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Aluuma Thermae

Changing Sheds

1 Sugar Lane, Frankton Arm, Queenstown, New Zealand

Project Ref: 2787

Date: 12 May 2026



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

Spec Version ID: 371155-442944
Document authenticity may be verified at masterspec.co.nz/verify/371155-442944
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1013 DOCUMENT CONTROL

1 DOCUMENT CONTROL

Document Control

1.1 PREPARED BY

Company:	SHEPPARD & ROUT ARCHITECTS
Postal Address:	PO BOX 2426
Street Address:	104 SALISBURY STREET
City:	CHRISTCHURCH
Telephone:	03 366 1562
Email:	info@sheprout.com

1.2 DOCUMENT DETAILS

Project Name:	ALUUME THERMAE CHANGING SHEDS
Project Number:	2787
Client:	ALUUME
Client Contact:	JOSH JOE-MCINDOE josh@aluume.com +64 275705157

1.3 REVISION CONTROL

Issue:	
Revision:	
Amendment Details:	
Issued to:	
Date of Issue:	
Reviewed by:	
Approved by:	

1.4 AUDIT CONTROL

Date:	12 MAY 2026
Author:	T DAGG
Approved by:	T DAGG

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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

1.1 READ ALL SECTIONS TOGETHER

Read all general sections together with all other sections.

1.2 DESCRIPTION OF THE WORK

The work is to construct a floating Sauna on a pontoon structure at the end of Pier C at Frankton Marina including:

- two standard saunas
- one private sauna with changing and private plunge
- steam room
- store
- plunge on side of pier

1.3 NO RESTRICTED BUILDING WORK

This project does not include Restricted Building Work.

Design Construction Safety

1.4 DESIGN CONSTRUCTION SAFETY MATTERS

The project has the following unusual or atypical features, which a reasonably experienced contractor may not be aware of, that may present an unexpected hazard or risk during a typical construction process.

The project is floating on Lake Wakatipu on the end of a marina pier

Provide particular health and safety procedures and methods to mitigate these hazards or risks, and specifically include them as well as any other health and safety matters in the site Health and Safety Plan (refer to section 1260 PROJECT MANAGEMENT for Plan requirements). The Contractor is still required to undertake its own assessment, to determine if they consider there are further safety matters and provide for these in carrying out the construction of the work.

Principal's Health & Safety Matters

1.5 PRINCIPAL'S KNOWN SITE HAZARDS

Site hazards known to the principal are:

The site is floating on the lake

1.6 PRINCIPAL'S SITE HEALTH AND SAFETY PLAN

Obtain a copy of the principal's site health and safety plan.

Site

1.7 SITE

The site consists of: A floating pontoon on the end of Pier C at Frankton Marina
As shown on drawing: A1.01

1.8 LEGAL DESCRIPTION

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

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1.9 EXISTING BUILDINGS

Existing buildings consist of:	The are existing buildings on the land at the Marina that will be used for administration and changing facilities
Refer drawing(s):	

1.10 EXISTING SERVICES

The following are the network utility services:

Electrical:	End of Pier C
Communications:	TBC
Water:	End of Pier C
Gas:	-
Stormwater:	-
Foul water:	End of Pier C

The services are also shown on the drawings.

Site environment - Durability

1.11 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

1.12 WIND DESIGN PARAMETERS - NON SPECIFIC DESIGN

The design wind pressures are to NZS 3604, Table 5.4 Determination of wind zone, up to and including Extra High Wind Zone.

Building wind zone VH (refer to NZS 3604, table 5.4)

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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

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
ASTM	American Society for Testing and Materials

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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:

1237S1	Schedule of Warranties
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
- Branded work sections
- Care of construction documents
- Confidentiality of documents
- Receipt of construction 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.

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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.

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 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified products and systems listed in a section unless specified otherwise. If a product is not available then immediately contact the contract administrator for direction.

1.8 PROPOSED SUBSTITUTIONS

Substitution of products or systems contained within branded work sections is not allowed. The contractor may propose substitutions to products within non branded work sections, when the contractor has determined that the proposed substitution is an alternative to the specified product. The Contract administrator is not bound to accept any substitutions. Submit a draft proposal detailing the substitution to the contract administrator before proceeding with full notification.

1.9 NOTIFICATION OF SUBSTITUTIONS

Notify the contract administrator of proposed substitution of specified products. Notification to include but not be limited to:

- Product identification
- Manufacturer's name, address, telephone number, website and email address
- Detailed comparison between the properties and characteristics of the specified product and the proposed substitution
- Statement of NZBC compliance including durability
- Details of manufacturer warranties

Plus an assessment of:

- Any changes required to the programme including any extension of time required
- Any consequential effects of the proposed substitution
- Any effect the substitution may have on Health & Safety requirements
- Allowance for time and cost for re-design and documentation (if applicable)
- Allowance for time and cost for obtaining an amendment to the Building Consent (if applicable)
- Any change in cost associated with the proposed substitution

and if requested:

- All current manufacturer's literature on the product
- Accreditations and appraisals available
- Reference standards
- Product limitations
- Samples
- List of existing installations in the vicinity of the project

1.10 ACCEPTANCE OF SUBSTITUTIONS

Acceptance of any proposed substitutions will be given in writing by the contract administrator.

Amendments to issued Building Consent

1.11 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:

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- 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.

1.12 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

1.13 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.

1.14 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.

1.15 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

1.16 BRANDED PRODUCTS / SYSTEMS

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

1.17 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.

Care of construction documents

1.18 CONSTRUCTION ISSUE

Take receipt of the plans, specifications and other documents issued “for construction”. Keep at least one copy on site available for use by all on site workers. Keep a record of copies provided to others including subcontractors. Protect the documents as appropriate. Obtain replacement copies for documents that have become damaged.

1.19 REVISIONS TO CONSTRUCTION ISSUE

Where revised plans and other documents are issued ensure that superseded documents are deleted from the working sets. Ensure that subcontractors are provided with amended documents. Delete superseded documents by either:

- removing them from the working copy of the construction issue; or
- marking them as superseded

1.20 RETURN DOCUMENTS ISSUED FOR CONSTRUCTION

On completion of the contract works:

- Keep such copies of the plans, specification and other documents as reasonably required for contractor’s record purposes.

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- Retrieve all other copies no longer required by parties.
- Agree method of disposal of such documents with the Contract Administrator.

The Contract Administrator will advise whether such documents shall be:

- delivered to the Contract Administrator/Owner; or
- disposed of by normal waste disposal methods; or
- disposed of by secure document disposal methods.

Confidentiality of documents

1.21 CONFIDENTIALITY OF DOCUMENTS

Documents shall not be given or copied to others who do not require them for carrying out services required for the construction of the works. Documents are only to be used for the contract. Maintain confidentiality of documents.

2 SELECTIONS

Receipt of construction documents

2.1 DOCUMENT RECEIPT - ELECTRONIC DOCUMENTS

Electronic documents issued for construction shall be emailed

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1237 WARRANTIES

1 GENERAL

This general section refers to the requirements for warranties/guarantees, referred to within this specification and referred to within separate specifications/documents relating to this project. It includes:

- Warranties for parts of the work required by the principal in a required form
- Installer/applicator warranties for parts of the work in the installer's/applicator's standard form
- Manufacturer/supplier warranties provided with products, appliances and the like in the manufacturer's/supplier's standard form
- Guarantees provided by contractor in the contractor's standard form

These guarantees/warranties are in addition to any warranties, implied warranties, or guarantees that are required by the Building Act, the Building Regulations, or the building consent.

1.1 SCHEDULE SECTION

Refer to 1237S1 SCHEDULE OF WARRANTIES for work sections contained in this specification that have requirements for warranties.

Warranties

1.2 PROVIDE WARRANTIES

Provide executed warranties in favour of the principal in respect of, but not limited to, materials, components, service, application, installation and finishing called for in that specified section of work. The terms and conditions of the warranty in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability under the terms of the warranty called for in that specified section of work.

- Conform to the WARRANTY AGREEMENT form included in the specification/conditions of contract.
- Commence warranties from the date of practical completion of the contract works (unless otherwise stated).
- Maintain their effectiveness for the times stated.
- Provide executed warranties prior to practical completion.

