm, 100x50mm and 100x65mm

Refer to SELECTIONS for options.

3 EXECUTION

Conditions

3.1 EXECUTION GENERALLY - NZBC G13/AS1

Carry out this work to NZBC G13/AS1 and NZBC G1/AS1 and complete all tests to G13/AS1, 7.1 Test Methods.

3.2 ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating actual contact or continuity of water between dissimilar metals.

3.3 HANDLE AND STORE

Handle and store pipes, fittings and accessories to avoid damage. Store on site under cover on a clean level area, stacked to eliminate movement and away from work in progress.

3.4 SETTING OUT

Set out location of all fittings and vent pipes and the completeness of their discharge into the drainage system.

3.5 CORE HOLES AND SLEEVES

Fit core holes and sleeves as needed throughout the structure in conjunction with the boxing, reinforcing and placing of concrete. Sleeve diameter to be 25mm larger than outside diameter of pipe accommodated when installed in the foundation, Allproof Pipe Sleeve to be used through other penetrations. Strip core holes and make good after installation of pipework.

3.6 PIPE ACCESS

Fit and fix wastes and pipes in ducts independent of all other services so they are easily replaceable for their full length. Wrap or tape pipes buried in concrete.

3.7 FITTINGS ACCESS

Fit and fix traps and wastes to enable access for cleaning and for maintaining the total system.

3.8 CONFIRM LOCATION

Unless the location and height are clearly delineated on the drawings, confirm installation height and plan locations of sanitary fittings before commencing the piping installation.

3.9 CORROSION

Separate metals subject to electrolytic action from each other and from treated timber, concrete and other lime substances by space, painting of surfaces, taping, or separator strips.

Installation - generally

3.10 INSTALLATION - WATERPROOFING MEMBRANES

Refer to relevant waterproofing membrane section(s) for installation of membranes and associated sub-trades.

Installation - Allproof floor waste kit systems

3.11 INSTALL FLOOR WASTE KIT SYSTEMS

Install floor waste kit systems in accordance with Allproof interior floor waste system brochure and installation guide.

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Installation - components

3.12 INSTALL GRATE, FLANGE AND FLOOR WASTE GULLY COMPONENTS

Install grate, flange and floor waste gully components in accordance with Allproof interior floor waste system brochure and installation guide.

Completion

3.13 ROUTINE CLEANING

Carry out routine trade cleaning of this part of the work including periodic removal of all debris, unused materials and elements from the site.

3.14 DEFECTIVE OR DAMAGED WORK

Repair damaged or marked elements. Replace damaged or marked elements where repair is not possible or will not be acceptable.

Commissioning

3.15 TESTING

Pre-test all waste pipe during construction. On completion of the work and before approval for acceptance of the pipework, carry out a final test to the approval of the engineer and if required witnessed by the representative of the territorial authority.

4 SELECTIONS

For further details on selections go to www.allproof.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials - Allproof floor waste kit systems

4.1 ALLPROOF VISION SERIES SHOWER CHANNEL KIT

Location:	End Of Trip Facilities
Manufacturer:	Allproof Industries
Channel size:	80mm wide x (custom sizes available, refer to Allproof Industries)
Channel finish:	Stainless Steel
Grate:	Tile Insert
Flange type:	VF80 leak control flange
Floor waste gully:	refer to services
Product code:	Refer to Allproof Indus

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7451AL ALLPROOF LEVEL THRESHOLD DRAINAGE SYSTEMS

1 GENERAL

This section relates to **Allproof Industries** level threshold drainage systems suitable for residential and commercial applications.
It comprises of an in-ground drainage channel complete with a range of grate options and fittings including connection to the network utility operators system.
It includes:

- Allproof Perimeter Drain
- Allproof Cantilever Bracket (CB) level threshold drainage system
- Allproof Threaded Leg (TL) level threshold drainage system

1.1 RELATED WORK

Refer to 7431 DRAINAGE COMMON REQUIREMENTS for general matters

Refer to 7441 GROUNDWATER DRAINAGE for sub-soil drainage
Refer to 7461 FOUL WATER DRAINAGE for waste/foul water drainage

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E1/AS1	Surface water
NZBC E1/AS2	Surface water
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 3500.3	Plumbing and drainage - Stormwater drainage

Plumbers, Gasfitters and Drainlayers Act 2006

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Allproof Industries Level Threshold Brochure
Allproof Industries Level Threshold Technical Details
Allproof Industries Level Threshold Installation Details

Manufacturer/supplier contact details

Company:	**Allproof Industries**
Web:	www.allproof.co.nz
Email:	info@allproof.co.nz
Telephone:	09 481 8020

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years	For Allproof Industries Level Threshold Drainage System components. For warranty conditions and details refer to Allproof Industries.

- Provide this warranty on Allproof Industries Ltd standard form.
- Commence the warranty from the date of purchase.

Refer to the general section 1237 WARRANTIES for additional requirements.

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Requirements

1.5 QUALIFICATIONS

Drainlayers / contractors to be experienced, competent and familiar with the materials and techniques specified. Carry out all work under the direct supervision of a certifying drainlayer under the Plumbers, Gasfitters and Drainlayers Act 2006.

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified Allproof Industries systems, components and associated products listed in this section.

1.7 ORDERING REQUIREMENTS

Allow manufacturing / delivery lead time after on-site measurement for the following custom products:

- Allproof Perimeter Drain Stainless Steel Grates
- Allproof Cantilever Bracket (CB) System
- Allproof Threaded Leg (TL) level threshold drainage System

1.8 SITE CONFIRMATION

Meet with the territorial authority drainage inspector to confirm the drainage layout in relation to site conditions. Confirm changes resulting and seek written site instruction before carrying out any work.

1.9 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not be limited to:
Layout drawings based on onsite measurements

Submit shop drawings for review to ~.

- ~ working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication and/or installation.

1.10 SITE CONDITIONS

Before starting work check on site the drainage layout, dimensions, levels and invert levels and ensure that line, level, falls and cover are correct.

Performance

1.11 TECHNICAL APPLICATION

Refer to Allproof Industries for technical support on grate performance and engage a hydraulics engineer for hydraulic performance, run layout and scheduling, ponding analysis and information on the chemical resistance of the trench and grate materials.

1.12 COMPLIANCE WITH NZ BUILDING CODE

All work to comply with:

- NZBC E2/AS1, paragraph 7.4.2.2, system materials and construction.
- NZBC E1/AS1: Surface water, 3.0 Drainage system materials and construction.

2 PRODUCTS

Materials - Allproof level threshold drainage systems

2.1 ALLPROOF PERIMETER BRACKET

Perimeter bRACKET level threshold drainage system, complies with NZBC E2/AS1, paragraph 7.4.2.2, and Figure 7.4.2.1: Level thresholds for ground level, and is comprised of the following:

- 2m long stainless steel cast in bracket to form a 200mm wide x 150mm deep (min) channel with two standard and two custom grate options.

Refer to SELECTION for options.

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3 EXECUTION

Conditions

3.1 GROUND CONDITIONS

Specific ground conditions or contaminated ground may require an increase in the concrete surround dimensions or the addition of reinforcement.

3.2 TEMPORARY INSTALLATION

Allproof Industries level threshold drainage channels are not trafficable until fully installed. During site work and after the trench run is laid, route site traffic away from the trench. If temporary crossings are required lay base course of minimum 1 metre wide either side of the trench for protection and install temporary protective cover or timber infill for support.

Installation

3.3 GENERAL

All work to NZBC E2/AS1, paragraph 7.4.2.2, system materials and construction, AS/NZS 3500.3 as modified by NZBC E1/AS2 : and Allproof Industries Installation Details.

3.4 INSTALL ALLPROOF PERIMETER DRAIN

Install Allproof Perimeter Drain in accordance with Allproof Industries Level Threshold Technical Details, and as follows:

- Set channel up against building line. Level channel and make any cuts that are required working from the centre outwards.
- Install grates or insert timber into channel. This will reduce any movement when pouring the concrete.
- Pour concrete.
- Lay screeding towards the outlet to create a 1:200 fall in accordance with NZBC E2/AS1, paragraph 7.4.2.2, and Figure 7.4.2.1: Level thresholds for ground level.
- Install grates. Cut down grates and place into the channel keeping a 12mm distance between the grate and the building line. Clip grates into place or install into bracket. Or measure and order custom fabricated grates.