1.3 WARRANTIES - INSTALLER/APPLICATOR

Where installer/applicator warranties are offered covering execution and materials of proprietary products or complete installations, provide such warranties to the contract administrator. These warranties may be provided in lieu of the warranties that are otherwise required provided that these warranties are subject to similar conditions and periods.

Provide warranties in favour of the principal. The terms and conditions of such warranties in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability for execution and materials for that part of the work.

1.4 WARRANTIES - MANUFACTURER/SUPPLIER

Where warranties are offered covering materials, equipment, appliances or proprietary products, provide all such warranties to the contract administrator.

Provide warranties in favour of the principal. The terms and conditions of such warranties in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability for execution and materials for that part of the work.

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Submission

1.5 REVIEW BY CONTRACTOR

Obtain the warranties from the installers, applicators, manufacturers and suppliers at the earliest possible date and review to ensure that they are correctly filled out and executed. Where warranties are executed as a deed, ensure that a duplicate copy is provided for execution by the owner/principal. Keep safe and secure until required for submission.

1.6 WARRANTIES - REQUIRED BY BUILDING CONSENT AUTHORITY

Obtain copies of warranties required as a condition of the building consent in the form required for submission to the BCA. Keep safe and secure until required at the time of the BCA final inspection and Code Compliance Certificate.

1.7 WARRANTIES - REQUIRED BY CONTRACT

Obtain copies of warranties listed in the contract documents. Provide all warranties at the same time. If the project has an operations and maintenance documentation provision, present the warranties with the operations and maintenance information. If no operations and maintenance documentation provision exists, present the warranties to the contract administrator in a loose-leaf binder with a contents index suitably labelled and including the project name and details. Provide a title on the binder edge "Warranties for (project name)"

1.8 WARRANTIES - SUBMISSION NZS 3910 CONTRACT

Refer to NZS 3910 Conditions of Contract for building and civil engineering construction, for requirements relating to the time for submission of warranties and guarantees. Submit all warranties/guarantees to the Contract Administrator no later than the date that the contractor notifies that it believes the contract works qualify for practical completion or any other time stated in the Specific Conditions of Contract.

2 SELECTIONS

Project warranties / guarantees

Weathertightness and watertightness warranty

2.1 WEATHERTIGHTNESS AND WATERTIGHTNESS WARRANTY

A warranty is required from the contractor for a minimum period of 2 years, covering the weathertightness of the complete building envelope and the watertightness of all liquid supply and disposal systems and fittings. This general warranty is in addition to any specific warranties required.

Provide this warranty in favour of the principal. The terms and conditions of this warranty in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability for execution and materials for that part of the work.

- Conform to the standard form WARRANTY AGREEMENT included in the contract documents.
- Commence the warranty from the date of Practical Completion.
- Maintain its effectiveness for the time stated.

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1237S1 SCHEDULE OF WARRANTIES

1 GENERAL

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

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1237 WARRANTIES
- Identified Work Sections

Warranties

1.2 WARRANTIES

Refer to the following sections:

4161T	Kingspan Thermakraft Underlays, Foils, DPC, DPM, & Tapes
4231HS	James Hardie® Stria™ Cladding
4422EF	Equus Soprema Flagon TPO Roof & Deck Membrane
4521NR	Altus Residential Aluminium Windows & Doors
4611ME	Metro Performance Glass Exterior Glazing
4612MI	Metro Performance Glass Interior Glazing
4711E	Expol Underfloor Insulation
4711EW	Earthwool Glasswool Thermal Insulation
4711KS	Kingspan Kooltherm Pitched Roof Soffit & Framing Boards
5111H	James Hardie® Fibre Cement Sheet Linings
5181RC	RCS Rockcote Interior Plaster System
5214HP	Hale Manufacturing Toilet & Shower Partitions
5231C	CS Cavity Sliders
5313GS	GIB Rondo Metal Ceiling Batten Systems For GIB Plasterboards
5511LC	Laminex Cabinetry
5516BH	Blum Cabinetry Hardware Systems
5517	Benchtops
5811	Signs & Displays
6211AW	Ardex Wall Tiling
6221A	ARDEX Floor Tiling Solutions
6614GE	Gilt Edge Stair Nosing, Transitions & Trim
6700R	Resene Painting General
7150	Sanitary Fixtures, Tapware & Accessories.
7411M	Metalcraft Roofing Rainwater Spouting Systems
7421AI	Allproof Interior Floor Waste Systems
7701PC	PDL & Clipsal Electrical

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1.3 WARRANTY PERIODS

Kingspan Thermakraft Underlays, Foils, DPC, DPM, & Tapes	15	-
James Hardie® Stria™ Cladding	15	-
Equus Soprema Flagon TPO Roof & Deck Membrane	20	5
Altus Residential Aluminium Windows & Doors	25 / 15 / 5	2
Metro Performance Glass Exterior Glazing	10	-
Metro Performance Glass Interior Glazing	10	-
Expol Underfloor Insulation	50	-
Earthwool Glasswool Thermal Insulation	50	-
Kingspan Kooltherm Pitched Roof Soffit & Framing Boards	10	-
James Hardie® Fibre Cement Sheet Linings	15	-
RCS Rockcote Interior Plaster System	5	5
Hale Manufacturing Toilet & Shower Partitions	10 / 2	2
CS Cavity Sliders	10 / 5 / 2	1
GIB Rondo Metal Ceiling Batten Systems For GIB Plasterboards	10	-
Laminex Cabinetry	10 / 7	2
Blum Cabinetry Hardware Systems	-	-
Benchtops	10	2
Signs & Displays	5	2
Ardex Wall Tiling	15	5
ARDEX Floor Tiling Solutions	10 / 15	2
Gilt Edge Stair Nosing, Transitions & Trim	5	1
Resene Painting General	7	1
Sanitary Fixtures, Tapware & Accessories.	5	2
Metalcraft Roofing Rainwater Spouting Systems	10 / 10	3
Allproof Interior Floor Waste Systems	15	-
PDL & Clipsal Electrical	1	-

1.4 PROJECT WARRANTIES

Refer to section 1237 WARRANTIES for project warranties.

1.5 WARRANTIES - ADDITIONAL ITEMS

Refer to separate documentation for warranties 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

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:

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

There are no work section requirements.

1.3 AS BUILT DOCUMENTS - ADDITIONAL ITEMS

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

- Drainage

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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:

4231HS	James Hardie® Stria™ Cladding
4422EF	Equus Soprema Flagon TPO Roof & Deck Membrane
4521NR	Altus Residential Aluminium Windows & Doors
5181RC	RCS Rockcote Interior Plaster System
5214HP	Hale Manufacturing Toilet & Shower Partitions
5231C	CS Cavity Sliders
5511LC	Laminex Cabinetry
5516BH	Blum Cabinetry Hardware Systems
5517	Benchtops
6211AW	Ardex Wall Tiling
6221A	ARDEX Floor Tiling Solutions
6614GE	Gilt Edge Stair Nosing, Transitions & Trim
6700R	Resene Painting General
7150	Sanitary Fixtures, Tapware & Accessories.
7411M	Metalcraft Roofing Rainwater Spouting Systems

Operation and maintenance manuals

1.3 OPERATION AND MAINTENANCE MANUALS

There are no work section requirements.

Maintenance contract proposals

1.4 MAINTENANCE CONTRACT PROPOSALS

There are no work section requirements.

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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1240 ESTABLISHMENT

1 GENERAL

This general section relates to site establishment including:

- Notices and approvals
- Inspections
- Site preparation
- Temporary construction

Notices and approvals

1.1 STATUTORY OBLIGATIONS

Comply with all statutory obligations and regulations of regulatory bodies controlling the execution of the works.

1.2 BUILDING CONSENT AUTHORITY AND NETWORK UTILITY APPROVALS

Attend on building consent authority officers, statutory and network utility inspectors, as necessary to obtain approvals, including those required for the completion of the works.

1.3 NOTIFY NETWORK UTILITY OPERATORS

Notify all network utility operators of proposed works before commencing site operations. Ascertain location of services or confirm that none exist in the vicinity of the works. Take all necessary precautions to avoid damage to existing services.

Site preparation

1.4 SITE ACCESS

Access to the site is limited to: Access to be agreed with Marina Operator

1.5 WORKING AREA

Limited to the following designated working areas on the site:
Area to be agreed with Marina operator

Existing buildings

1.6 ALTERATIONS

Control access and working areas within existing buildings. Liaise with building owner to establish site limitations.

1.7 TEMPORARY ACCESS

Liaise with the building owner to arrange access to areas of the existing building which are not normally part of the contract.

Temporary construction

1.8 TEMPORARY BUILDINGS

Provide as necessary temporary sheds, offices, lunch rooms, sanitary accommodation and other temporary buildings required for storage, management of the works, for the use of workers while on site and as required by Acts and Regulations.

1.9 SITE - SAFETY SIGNAGE

Provide hazard board and other safety signage as required.

First aid

1.10 FIRST AID EQUIPMENT

Provide first aid equipment.

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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 NOTICE

Give notice to the contract administrator and any other nominated person of hold points and notification points. Refer to work sections and 1260 PROJECT MANAGEMENT for hold points and notification points required.

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 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.

1.9 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.

1.10 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.

1.11 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.

1.12 SMOKE FREE REQUIREMENTS

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

1.13 RESTRICTIONS

Do not:

- light rubbish fires on the site.
- bring dogs on to or near the site.

Set-out and tolerances

1.14 DATUM

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

1.15 SET-OUT

Set out the work to conform with the drawings.

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1.16 USE OF SET-OUT INSTRUMENTS

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

1.17 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.

1.18 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

1.19 EXAMINE PREVIOUS WORK

Before commencing any part of the work carefully examine the previous work on which it depends, to ensure it is of the required standard.

1.20 REPORT DEFECTIVE PREVIOUS WORK

Refer defects to the contractor to be remedied, if the remedy is outside the scope of the contract documents the contractor shall obtain direction from the contract administrator. Do not carry out work over previous work that is defective and will affect the required standard.

1.21 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.

1.22 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.

1.23 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.

1.24 MINIMISE DELAYS DUE TO WEATHER

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

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Defective or damaged work

1.25 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

1.26 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.

1.27 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.

1.28 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.

1.29 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.

1.30 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

1.31 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.

1.32 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.

1.33 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.

1.34 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.

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1.35 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.

1.36 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.

1.37 REPLACEMENT OF PERSON

Should it be necessary to replace a person, ensure that records of work, producer statements, warranties and the like required for the part of the work they have carried out are obtained.

Ensure that the replacement person takes responsibility for the work they carry out and that they are able to provide such records of work, producer statements, warranties and the like required as a condition of the contract and the building consent.

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.

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.

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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.

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.

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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.

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.

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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.

1.62 CLEANING BY COMMERCIAL CLEANER

In addition to cleaning carried out by the contractor, use a commercial cleaning company to clean the whole of the interior of the building, including all appliances, equipment, fittings, surfaces and finishes to leave it without any blemish. Cleaning to include:

- Clean and wash down all external surfaces to remove dirt, debris and marking.
- Clean all interior surfaces including cabinetwork, joinery, sanitary and hardware items.
- Clean all floor finishes.
- Clean and polish all glass, both sides. Take particular care when removing paint or cementitious materials to not damage the glass. Do not use metal scrappers that may damage the glass.

Commissioning

1.63 SPECIAL REQUIREMENTS

Refer to individual work sections for any special commissioning requirements.

1.64 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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1.65 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.

1.66 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.

1.67 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

1.68 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.

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:

5181RC	RCS Rockcote Interior Plaster System
6700R	Resene Painting General

1.3 SAMPLES - ADDITIONAL ITEMS

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

Prototypes

1.4 PROTOTYPES - REVIEW

There are no work section requirements.

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:

6211AW	Ardex Wall Tiling
6221A	ARDEX Floor Tiling Solutions

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

There are no work section requirements.

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:

6614GE Gilt Edge Stair Nosing, Transitions & Trim

Slip resistance - surfaces requiring testing

1.6 SLIP RESISTANCE - SURFACES REQUIRING TESTING

There are no work section requirements.

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.

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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	TBC	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°
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°

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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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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.

1.1 RELATED WORK

Refer to 4161T THERMAKRAFT 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

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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

To NZBC E2/AS1. 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 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.

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

3.4 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

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Timber framing tolerances shall be in accordance with NZS 3604 Table 2.1 Timber framing tolerances.

3.6 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

3.7 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).

3.8 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. When necessary provide framing to suit required cladding/lining control joints and sheet joints.

3.9 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.

3.10 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.

3.11 STRAIGHTENING STUDS

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

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3.12 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.

3.13 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.

3.14 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.

3.15 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.

3.16 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.

3.17 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.

3.18 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.

3.19 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.

3.20 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.

3.21 DPC TO LOSP TREATED TIMBER

Refer to 4161 UNDERLAYS, FOIL AND DPC section

3.22 DPC TO TIMBER

Refer to 4161 UNDERLAYS, FOIL AND DPC section

Completion

3.23 COMPLETION MATTERS

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

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4 SELECTIONS

4.1 90MM EXTERIOR WALL FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Exterior walls:	Radiata pine	SG8	H1.2
Nogs	Radiata pine	SG8	H1.2
Wall battens (not cavity):	Radiata pine	Merch	H1.2
Jamb battens	Radiata pine	Merch	H3.1

4.2 ROOF FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Rafters:	Radiata pine	SG8	H1.2
Skillion roof framing:	Radiata pine	SG8	H1.2
Enclosed flat roof framing:	Radiata pine	SG8	H1.2

4.3 90MM 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 90X45MM CEILING JOISTS - RADIATA PINE

Member	Species	Grade	Treatment
Ceiling Joists	Radiata pine	SG8	H1.2

4.5 CEILING FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Ceiling joists:	Radiata pine	SG8	H1.2
Timber ceiling battens:	Radiata pine	SG8	H1.2

4.6 DPC

Refer to 4161 UNDERLAYS, FOIL AND DPC section

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4161T KINGSPAN THERMAKRAFT UNDERLAYS, FOILS, DPC, DPM, & TAPES

1 GENERAL

This section relates to the supply and installation of Kingspan's Thermakraft product range including DPC, Roof Underlays, Flashing Tapes, and 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:

DPC	Damp proof course
DPM	Damp proof membrane
EPDM	Ethylene propylene diene monomer

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.

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:

DPC	Damp proof course
DPM	Damp proof membrane
EPDM	Ethylene propylene diene monomer

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 E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS 1530.2	Methods for fire tests on building materials, components and structures - Test for flammability of materials
AS/NZS 2904	Damp-proof courses and flashings
NZS 3604	Timber-framed buildings
NZS 4229	Concrete masonry buildings not requiring specific engineering design
AS/NZS 4347	Damp-proof courses and flashings - Methods of test
AS/NZS 4389	Roof safety mesh
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire

CodeMark CMNZ10002 ver04 - Watergate Plus Wall Underlay
CodeMark CMNZ30028 (Rev J) - Thermakraft Covertek 407 Roof and Wall Underlay
CodeMark CMNZ30030 (Rev J) - Thermakraft Covertek 405 Roof and Wall Underlay
CodeMark CMNZ30069 (Rev I) - Thermakraft Covertek 403 Roof and Wall Underlay

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Thermakraft's Product Data Sheets