3.5 INSTALL ALLPROOF CANTILEVER BRACKET (CB) SYSTEM - TILE/PAVER FINISH

Install Allproof Cantilever Bracket (CB) System in accordance with Allproof Industries Level Threshold Technical Details, and as follows:

- Set up boxing to establish height of concrete slab required and configuration of 150mm high x 200mm wide channel, in accordance with details provided by Allproof Industries shop drawing.
- Pour concrete.
- Adjust leg height on bracket and set into channel to create a level surface with the interior floor finish / joinery.
- Install mounting bolts into concrete slab to ensure bracket is fixed with no play or movement. Provide a 12mm gap between frame and joinery.
- Lay tiles / pavers over and / or up to the frame using screed to level out the surface around the mounting points of the frame.
- Install grate.

3.6 INSTALL ALLPROOF CANTILEVER BRACKET (CB) SYSTEM - CONCRETE FINISH

Install Allproof Cantilever Bracket (CB) System in accordance with Allproof Industries Level Threshold Technical Details, and as follows:

- Form up base and nib of channel (105mm below finished surface of a 150mm minimum depth channel x 200mm wide) to support cast-in threshold bracket.
- Pour concrete and remove timber boxing to complete nib.
- Adjust leg height on bracket and set into channel to create a level surface with the interior floor finish / joinery.
- Install cast-in cantilever bracket to nib using masonry anchors. Provide a 12mm gap between frame and joinery.
- Pour concrete - finished slab.
- Install grate.

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3.7 INSTALL ALLPROOF THREADED LEG (TL) SYSTEM

Install Allproof Threaded Leg (TL) System in accordance with Allproof Industries Level Threshold Technical Details, and as follows:

- Set up boxing to form 150mm high x 200mm wide channel. Ensure that concrete edge has a clean bullnose edge finish as frame will need to sit flush to edge.
- Pour concrete.
- Remove boxing.
- Adjust leg height on bracket and set into channel with 12mm stoppers against the joinery.
- Apply any last adjustments ensuring that there is a level surface with the interior floor finish / joinery and exterior surface.

Installation - connection

3.8 CONNECT TO SURFACE WATER DRAIN

Connect Allproof level threshold drainage system to stormwater drain to the requirements and satisfaction of the network utility operator.

3.9 CLEAN

Clean and flush out the whole installation and remove all silt and debris before handing over.

Completion

3.10 REPLACE

Replace damaged or marked elements.

3.11 LEAVE

Leave the whole of this work discharging completely and freely into the stormwater system and free of all debris. Leave work to the standard required by following procedures.

3.12 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

For further details on selections go to www.allproof.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials - Allproof level threshold drainage systems

4.1 ALLPROOF PERIMETER BRACKET

Location:	Ground floor along shopfront line (Refer to Architectural drawings for all locations)
Manufacturer:	Allproof Industries
Grate code:	PB150WW TL
Grate type:	2M length of Perimeter Bracket with SS316 Wedgewire grate
Grate width:	Adjustable up to 185mm on selected grates
Grate finish:	316 Stainless Steel
Threshold finish:	Concrete
Load rating:	A - Pedestrian (330kg nominal wheel load)

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7701 ELECTRICAL

1 GENERAL

1.1 LIGHTING, SECURITY AND DATA/POWER

Refer to Electrical consultant drawings that include schedules for equipment

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7938PB MONKEYTOE FALL PROTECTION SYSTEMS

1 GENERAL

This section relates to the supply and installation of Monkeytoe Group Ltd. permanent safety access systems required for routine maintenance and servicing activities on buildings.
It includes:

- Horizontal permanent cable system
- Horizontal permanent rail system

Documents

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 1891.2	Industrial fall-arrest systems and devices - Horizontal lifeline and rail systems
AS/NZS 1891.4	Industrial fall-arrest systems and devices - Selection, use and maintenance
WorkSafe	Guidelines for the provision of facilities and general safety in the construction industry
WorkSafe	Best practice guidelines for working at height in NZ – Good Practice Guidelines
WorkSafe	Working on roofs - Good Practice Guidelines

1.2 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Product data sheets and installation instructions.

Manufacturer/supplier contact details

Company:	Monkeytoe Group Ltd.
Web:	www.monkeytoe.co.nz
Email:	spec@monkeytoegroup.com
Telephone:	0800 658 637

1.3 SPECIFIC DESIGN DOCUMENTS

Specific design documents relating to this part of the work:

Document:	Refer to MonkeyToe documents
Refer to:	Refer to MonkeyToe documents

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For corrosion, fixing and associated flashing

- Provide this warranty on the manufacturer/supplier standard form (if unavailable use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years	For workmanship - subject to annual re-certification by an accredited re-certification technician.

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- Provide this warranty on the installer/applicator standard form (if unavailable use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be accredited Monkeytoe Group Ltd. installers. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.7 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.9 WORKING AT HEIGHT

Carry out a hazard assessment for all work at height. It is essential that the hazards are identified before the work starts and that the necessary equipment, appropriate precautions and systems of work are provided and implemented.

1.10 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not limited to:

- Location and type of safety access system.
- Details how the products are attached to the structure, including fixings to the structure and flashings.

1.11 OPERATION AND MAINTENANCE MANUALS

Refer to the general section 1239 OPERATION & MAINTENANCE for the requirements for submission and review of operation and maintenance manuals.

Provide the following operation and maintenance manual(s):
Monkeytoe Group Ltd. Operational & Maintenance Manual

Include the following in the operation and maintenance manual(s):

- Inspection and testing programme to comply with AS/NZS 1891.4, Section 9 Inspection maintenance and storage
- Manufacturer maintenance instructions

1.12 MAINTENANCE CONTRACT PROPOSAL

Provide a priced proposed maintenance contract for the annual re-certification by an accredited re-certification technician to meet warranty requirements.

Compliance information

1.13 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Manufacturer's, importer's or distributor's warranty
- Installer's / applicator's warranty
- Producer Statement PS1 - Design for the systems including fixings
- Producer Statement PS3 - Construction from the applicator / installer
- Producer Statement PS4 - Construction Review from an acceptable suitably qualified person

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2 PRODUCTS

Materials

2.1 HORIZONTAL PERMANENT CABLE SYSTEM

Cable system consisting of an assembly of components forming a horizontal lifeline system. Refer to SELECTIONS.

2.2 HORIZONTAL PERMANENT RAIL SYSTEM

Rail system consisting of an assembly of components including rails and carriage. Refer to SELECTIONS.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to the general section 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS

Refer to the general section 1250 TEMPORARY WORKS & SERVICES for protection requirements.

Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

Installation/application

3.3 INSTALLATION

Install to Monkeytoe Group Ltd. design and manufacturer requirements. Ensure all fixings are made to parts of the permanent structure capable of resisting the required loadings. Seal penetrations to maintain weather tightness.

3.4 MOVING PARTS

When assembled, all moving parts must move freely and without binding.

3.5 HARNESSES AND ACCESSORIES

Provide harnesses and accessories listed in SELECTIONS.

Completion & Commissioning

3.6 COMPLETION MATTERS

Refer to the general section 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

3.7 COMMISSIONING - TESTS & CERTIFICATION

Refer to the general section 1270 CONSTRUCTION for general test and certification requirements for commissioning. Inspect and test the installation to AS/NZS 1891.2 and AS/NZS 1891.4. On completion provide an installer's 'Producer Statement PS3 - Construction' and a 'Producer Statement PS4 - Construction Review' from a suitably qualified person. Tag all systems for use.

4 SELECTIONS

Materials

For further details on selections go to www.monkeytoe.co.nz
Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.



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4.1 MONKEYTOE - HORIZONTAL PERMANENT CABLE SYSTEM

Location:	Main metal profile roof and lower canopy roof.
Manufacturer:	3M™
Supplier/Installer:	Monkeytoe Group Ltd.
Type:	3M™ RoofSafe™ Cable
Description:	Top mounted fall arrest cable system
Application:	Fall arrest

4.2 MONKEYTOE - HORIZONTAL PERMANENT RAIL SYSTEM

Location:	Main Membrane roof.
Manufacturer:	Kattsafe
Supplier/Installer:	Monkeytoe Group Ltd.
Type:	Kattsafe Rigid 130 Rail
Description:	Top Mounted abseil/Fall arrest rail
Application:	Fall arrest, Abseil

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8261 ROADMARKINGS & SIGNS

1 GENERAL

This section relates to the supply and application of paint on car parking surfaces

Documents

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 1428.4.1	Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators
NZS 5414	Specification for the construction of traffic signs
MOTSAM.1	NZTA Manual of traffic signs and markings - Part 1: traffic signs.
MOTSAM.2	NZTA Manual of traffic signs and markings - Part 2: markings.
NZTA TCD	Traffic Control Devices Manual (TCD manual)
NZTA T12	Specification for long-life pavement marking material applicator testing
NZTA T18	Specification for roadmarking raised pavement marker (RPM) adhesive heater and thermoplastic pre-heater testing
NZTA M07	Specification for Roadmarking Paints
TNZ M/12	Specification for Raised Pavement Markers
NZTA M14	Specification for Edge Marker Posts
TNZ M/20	Thermoplastic Road-Marking Materials
TNZ P/12	Pavement Markings
TNZ P/14	Specification for Raised Pavement Markers Installation
NZTA P16	Specification for Installation of Edge Marker Posts

Note; MOTSAM 1 & MOTSAM 2 are partly superseded by parts of NZTA TCD, so MOTSAM and TCD may have to be read together. In case of conflict NZTA TCD takes precedence.