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Thermakraft's Installation Guides
BRANZ Appraisal 329 (2022) - Supercourse 500 Damp-Proof Course and Concealed Flashing - Amendment 29.08.2023
BRANZ Appraisal 651 (2024) - Thermakraft Covertek 407 Roof and Wall Underlay - Amended 01.07.2025
BRANZ Appraisal 695 (2023) - Watergate Plus Wall Underlay - Amended 01.07.2025
BRANZ Appraisal 743(2025) - Thermakraft Covertek 405 Roof and Wall Underlay
BRANZ Appraisal 878 (2025) - Thermakraft Aluband Window Flashing Tape
BRANZ Appraisal 912 (2021) - Thermakraft 220 Synthetic Wall Underlay - Amended 01.07.2025
BRANZ Appraisal 917(2025) - Thermakraft Covertek 403 Roof and Wall Underlay
BRANZ Appraisal 942 (2022) - OneSeal Multi-fit Pipe and Cable Penetration Seals - Amendment 04.06.2024
BRANZ Appraisal 943 (2021) - Thermakraft Covertek 401 Roof and Wall Underlay - Amended 01.07.2025
BRANZ Appraisal 1000 (2023) - Thermakraft Thermabar 397 Light Diffusing Reflective Underlay - Amended 01.07.2025
BRANZ Appraisal 1029 (2023) - Thermakraft Ausnet Hexagonal Wire Mesh
BRANZ Appraisal 1104 (2020) - Thermathene Orange Concrete Underlay - Amendment 06.09.2024
BRANZ Appraisal 1122 (2026) - Thermaflash Flashing Tape
BRANZ Appraisal 1229 (2023) - Thermakraft Covertek 215 Roof Underlay - Amended 19.06.2025
BRANZ Appraisal 1277 (2025) - Thermakraft RainArmor Self Adhesive Roof Underlay and Wall Underlay

Manufacturer/supplier contact details

Company:	Kingspan Insulation NZ Ltd
Web:	www.thermakraft.co.nz
Email:	technical@kingspaninsulation.co.nz
Telephone:	0800 806 595

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years	For Kingspan Thermakraft product range.

- 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

1.6 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.

Compliance information - CodeMark certified

1.8 CODEMARK CERTIFICATE - THERMAKRAFT COVERTEK 407

Thermakraft Covertek 407 roof and wall underlay meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CMNZ30028 (Rev J).

Compliance information - BRANZ appraised

1.9 BRANZ APPRAISED - THERMAKRAFT SUPERCOURSE 500

Thermakraft Supercourse 500 DPC has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 329

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1.10 BRANZ APPRAISED - THERMAKRAFT COVERTEK 407

Thermakraft Covertek 407 roof and wall underlay has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 651

2 PRODUCTS

DPC

2.1 THERMAKRAFT SUPERCOURSE 500

BRANZ appraised, 0.5mm thick embossed black film DPC composed of recycled alloyed polyethylene. Tested to AS/NZS 4347 in accordance with AS/NZS 2904. Available in various width. Refer to SELECTIONS.

Synthetic underlays - fire retardant

2.2 THERMAKRAFT COVERTEK 407

CodeMark certified and BRANZ appraised self-supporting synthetic roof and wall underlay, white with red logo print, composed of a water resistant vapour permeable film laminated to two layers of non-woven, spun bonded polyolefin sheet. Fire retardant, tested to AS 1530.2 and assigned a Flammability Index of ≤12. Available in 1250mm and 2550mm width. Refer to SELECTIONS.

Fixings

2.3 FIXINGS - TO TIMBER

Little grippers, staples, clouts or screws to suit application. Refer to SELECTIONS.

2.4 FIXINGS - TO STEEL

Construction grade double sided tape, adhesive or galvanized flat head screws to suit application. 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 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/application - generally

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Installation - DPC

3.5 INSTALL DPC

Ensure substrate's surface is smooth, flat and free from sharp ridges/projections that may puncture membrane. Install as a single layer with minimum 50mm overlap at joints to the Installation Guide.

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Installation - roof underlay

3.6 INSTALL ROOF UNDERLAY - HORIZONTAL

Install underlay to the Installation Guide horizontally and in true alignment over exterior face of roof framing. Place first sheet overlapping guttering (max. 20mm) or if eaves flashing is used terminate on the upper side of the flashing, draw sheet taut and fix at maximum 300mm centres to roof framing members. Install additional sheets in row repeating the process for the first sheet with sheet end laps to be of at least 150mm. Install sheets up to and over the ridge repeating the installation process for the first row and overlapping higher over lower sheets by at least 150mm.

3.7 INSTALL ROOF UNDERLAY - VERTICAL

Install underlay to the Installation Guide vertically and in true alignment over exterior face of roof framing. Place first sheet up the slope to the ridge overlapping guttering (max. 20mm) or if eaves flashing is used terminate on the upper side of the flashing, draw sheet taut and fix at maximum 300mm centres to roof framing members. Install additional sheets repeating the process for the first sheet lapping joints by at least 150mm.

Completion

3.8 COMPLETION MATTERS

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

4 SELECTIONS

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

DPC

4.1 DPC - THERMAKRAFT SUPERCOURSE 500

Location:	Generally between timber and concrete / steel
Manufacturer:	Thermakraft
Brand:	Supercourse 500
Type:	Damp proof course
Width:	To suit application

Synthetic underlays - fire retardant

4.2 ROOF & WALL UNDERLAY - THERMAKRAFT COVERTEK 407

Location:	Exterior walls generally
Manufacturer:	Thermakraft
Brand:	Covertek 407
Type:	Synthetic roof and wall underlay
Width:	To suit application
Fixings:	Galvanized 20mm large head clouts
Maximum UV exposure:	Walls - 60 days Roofs - 7 days

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4224 TIMBER EXTERIOR TRIM

1 GENERAL

This section relates to lengths of timber fixed on site, either associated with timber cladding, or used as isolated trim with other wall cladding or soffit materials:

- trim
- fascia boards
- cover boards

Related work

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:

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

Documents

1.2 DOCUMENTS

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

NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings

2 PRODUCTS

Materials

2.1 TIMBER TRIM

To NZS 3602, treated H3.1 unless durable heart wood, to profiles detailed/scheduled.

2.2 PROPRIETARY TIMBER TRIM

To NZS 3602, treated H3.1.

Components

2.3 NAILS, GALVANIZED

60mm x 2.8mm galvanized steel wire jolt/flat/raised head generally. Use other sizes to suit profiles being fixed.

2.4 NAILS, STAINLESS STEEL

60mm x 2.8mm stainless steel wire jolt/flat/raised head generally. Use other sizes to suit profiles being fixed.

Finishes

2.5 PRIMER

Water borne acrylic or solvent borne oil-alkyd primer to suit the timber and proposed painting system.

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3 EXECUTION

Conditions

3.1 STORAGE

Take delivery of trims undamaged and unmarked and store on site flat and true, under cover, and clear of areas where work is in progress, to ensure materials are of the required standard when fixed in place.

3.2 SUBSTRATE

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 rectified.

Application - preparation

3.3 PRIMING AND SEALING

If not pre-finished before delivery, coat all faces and edges immediately. Then fillet stack trim until fixed. Keep dry and undamaged. Coat to suit the paint system specified in painting section/s. Allow to re-coat if exposed for more than one month before the final coating is applied.

Application

3.4 EXECUTION

To 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).

3.5 TIMBER TRIM

Using full lengths, scribe internal joints and mitre external and running joints. Fully support all joints and fix securely, plumb, level and true to line and face, fully nailed. For paint finish prime joint edges before fixing, otherwise seal them without runs onto any exposed face.

3.6 NAILING, PAINT FINISH

Punch nails and patch prime external trim being painted, before stopping as specified under painting preparation.

Completion

3.7 LEAVE

Leave the whole of this work free of blemishes, undamaged and to the standard of finish required for following procedures.

3.8 PROTECTION

Protect the completed work and make good before any surface finish is applied.

3.9 REPLACE

Replace all damaged or marked elements.

3.10 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

4.1 PROPRIETARY TIMBER TRIM: FASCIA

Location:	New Link Roof
Size:	150x30mm
Species/grade:	Radiata pine clears
Treatment:	H3.1
Finish:	Selected Paint Finish

4.2 PRIMER

Brand/type:	TBA

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4231HS JAMES HARDIE® STRIA™ CLADDING

1 GENERAL

This section relates to the supply and installation of **James Hardie®** Stria™ Cladding on a drained cavity.

1.1 RELATED WORK

Refer to 4161T KINGSPAN THERMAKRAFT UNDERLAYS, FOILS, DPC AND DPM for wall underlay

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:

CLD	Ceramic Low Density
RAB	Rigid air barrier

Documents

1.3 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 3603	Timber structures standards
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
NASH Standard Part 2	May 2019 Light Steel Framed Buildings
CodeMark CMNZ30109 - Rev C	Stria™ Cladding by James Hardie®

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

James Hardie® documents relating to this part of the work:

James Hardie® Stria™ Cladding Timber Cavity Batten Technical Specification (June 2024)
James Hardie® Stria™ Cladding Technical Specification Hardie™ CLD™ Structural Cavity Batten (June 2024)
James Hardie® Stria™ Cladding Vertical Installation Technical specification (June 2024)
Fire and Acoustic Design Manual by James Hardie, May 2025
James Hardie® Cladding to Steel Framing Technical Supplement
BRANZ Appraisal 1224 (2022) - Stria™ Cladding Horizontal
BRANZ Appraisal 1225 (2022) - Stria™ Cladding Vertical
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:	0800 808 868

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Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years: For James Hardie® Stria™ Cladding
(refer to James Hardie® product warranty.)

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of purchase of the material.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS

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 SAFE WORKING

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

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:

Relevant James Hardie® maintenance requirements.

Compliance information

1.10 CODEMARK CERTIFICATE

James Hardie® Stria™ Cladding systems meet the requirements of the NZBC when used within the Conditions and Limitations of their Certificate, CodeMark CMNZ30109

Performance - Wind

1.11 PERFORMANCE - WIND

The design wind speeds/zones are to NZS 3604, up to and including Extra High Wind Zone. This is within the scope of James Hardie® literature and details.

Performance - Fire

1.12 EXTERNAL FIRE SPREAD - CLADDING EXEMPT FROM TESTING

To NZBC C/AS1, 5.3 External cladding systems, or NZBC C/AS2, 5.5 External cladding systems, where external walls are located at a distance greater than or equal to 1.0m from a relevant boundary and a building height less than 10m.

2 PRODUCTS

Materials

2.1 STRIA™ CLADDING

Hardie™ Stria™ Cladding, low density autoclaved panel, 14mm thick, 325mm or 405mm wide and 3000 or 4200mm long, manufactured from treated cellulose fibre, Portland cement, sand and water with proprietary additives. Cured by high pressure autoclaving and manufactured to AS/NZS 2908.2. Both faces and all edges pre-sealed.

2.2 WALL UNDERLAY

For flexible wall underlays and rigid wall underlays, refer to the appropriate separate sections.

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2.3 HARDIE™ HORIZONTAL TIMBER CAVITY BATTENS

Radiata pine battens as packers, minimum 45mm wide x 20mm thick with bevelled edge and purpose cut rebates for drainage and ventilation, H3.1 treated to NZS 3602, Table 1, reference 1D.10, Requirements for wood-based building components to achieve a 50-year durability performance.

2.4 HARDIE™ 40MM STRUCTURAL HORIZONTAL CAVITY BATTENS

Proprietary profiled radiata pine battens, 45mm wide x 40mm thick with bevelled top edge andoffset grooved rebates at the front and back faces to allow for drainage and ventillation. H3.1 treated to NZS 3602, Table 1, reference 1D.10, Requirements for wood-based building components to achieve a 50-year durability performance.

2.5 CAVITY CLOSER / VENT STRIP

Refer to SELECTIONS.

Components

2.6 FASTENER

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, for fixing material, 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.

Zone	Fixing Material
Zone D, Zone E / Microclimates (incl. Geothermal)	Grade 316 Stainless
Zone B, Zone C	Hot-dipped galvanized
Bracing - All zones	Grade 316 Stainless

Check against SED (specific engineering design) requirements for microclimate conditions.

Refer to SELECTIONS for fastener types.

2.7 VERTICAL STRIA™ CLADDING COMPONENTS

Refer to SELECTIONS.

2.8 FILL

ADOS CRC Builders fill, two part exterior grade fill to finish over nail holes.

Accessories

2.9 SEALANT

Refer to SELECTIONS.

2.10 PAINT FOR SEALING CUT EDGES OF STRIA™ CLADDING

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 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.

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3.4 PRE-CLADDING REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for specified finish. Do not commence work until the substrate is of the standard required by James Hardie® for the specified finish; plumb, level and in true alignment. Carry out such additional preparatory work as required to bring the substrate to suitable condition.

3.5 TIMBER FRAMING REQUIREMENTS

Check timber framing stud and nog spacing is in accordance with NZS 3604 and framing complies with NZS 3602. For projects with specific engineering design check compliance with AS/NZS 1170 and NZS 3603. Moisture content of framing must not exceed the requirements specified by NZS 3602 to minimize shrinkage and movement after panels are fixed.

Where 600mm spacing of studs apply provide an intermediate means of support for building underlay and insulation using either 75mm galvanised mesh or polypropylene tape. Not required where studs spaced at 400mm centres or where rigid air barriers are provided in place of building underlay.

3.6 CLADDING CLEARANCES

Bottom edge clearance of cladding, ground clearances and overhang to bottom plate to comply with the requirements of NZBC E2/AS1.

Installation

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Installation - general

3.8 INSTALL CAVITY CLOSURE/VENT STRIP

Install cavity closure/vent strip in accordance with James Hardie® Stria™ Cladding Technical Specification. Install cavity closer at base of walls, on horizontal (or raking) open junctions and over openings (windows, meter boards, etc).

3.9 INSTALL HARDIE™ HORIZONTAL TIMBER CAVITY BATTENS

Install Hardie™ horizontal cavity battens horizontally to nogs and vertically at corners and openings in accordance with James Hardie® Stria™ Cladding Vertical Installation Technical specification. Do not use battens in lengths less than 300mm.

3.10 INSTALL HARDIE™ 40MM STRUCTURAL HORIZONTAL CAVITY BATTEN

Install Hardie™ 40mm Structural Horizontal Cavity Battens. Fix horizontal cavity battens to studs and fix vertically to studs at corners and openings in accordance with James Hardie® Stria™ Cladding Vertical Installation Technical specification. Seal the top of the cavity and install cavity closer/vermin-proofing at base of walls, open horizontal (or raking) junctions, over openings (windows, meters etc).

3.11 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:

- Wall underlay appropriately incorporated with penetration and junction flashings.
- Materials lapped in a way that water tracks down to the exterior face of the wall underlay.
- Wall underlay 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.
- Claddings neatly finished off to all sides of openings
- Installation of flashings (those required to be installed prior to installation of penetrating elements).

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3.12 INSTALL VERTICAL STRIA™ CLADDING TO TIMBER CAVITY BATTEN

Install cladding in accordance with James Hardie® Stria™ Cladding Vertical Installation Technical specification. For 405mm wide board, fix nails 100mm from each edge per board/per batten. For 325mm wide board, fix nails 80mm from each edge per board/per batten. Prime cut ends of cladding.

3.13 INSTALL JOINTING SYSTEMS

Install vertical, horizontal, internal and external corner joints in accordance with James Hardie® Stria™ Cladding Technical Specification.

3.14 INSTALL FLASHINGS

Install flashings at all wall openings, penetrations, junctions, connections, window sills, heads and jambs to NZBC E2/AS1.

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.jameshardie.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Materials

4.1 HARDIE™ 20MM HORIZONTAL TIMBER CAVITY BATTENS

Timber species:	Radiata pine
Treatment:	H3.1
Size:	45mm wide x 20mm thick with bevelled edge and purpose cut rebates
Batten spacing:	600mm ctrs horizontally and fixed vertically at corners and openings
Fastener type:	40mm x 2.8mm Hardie™ Flex nail
Fastener finish:	Hot-dipped galvanized
Fixing centres:	800mm

4.2 JAMES HARDIE® STRIA™ CLADDING - INSTALLED VERTICALLY

Location:	New Link Exterior Walls
Brand/type:	Hardie™ Stria™ Cladding
Size:	14mm thick x 325mm wide x 3000mm long
Fastener type:	65mm x 2.87mm D head nail for flexible underlay on Hardie™ 20mm Horizontal cavity batten
Fastener finish:	Hot-dipped galvanized

Components

4.3 VERTICAL STRIA™ CLADDING - VENT STRIP

Location:	New Link Exterior Walls
Brand/type:	302490 uPVC Vent Strip (for Hardie™ 20mm Horizontal Cavity Batten)

4.4 VERTICAL STRIA™ CLADDING - INTERNAL CORNER COMPONENT

Location:	New Link Exterior Wall
Brand/type:	Hardie™ 14mm Internal Corner
Length/code:	3000mm - code 304871
Material:	Etch primed Aluminium

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4.5 VERTICAL STRIA™ CLADDING - WINDOW JAMB FACINGS , SCRIBER & SILL

Location:	New Link Exterior Wal
Head facing:	Hardie™ Axent™ Trim
Jamb facing:	Hardie™ Axent™ Trim
Scriber:	H3.1
Planted sill:	H3.1

4.6 VERTICAL STRIA™ CLADDING - DRAINED FLASHING JOINT

Vent Strip:	302490 uPVC Vent Strip
Flashing:	

Finishing

4.7 PAINTING

Refer to painting section/s for details.