Requirements

1.2 QUALIFICATIONS

Workers to be experienced, competent trades people familiar with the materials and techniques specified.

1.3 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

Quality control and assurance

1.4 INSPECTIONS

Notify the Contract Administrator for inspection of the works following:

- Set out of road marking prior to commencing any painting



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2 PRODUCTS

2.1 PAINT AND THERMOPLASTICS

All paint used for road marking to NZTA M07.
Paint colour to MOTSAM.1, MOTSAM.2 and NZTA TCD standards.
Thermoplastic marking material to TNZ M/20.

2.2 APPLICATION

Plant shall have current certificates to NZTA T12 or NZTA T18 as applicable.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE AND HANDLING

Take delivery of materials and goods and store on site and protect from damage.

Protect finished surfaces, edges and corners from damage.
Move/handle goods in accordance with manufactures requirements.
Reject and replace goods that are damaged or will not provide the required finish.

3.2 ROAD SURFACE PREPARATION

Remove any loose chip, dirt or other course material prior to applying any new road markings or recoating any existing road markings.

3.3 SETTING OUT

Set out the road marking ensuring that the centre, edge and lane lines are true and straight and follow curves evenly and correctly. Ensure that intersection markings and similar are set out accurately as far as dimensions and locations are required. Set out to a tolerance of ±25mm. Use appropriate methods for setting out such as chalk lines or string lines.

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section CONSTRUCTION for general requirements.

3.5 ROAD MARKING

All new road markings shall be completed to TNZ P/12, MOTSAM.2 and NZTA TCD. Paint shall be applied by a paint applicator, certified and operated in accordance with NZTA T12.

Use cones or other appropriate markers to protect new road markings until the paint dries.

3.6 NON-CONFORMING MARKINGS REMEDIATION

To TNZ P/12 Section 15. Non-conforming markings.

Completion

3.7 ROUTINE CLEANING

Carry out routine trade cleaning of this part of the work including periodic removal of all debris, unused materials and elements from the site.

3.8 DEFECTIVE OR DAMAGED WORK

Repair damaged or marked elements. Replace damaged or marked elements where repair is not possible or will not be acceptable. Leave work to the standard required for following procedures.

3.9 PROTECT

Protect markings until completely dry and hard.

4 SELECTIONS

Substitutions are not permitted to the following, unless stated otherwise.

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Materials

4.1 ROADMARKING PAINT

Location:	Car parking levels and ramps
Type/Brand:	Road marking of the car parking spaces
Colours:	White / yellow as required
No. of coats:	2

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8262 HTS GROUP - PARKING BARRIER GATE

1 GENERAL

1.1 PARKING BARRIERS LEVEL P01 TO UPPER LEVELS

Nominated supplier by Naylor Love

- **Magnetic MHTM Barrier Gate (3 to 6m) to be installed.**
- The Magnetic.Access Pro-H model is part of the Magnetic. Access product range and is especially designed for access applications with a boom skirt.
- Magnetic.Access Pro-H models contain the same compo nents as Magnetic.Access Pro-L barriers but the housing is adjusted in height and it comes with a MicroBoom (straight boom) instead of a VarioBoom. Optionally available are plug gable modules to extend the functionality of the barrier as well as comprehensive accessories

CAR PARK BARRIER ARMS | Installation, Service & Maintenance
sales@htsgroup.co.nz

alternative options are variable and alternative can be selected

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8262HM FREEDOM WORKS TRAFFIC MANAGEMENT

1 GENERAL

This section relates to the supply and installation of

It includes:

- Rubber Wheelstops
- Bollards
- Impact Protection

Documents

1.1 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 2890.1	Parking facilities - Off-street car parking

1.2 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Freedom Works™ Traffic Management technical data sheets

Manufacturer/supplier contact details

Company:	Freedom Strategies Ltd
Trading as:	Freedom Works
Web:	www.freedomworks.co.nz
Email:	sales@freedomworks.co.nz
Telephone:	0800 687 004

Warranties

1.3 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For materials

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.4 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 years	For workmanship

- Provide this warranty on the installer/applicator standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

1.6 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier.