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4337E ECOPLY® ROOFING & DECKING

1 GENERAL

This section relates to the use of Carter Holt Harvey Plywood Ltd Ecoply® plywood sheets for:

- membrane roofs
- substrate for roofing

1.1 RELATED WORK

Refer to 4422EF EQUUS SOPREMA FLAGON TPO ROOF & DECK MEMBRANE for TPO membrane

Refer to 5433E ECOPLY® FLOORING for plywood used as a floor.

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®

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	Structure
NZBC E2/AS1	External moisture
AS/NZS 1170.2:2011	Structural design actions - Wind actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
AS/NZS 1604.3:2012	Preservative-treated wood-based products - Part 3: Plywood
AS/NZS 2269.0	Plywood - Structural - Specifications
NZS 3604	Timber-framed buildings

1.4 MANUFACTURER'S DOCUMENTS

Carter Holt Harvey Plywood Limited documents relating to work in this section are:

Ecoply® Specification and installation guide December 2023

Manufacturer/supplier contact details

Company:	Carter Holt Harvey Plywood Limited
Web:	chhply.co.nz
Email:	info@ecoply.co.nz
Telephone:	0800 326 759

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 NO SUBSTITUTIONS

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

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2 PRODUCTS

Materials

2.1 ECOPLY® STRUCTURAL (SQUARE EDGE) F8/F5 GRADE

Radiata pine veneer ply manufactured to AS/NZS 2269.0, face sanded, grade as scheduled and H3.2 CCA treated to AS/NZS 1604.3, if required.

Components

2.2 SCREWS IN TIMBER

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

2.3 ADHESIVE

Refer to SELECTIONS.

2.4 BRUSH ON TREATMENT

Soudal Metalex Ready to Use or Soudal Metalex Concentrated Timber Preservative. Clear or Green colour product.

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.

Ensure support framing is completed to Ecoply® Specification and Installation Guide stated requirements as a minimum. Always refer to the roofing and decking system supplier for installation, plywood selection and surface preparation requirements for specific roofing and decking products or to specific design requirement.

Ensure all Ecoply® square edge sheet edges and joints will be fully supported with framing width of minimum 45mm at each Ecoply® sheet joint.

Ensure moisture content is:

Timber:	16% maximum

Application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 FIXINGS

150mm centres along edges, minimum 7mm, maximum 15mm from the edge and, 300mm maximum centres on intermediate supports, or 200mm centres under membranes

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3.6 FIXING ECOPLY® PLYWOOD SHEETS

Fix sheets to Ecoply® Specification and Installation Guide (or specific design) stated 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 with a 3mm expansion gap for square edge sheets. Nail or screw fix to Ecoply® Specification and Installation Guide requirements unless specified differently.

3.7 UNDER MEMBRANE ROOFING

To NZBC E2/AS1, 8.5 Membrane roofs and decks. Screw and adhesive fix sheets with stainless steel screws for membrane type roofing to Ecoply® Specification and Installation Guide and membrane manufacturers' requirements. CD grade plywood with the C face up (or better). Provide a 5mm radius chamfer to external edges where the membrane is to be wrapped over. Fix internal corner fillets.

Provide whichever is the greater falls:

- as shown on the drawings
- to the membrane manufacturer's requirements
- minimum to NZBC E2/AS1, 8.5.1, - 1:30 for roofs, 1:40 for decks and 1:100 for gutters

3.8 TREAT

Treat cuts and holes in sheets with a brush on timber preservative treatment - Soudal Metalex Ready to Use or Soudal Metalex Concentrated Timber Preservative.

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 chhply.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

4.1 17MM ECOPLY® STRUCTURAL (SQUARE EDGE) PLYWOOD SUBSTRATE

Location:	New Link Roof
Manufacturer:	Carter Holt Harvey Plywood Ltd
Brand/grade:	Ecoply® Structural / CD
Stress grade:	F8/F5
Thickness:	17mm
Treatment:	H3.2 CCA
Fixings:	Screws stainless steel

4.2 SCREWS

Type/size/material:	10g x 50mm stainless steel screws required by NZBC E2/AS1 for membrane installations

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4422EF EQUUS SOPREMA FLAGON TPO ROOF & DECK MEMBRANE

1 GENERAL

This section relates to the supply and application of Equus SOPREMA Flagon TPO waterproofing membrane.

It includes:

- Single layer waterproofing membrane.
- All required components and accessories to complete the installation.

1.1 RELATED WORK

Refer to 4337E ECOPLY ROOFING & DECKING for plywood substrate

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:

PIR	Polyisocyanurate insulation board
TPO	Thermoplastic Polyolefin

Documents

1.3 DOCUMENTS

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

AS 2122.1	Combustion Propagation Characteristics of Plastics - Part 1: Determination of flame propagation following surface ignition of vertically oriented specimens of cellular plastics.
AS/NZS 1604.1	Preservative-treated wood-based products - Part 1: Products and treatment
AS/NZS 2269.0	Plywood - Structural - Specifications
NZS 3114	Specification for concrete surface finishes

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Equus Technical Data Sheets and Safety Data Sheets
Equus Soprema Flagon TPO Roofing Membranes Roof Maintenance Statement
Flagon TPO Accessory Catalogue
Flagon BBA Certificate 00-3750
BRANZ Appraisal 1157 - SOPREMA Flagon TPO Waterproofing Systems
BRANZ Appraisal 1169 - Equus SOPREMA Warm Roof System

Copies of the above literature are available from Equus Industries Limited

Web:	equus.nz
Email:	info@equus.co.nz
Telephone:	Northern Branch, Auckland: 09 415 4314 Central Branch, Wellington: 04 576 0333 Southern Branch, Christchurch: 03 353 2434

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material supplier warranty:

20 years	For Flagon TPO Waterproofing Membrane by SOPREMA and associated product.

- Provide this warranty on Equus Industries Ltd. standard form (if unavailable, use the standard form in the general section 1237WA WARRANTY AGREEMENT)

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- Include the appropriate Maintenance Statement and schedule.
- 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 Equus certified applicator warranty:

5 years	For Flagon TPO Waterproofing Membrane by SOPREMA when installed by an Equus approved installer.

- 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 installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Installers to be approved by Equus Industries Ltd. Refer to the general section 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

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

1.9 PRE-INSTALLATION MEETING

Convene a meeting between the applicator, contractor, all associated consultants and Equus Industries Ltd. where appropriate to ensure all parties know what is required for effective performance of the system.

1.10 SPECIAL DETAILS

Where a standard Equus SOPREMA Flagon TPO detail does not exist, or if a standard detail cannot be applied, an approved alternative must be obtained from Equus Industries Ltd before proceeding with the installation.

Performance

1.11 TESTING - FLOOD

Flood test horizontal applications with a minimum 50mm depth of water for 48 hours to Equus Industries Ltd. requirements. Repeat water test process after making any necessary repairs.

1.12 TESTING - ALTERNATIVE FORMS OF LEAK DETECTION

Contact Equus Industries Limited for appropriate methods of leak detection other than flood testing.

Compliance information

1.13 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Applicator approval certificate from the product supplier
- Product supplier warranty
- Applicator warranty (or combined with supplier's warranty)
- Producer Statement - Construction (PS3) from the approved applicator
- Other information required by the BCA in the Building Consent Approval documents.

Quality control and assurance

1.14 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:

Equus Soprema Flagon TPO Roofing membranes Roof Maintenance Statement.

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Provide this information prior to Practical Completion.

2 PRODUCTS

Materials - Membranes

2.1 FLAGON TPO WATERPROOFING MEMBRANE

Flagon EP/PR 1.5 TPOsynthetic membrane made of TPO modified polyolefin, reinforced with a polyester mesh. The upper sand grey layer offers weathering and UV resistance, the underlying black layer provides puncture resistance. The membrane is adhesive or mechanically fixed to various substrates. Supplied in 20m or 25m rolls 1.5mm thick x 2.1m wide.

Materials – Warm Roof

Components

2.2 MEMBRANE ADHESIVE - FLEXOCOL A89

FLEXCOL A89TPO solvent-free, moisture-curing, polyurethane adhesive, for application by brush, roller or notched trowel.

2.3 CLEANER - TPO MEMBRANE CLEANER

Proprietary cleaner to clean Flagon TPO Waterproofing Membrane prior to adhesive application.

2.4 TERMINATIONS - FLAGMETAL TERMINATION PROFILE

Preformed TPO-coated galvanized steel profile, available in 50mm x 20mm and 70mm x 20mm profiles, in 2m lengths. Refer to SELECTIONS.

2.5 TERMINATIONS - FLAGMETAL TERMINATION STRIP

Flat TPO-coated galvanized steel strip, 70mm wide, in 2m lengths.

2.6 PIPE FLASHINGS - TPO PIPE COLLARS

Proprietary pipe collars in sizes 80mm and 100mm compatible with Flagon TPO Waterproofing Membrane for flashing of pipe penetrations.

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 product.

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 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 in bringing the substrate to suitable condition.

3.4 PRE-INSTALLATION REQUIREMENTS - PLYWOOD

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

Plywood/ timber: Moisture content of 18% maximum.

3.5 WEATHER

Lay Flagon TPO Waterproofing Membrane in fair weather, with ambient air temperature no less than 5°C and no greater than 40°C

3.6 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

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Installation/Application

Application – Flagon TPO Waterproofing Membrane (non-fleece backed)

3.7 POSITION

Position Flagon TPO EP/PR 1.5mm TPO membrane over acceptable substrate and fold membrane back to expose half of the underside.

3.8 APPLY ADHESIVE – EQUUS TPO ADHESIVE

Apply Cantac Roof-Tac adhesive to the exposed underside of the membrane and to the corresponding substrate. Distribute adhesive uniformly to both sides using the spray kit.

3.9 INSTALL MEMBRANE SHEETS – FLAGON TPO EP/PR MEMBRANE

Apply Flagon TPO EP/PR 1.5mm TPO fleece backed membrane sheet to substrate and press uniformly with a 20kg + roller to Equus Industries Ltd. requirements. Ballast edges of membrane while adhesive cures.

3.10 LAP JOINTS

Install adjoining Flagon TPO EP/PR 1.5 TPO membrane sheets by overlapping edges a minimum of 50mm to provide for a minimum 30mm hot air weld in a fully adhered system.

Application – Flagon TPO Fleece Backed Waterproofing Membrane

3.11 POSITION

Position Flagon TPO EP/PV-F 1.5mm fleece backed membrane over acceptable substrate and fold membrane back to expose half of the underside.

Application – General

3.12 LAP PREPARATION - TPO CLEANER

Wipe lap surfaces clean and dry using TPO cleaner and clean/dry cotton cloth.

3.13 AUTOMATIC WELDING

Basic setting temperature and speed for automatic welding Flagon TPO Waterproofing Membrane is 380° - 470°C at 2m per minute.

3.14 HAND WELDING

Basic setting temperature for hand welding Flagon TPO Waterproofing Membrane is 300°C for 20mm nozzle and 350°C for 40mm nozzle

3.15 PENETRATIONS AND JUNCTIONS

Form and finish upstands, downturns, penetrations, sumps and vents in accordance with Equus Industries Ltd. requirements.

Finishing

3.16 FOOT TRAFFIC

Keep foot traffic to a minimum after laying the Flagon TPO Waterproofing Membrane. Lay protection at all traffic concentration areas, such as roof hatches, access doors, rooftop ladders, and walkways.

Completion & Commissioning

3.17 COMPLETION MATTERS

Refer to the general section 1270 CONSTRUCTION for completion requirements and if required, commissioning requirements.

3.18 COMPLETION - TESTS & CERTIFICATION

Refer to 1270 CONSTRUCTION for general test and certification requirements at completion.

4 SELECTIONS

For further details on selections go to https://equus.nz/

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4.1 FLAGON TPO MEMBRANE BY SOPREMA - SINGLE LAYER ON PLYWOOD

Location:	New Link Roof
Manufacturer:	SOPREMA
Distributor:	Equus
Substrate:	Plywood
Membrane:	Flagon EP/PR 1.5 TPO (non-fleece backed)
Colour:	Basalt Grey
Finish:	Smooth
Roll size:	2.1m wide x 20m
Membrane adhesive:	Equus TPO Adhesive (for non fleece-backed)

Components

4.2 ADHESIVE - MEMBRANE

Location:	New Link roof
Manufacturer:	SOPREMA
Distributor:	Equus
Type:	Flexocol A89

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4521NR ALTUS RESIDENTIAL ALUMINIUM WINDOWS & DOORS

1 GENERAL

This section relates to fabrication, supply and installation of Altus aluminium window and door systems and componentry for residential housing.

1.1 RELATED WORK

Refer to glazing section(s) for glass types

1.2 ABBREVIATIONS AND TERMS

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

The following abbreviations apply specifically to this section:

AAMA	American Architectural Manufacturer's Association
PQAS	Powder Coating Quality Assurance System
WGANZ	Window & Glass Association NZ

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
NZBC E2/VM1	Cladding systems of buildings up to 10 m in height – including junctions with windows, doors and other penetrations
NZBC F4/AS1	Safety from falling
NZBC F9/AS1	Means of restricting access to residential pools
NZBC H1/AS1-AS2	Energy efficiency
NZBC H1/VM1-VM2	Energy efficiency
AS/NZS 1580.108.1	Methods of test for paints and related materials - Determination of dry film thickness on metallic substrates - Non destructive methods
AS/NZS 1664.1	Aluminium structures - Limit state design
AS/NZS 1664.2	Aluminium structures - Allowable stress design
AS/NZS 1734	Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate
AS/NZS 1866	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
AS 3715	Metal finishing - Thermoset powder coatings for architectural applications
NZS 4211	Specification for performance of windows
BS EN 673	Glass in building - Determination of thermal transmittance (U-value) - Calculation method
AAMA 2603	Performance requirements and test procedures for pigmented organic coating on aluminium extrusions and panels
ISO 10077-1	Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - General
ISO 10077-2	Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Numerical method for frames
TT-S-001543A	Sealing compound, silicone rubber base (for caulking, sealing and glazing in buildings and other structures)
TT-S-00230C	Sealing compound, elastomeric type, single component (for caulking, sealing and glazing in buildings and other structures)
BRANZ BU 636	Protecting glass from damage
WGANZ	Window Installation Guide

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1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Altus product literature
Altus Windows & Doors Specifier's Guide
Altus BPIR documentation

Manufacturer/supplier contact details:

Company:	Altus Limited
Web:	www.altus.co.nz
Email:	technical@altus.co.nz
Telephone:	0800 397 263

Warranties

1.5 WARRANTY

Provide warranty for:

25/15 years:	For Dulux® Duratec® Intensity® powder coat finish for 25 years for durability and 15 years for chalk and colour fade

- 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 - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years:	For Altus aluminium windows, doors and 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.

1.7 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years:	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

1.8 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.9 NO SUBSTITUTIONS

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

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 be limited to:
Fully dimensioned elevations of all elements (minimum scale 1:20)

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Construction details (minimum scale 1:5) showing the interface between joinery elements and the building structure including:

- Jointing details and method of fixing between individual elements and between this installation and adjacent work
- Interaction between cladding and lining
- Flashing details
- Sealants and air seals
- Non-standard fixing details including bracketing
- Vertical and horizontal support members

If requested provide the following additional information:

- 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 of windows and doors
- Sealant types and full size sections of all sealants and backing rods
- Sequence of installation
- Provision for thermal movement
- Provision for seismic movement and movement under wind loads
- Glazing specification and details
- Producer Statement – Design (PS1) and design calculations
- Information of Professional Indemnity Insurance held by the person providing the calculations and shop drawings

Submit shop drawings for review to Architect

- 10 working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication.