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Performance

1.7 COMPLIANCE INFORMATION - WHEEL STOPS
To AS/NZS 2890.1 Parking facilities - Off-street car parking

2 PRODUCTS

Materials

2.1 FREEDOM WORKS™ RUBBER WHEEL STOP
Recycled rubber wheel stop. Refer to SELECTIONS.

2.2 FREEDOM WORKS™ STEEL SAFETY BOLLARDS - SURFACE MOUNTED
Galvanized steel safety bollards, circular profile, 1100mm high x 170mm diameter. Available in plain galvanized steel or powder coated in yellow. Refer to SELECTIONS.

2.3 FREEDOM WORKS™ IMPACT PROTECTION - FOAM CORE
Polyurethane foam core with a hard plastic outer, surface, edge, corner and pipe protection. Refer to SELECTIONS.

2.4 FREEDOM WORKS™ IMPACT PROTECTION - STEEL
Brushed stainless steel, 316 Marine Grade, angle corner protection. Available in sizes 50x50x3mm with length to order or 75x75x3mm by 900mm long. Available in powder coated or anodized. Refer to SELECTIONS.

Components - wheel stops

2.5 SPIKED FASTENERS - FOR FIXING INTO ASPHALTIC PAVEMENTS
Galvanized spike as supplied by Freedom Works™, suitable for fixing wheel stops into asphaltic pavements.

2.6 ANKASCREW - FOR FIXING INTO CONCRETE
Galvanized AnkaScrew as supplied by Freedom Works™, suitable for fixing wheel stops to concrete.

2.7 ADHESIVE - FOR BONDING WHEEL STOPS
Adhesive suitable for bonding wheel stop to concrete or asphaltic pavements. Refer to SELECTIONS.

Components - bollards

2.8 GALVANIZED TRUBOLT - FOR FIXING INTO CONCRETE
Bollard base plate fixed down with 4 x M12 Trubolts™, as supplied by Freedom Works™.

Components - surface / edge / corner protection

2.9 ADHESIVE - FOR FIXING IMPACT PROTECTION PROFILES
Modified acrylic adhesive resistant to light and aging, bond strength 21N / 25mm, for bonding surface, edge, corner and pipe protection to substrate.

2.10 DOUBLE SIDED TAPE - FOR FIXING IMPACT PROTECTION PROFILES
High performance double sided tape supplied on the foam protectors by Freedom Works™ for fixing surface, edge, corner and pipe protection to substrate.

2.11 SCREWS - FOR FIXING IMPACT PROTECTION PROFILES
Screws as supplied by Freedom Works™ for fixing steel corner protection to substrate.

3 EXECUTION

Conditions

3.1 INSPECTION
Before starting work inspect the substrate to ensure that it will allow work of the required standard.

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3.2 PROTECTION

Protect adjoining work surfaces and finishes during the installation.

3.3 CONCRETE SURFACE PREPARATION

Clean concrete surfaces as required to suit application of adhesive.

3.4 LAYOUT

Plan the general layout to conform to position and orientation requirements.

3.5 DELIVERY, STORAGE AND HANDLING

Take delivery of materials and goods and store on-site and protect from damage. Protect finished surfaces, edges and corners from damage. Move/handle goods in accordance with manufacturer's requirements. Reject and replace goods that are damaged.

Installation - general

3.6 INSTALLATION

Install products plumb and true to line.

Installation - wheel stop

3.7 INSTALL WHEEL STOP - ADHESIVE

Ensure pavement surface is clean, dry and dust free. Position wheel stop and chalk mark wheel stop position. Roll wheel stop onto its back, spread adhesive around all ground bearing edges and bridges of the wheel stop. Place wheel stop into position, wriggle slightly to embed into both surfaces. Leave undisturbed for 24 hours.

3.8 INSTALL WHEEL STOP - ASPHALTIC PAVEMENTS

Position wheel stop. Drill pilot holes approximately 50mm deep using an 8mm dyna drill. Drive spiked fasteners into the pavement using a heavy duty hammer, ensuring the head of the fastener is driven fully into the rebated area in the wheel stop. Provide 3 fasteners per wheel stop.

3.9 INSTALL WHEEL STOP - CONCRETE PAVEMENTS

Position wheel stop. Drill pilot holes approximately 100mm deep using a 10mm dyna drill. Drive the galvanized AnkaScrew into the concrete using a heavy duty hammer ensuring the head of the fastener is driven fully into the rebated area in the wheel stop. Provide 3 fasteners per wheel stop.

Installation - bollard

3.10 INSTALL BOLLARDS - SURFACE MOUNTED

Position bollard. Drill pilot holes into concrete approximately 105mm deep using a 12mm dyna drill. Clean holes thoroughly and remove all debris. Insert M12 Trubolt™ and drive with hammer until washer contacts fixture. Tighten nut to recommended torque. Provide 4 fasteners per bollard.

Installation - surface/edge/corner protection

3.11 INSTALL SURFACE / EDGE / CORNER PROTECTION

Ensure substrate is clean, dry and dust free. Position surface/edge/corner protection and mark, install and fix in position as per manufacturer's instructions.

Completion

3.12 REPLACE

Replace damaged or marked materials.

3.13 LEAVE

On completion of the installation thoroughly clean the materials. Leave surfaces, edges and visible joints free of adhesive, dirt and debris and to the standard required by following procedures.

3.14 REMOVE

Remove debris, unused materials and elements from the site.

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3.15 PROTECT

Protect completed work from damage for the period between completion of installation and completion of the contract works.

4 SELECTIONS

For further details on selections go to www.freedomworks.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Materials

4.1 FREEDOM WORKS™ RUBBER WHEEL STOP - BLACK & YELLOW

Location:	Car parking
Supplier:	Freedom Works™
Brand:	Rubber Wheel Stops
Product code:	HMWS1650
Colour:	Black with yellow hi-vis chevrons
Dimensions:	1650mm long, 140 mm wide at base, 100 mm high
Installation:	Mechanical and adhesive

4.2 ADHESIVE - FOR BONDING WHEEL STOPS

Adhesive:	Contact Freedom Works™ for direction on adhesive type.

4.3 FREEDOM WORKS™ STEEL SAFETY BOLLARDS - SURFACE MOUNTED

Location:	Car parking and ramp
Supplier:	Freedom Works™
Brand:	Steel Safety Bollards
Finish:	HMSB100Y -Powder coated safety yellow over galvanized steel
Dimensions:	1100mm high x 170mm diameter
Installation:	Mechanical Fixed - 4No M12 Trubolts™
Substrate:	concrete or asphaltic

4.4 FREEDOM WORKS™ IMPACT PROTECTION - FOAM CORE

Location:	
Supplier:	Freedom Works™
Brand:	Freedom Works™ Surface Protection, Freedom Works™ Edge Protection, Freedom Works™ Corner Protection, Freedom Works™ Pipe Protection
Product code:	Surface Protection: HMSP100 70mm wide x 35mm high, HMSP110 40mm wide x 30mm high, HMSP120 40mm wide x 36mm high, HMSP130 40mm wide x11mm high, HMSP140 75mm high x 20mm wide, HMSP150 50mm wide x 20mm high Edge Protection: HMEP200 40mm wide x 36mm high, HMEP210 26mm wide x 36mm high, HMEP220 40mm wide x 36mm high Corner Protection: HMCP300 40mm wide x 25mm high, HMCP310 40mm wide x 25mm high, HMCP320 40mm wide x 36mm high, HMCP330 60mm x 60mm, HMCP340 47x47mm, HMCP350 26x26mm Pipe Protection HMPP400 Half round 50mm outer & 30mm inner dia, HMPP410 Half round 70mm outer & 50mm inner dia Refer to Freedom Works™ Product Data Sheets for the profile of each of the above selections
Colour:	Yellow/Black Stripes
Length:	Comes in 1m, 5m lengths or any specified length.
Installation:	Double sided tape fixing only or double sided tape with supplementary adhesive fixed

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4.5 FREEDOM WORKS™ IMPACT PROTECTION - STEEL

Location:

Supplier:	Freedom Works™
Brand:	Stainless Steel Corner Protection
Product code:	HMSSCP600 HMSSCP610
Size:	For HMSSCP600: 50x50x3mm, add length to suit For HMSSCP610: 75x75x3mm, 900mm long
Finish:	Powder coated
Colour:	Yellow
Fixing:	Screw fixed or Adhesive fixed

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8262VW VANGUARD VEHICULAR MANAGEMENT

1 GENERAL

This section relates to the supply and installation of Vanguard Group Ltd. vehicular management systems.
It includes:

- Protective Barrier Systems
- Bike Rails

1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

EDPM	ethylene propylene diene monomer rubber
SHS	Square Hollow Section

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

AS/NZS 1170.1	Structural design actions - Permanent, imposed, and other actions
NZS 3104	Specification for concrete production
PAS 13	Code of practice for safety barriers used in traffic management within workplace environments with test methods for safety barrier impact resilience

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
Vanguard Group Product Specification Sheets
Traffic & Pedestrian Management Guide
Road Safety & Cycleway Separation Solutions
Wheel Stop Installation Guide
Speed Hump Installation Guide
SlowStop® Bollards Specs & Installation
Convex Mirror Installation Guide

ProConsult ForkSafe Barrier Capacity Testing Report Per PAS 13:2017

Manufacturer/supplier contact details

Company:	Vanguard Group Ltd.
Web:	www.vanguardgroup.co.nz
Email:	gary@vanguardgroup.co.nz
Telephone:	0800 500 147

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For ForkSafe barrier systems

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

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1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years For installation workmanship

- Provide this warranty on the installer/applicator standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

1.8 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of operation and maintenance information as electronic PDF format document.

Compliance information

1.9 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Producer Statement - Construction from the applicator / installer
- Producer Statement - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents

2 PRODUCTS

Protective Barrier Systems

2.1 RHINOSTOP TYPE 4 SINGLE RAIL BARRIER - WITH BALUSTRADE AND MESH

Refer to technical documentation from the supplier

Bike Rails

2.2 SURFACE MOUNTED BIKE RAIL

50mm diameter single surface mounted bike rack. Finished height 800mm above ground. Available shapes include hitch, hitch with icon plate, ring, hoop, and arch. Available in galvanized steel and stainless steel. Supplied with M10 Anka screws. Refer to SELECTIONS.

Accessories

2.3 BONDUROX ADHESIVE

Bondurox Super C high strength, moisture curing polyurethane adhesive. Refer to SELECTIONS.

2.4 CONCRETE

Concrete to NZS 3104 for cast-in post foundations, minimum compressive strength 20MPa.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage, and handling of products.



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3.2 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Installation/application

3.3 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.4 EXCAVATIONS

Excavate by auguring to the dimensions detailed in Vanguard Group's Product Specification Sheets.

Protective Barrier Systems

3.5 RHINOSTOP TYPE 4 SINGLE RAIL BARRIER - WITH BALUSTRADE AND MESH

Assemble barrier modules in accordance with manufacturer's instructions. Position and mark post baseplate fixing holes on concrete substrate and drill holes. Position barriers and fix using supplied concrete screw bolt anchors.

Bike Rails

3.6 SURFACE MOUNTED BIKE RAIL

Fix surface mounted bike rail through base plate into concrete with supplied M10x75mm Anka screws (4 fixings per base plate).

Completion & Commissioning

3.7 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4 SELECTIONS

For further details on selections go to www.vanguardgroup.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials

Protective Barrier Systems

4.1 RHINOSTOP TYPE 4 SINGLE RAIL BARRIER - WITH BALUSTRADE AND MESH

Location:	Car Parking building
Type:	RhinoStop Type 4 Single rail Barrier - with balustrade and mesh
Supplier:	Vanguard Group Ltd.
Size/Code:	1100mm high x 175mm deep overall
Module width:	Shop Drawings to be undertaken
Material/Finish:	Galvanised steel finish

Bike Rails

4.2 VANGUARD SURFACE MOUNTED BIKE RAIL

Location:	Basement - Bike parking & Five Mile Lane Footpath
Type:	Surface Mounted Bike Rail
Supplier:	Vanguard Group Ltd.
Shape/Code:	Single Hitch Bike Rack
Size:	800mm high
Finish:	Stainless Steel

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8310 LANDSCAPING - DESIGN AND BUILD SUBTRADE

1 GENERAL

1.1 GENERAL LANDSCAPING

- Refer to drawing A0014 that notes the planting scheme that forms part of the Design and Install landscaping for the project. The subcontractor is responsible for landscpaing to the greater Five Mile Precinct

- Works include the GRC planter boxes as drawn on A0260 that outline the planter box intent. the fabrication and inner workings are able to be changed.



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