1.11 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:
Care and Maintenance Guide - Anodised & Powder Coated Joinery
Care and Maintenance Guide - Aluminium Windows & Doors

Provide this information prior to practical completion.

Compliance information

1.12 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer / supplier warranty
- Installer / applicator warranty
- 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

1.13 POWDER COATING CERTIFICATION

Certify on request, powder coating compliance with this specification and support with control and sampling records. Test for film thickness to AS/NZS 1580.108.1.

Performance - windows and doors

1.14 PERFORMANCE - GENERAL

Deflection, operation, air permeability, lateral displacement, water penetration, ultimate and torsional strength performance and testing and labelling of windows and doors to comply with NZS 4211.

1.15 PERFORMANCE - THERMAL, HOUSING ONLY

Thermal performance of windows & doors to NZBC H1/AS1. The construction R-Value of windows & doors determined by Appendix E, Table E1.1.1 Construction R-values (R window) of selected generic windows and doors. Refer to SELECTIONS for construction R-values.

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1.16 PERFORMANCE - THERMAL

Thermal performance of windows & doors to NZBC H1/AS1-AS2 & NZBC H1/VM1-VM2. The construction R-value of windows & doors determined in accordance with Appendix E, E1 Vertical windows and doors:

- Determine the thermal transmittance of window & doors in accordance with ISO 10077-1.
- Determine the thermal transmittance of framing in accordance with ISO 10077-2.
- Determine the thermal transmittance of glazing using BS EN 673.

Refer to SELECTIONS for construction R-values.

1.17 DESIGN PARAMETERS - WIND

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

2 PRODUCTS

Materials - aluminium

2.1 ALUMINIUM EXTRUSIONS

Designation, chemical composition, mechanical testing and manufacturing tolerances to AS/NZS 1866 for aluminium and aluminium alloy used for extruded rod, bar, solid and hollow shapes.

2.2 ALUMINIUM SHEETS & PLATES

Designation, chemical composition, mechanical testing and manufacturing tolerances to AS/NZS 1734 for aluminium and aluminium alloy used for flat sheets, coiled sheets and plates.

2.3 ALUMINIUM STRUCTURES

Aluminium structures limited state design to AS/NZS 1664.1, allowable stress design to AS/NZS 1664.2.

Window/door systems

2.4 ALTUS ALUMINIUM WINDOW/DOOR SYSTEMS

Prefabricated and pre-finished window/door units made of aluminium frames with glazing, louvres, hardware/furniture and reveals readily installed and configured as per detailed shop and design drawings. Altus window and door systems can accommodate almost any combination of window and door types, such as fixed, awning, casement, sliding and bifold. Refer to SELECTIONS.

Components - window/door system

2.5 WINDOW/DOOR FRAMES

Aluminium window/door frames are powder coated or anodised to colour/texture of choice and come in various profiles with thermally broken and seismic frame options available (system dependent). Refer to SELECTIONS.

2.6 MULLIONS

Aluminium flat faced, external fin, internal box or split mullions. Refer to SELECTIONS.

2.7 HARDWARE AND FURNITURE

Stainless steel or aluminium window/door hardware and furniture such as hinges, catches, fasteners, latches, locks, operating gear, safety stays etc. Refer to SELECTIONS.

Components - reveal

2.8 TIMBER REVEALS

Pre-primed H3.1 Radiata Pine timber reveals, grooved for wall linings or flush finished for architraves, available in 19mm, 25mm and 30mm thickness. Refer to SELECTIONS.

2.9 ALUMINIUM REVEALS

Aluminium reveals fitted to frame via thermal break, anodised or powder coated to match joinery.

2.10 PVC REVEALS

19mm thick thermoplastic polyvinyl chloride (PVC) reveals grooved for wall linings.

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Components - sill

2.11 SILL SUPPORT BAR

Extruded aluminium angled or flat sill support bar with punched drainage and fixing holes complying with BRANZ Evaluation Method EM6, NZBC E2/VM1 tests and NZBC B2/AS1. Size suited to project specific cladding and to detailed drawings.

2.12 LOCATOR BLOCKS

85x60mm moulded polypropylene locator blocks.

Components - flashing

2.13 FLASHINGS

Extruded aluminium window, head and sill flashing to NZBC E2/AS1, 4.0 Flashings and suited to project specific application. Head flashing comes powder coated to match window/door joinery colour. Moulded polypropylene head and sill flashing end cap supplied for cavity installation.

Components - sealant

2.14 STRUCTURAL SEALANT

Single component silicone rubber base joint sealing compound formulated and tested or approved equivalent with not less than a ± 40% movement factor to US Federal Specification TT-S-001543A.

2.15 WEATHERING/INSTALLATION SEALANT

Single component, cold applied silicone rubber base joint sealing compound to US Federal Specification TT-S-001543A, or single component elastomeric type joint sealing compound of medium modulus (± 25% movement) to US Federal Specification TT-S-00230C.

2.16 BACKING PEF ROD

Compressible, cylindrical closed cell polyethylene foam rod. Size to suit application.

2.17 SELF-EXPANDING FOAM

Self-expanding aerosol polyurethane gun foam.

2.18 FOAM TAPE

Closed cell PVC foam tape. Hardness, grade, compression, UV weathering to NZBC E2/AS1, paragraph 9.1.9.9.

Components - fixings

2.19 FIXINGS - WINDOW/DOOR FRAME

Minimum fixing size and type to NZBC E2/AS1, 9.1.9 Windows and doors.

To timber:	75 x 3.15mm galvanized jolt head nails, or 8g x 65mm stainless steel screws
To steel:	8g x 65mm stainless steel screws
To concrete:	8g x 65mm stainless steel screws driven into nylon plugs or similar

2.20 FIXINGS - SILL SUPPORT

Minimum fixing size and type:

To timber/steel:	10g x 50mm stainless steel screws
To concrete:	10g x 50mm stainless steel screws driven into nylon plugs or similar

2.21 BRACKETS

Designed by window/door manufacturer to specific design.

Finishes - powder coating

2.22 COLOURSCAPE POWDER COAT FINISH

Thermosetting polyester powder in accordance with AS 3715, WGANZ and PQAS, formulated to meet AAMA 2603. Available in a range of colours with the option of a matt, gloss or satin finish. Refer to SELECTIONS.

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3 EXECUTION

Conditions - general

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

- Confirm all window/door keys are accounted for and delivered separately to the site manager
- Store windows and doors on site in a clean and dry environment in such a manner as to prevent damage to pre-finished surfaces
- Stack the units in a vertical position resting on their sills, with layers interleaved between to prevent rubbing

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 PROTECTIVE COVERING - WINDOWS/DOORS

Prevent marking of surfaces visible on completion and protect aluminium joinery from following trades with protective covering/coating, keep in place during fixing process, remove on completion. Refer to BRANZ BU 636.

Conditions - fabrication

3.4 FABRICATION - GENERAL

Confirm site measurements of openings prior to window/door fabrication. Fabricate and finish window/door units and components, and install glazing, louvres, hardware and furniture, operating gear, safety stays and reveals to detailed shop and design drawings, the specification and as scheduled. Punch drainage and fixing holes to sill supports complying with EM6, NZBC E2/VM1 tests and NZBC B2/AS1.

3.5 SAFETY STAYS - DOORS

Factory fit self-closing or self-latching device to doors where required by and to NZBC F9/AS1.

3.6 PROPRIETARY FRAME BLOCKS

Factory fit proprietary frame blocks as required for direct fixed wall cladding to block up windows/door off sill tray flashings.

3.7 FLASHINGS

Window, head and sill flashing material, profile and dimensions to NZBC E2/AS1, 4.0 Flashings and suited to project specific cladding, framing and floor, and compatible with window frame materials and fixings.

Conditions - on site

3.8 PRE-INSTALLATION REQUIREMENTS

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

- Openings are prepared for window/door installation and have wall underlay dressed into opening, corner soakers installed and flashing tape applied
- Waterproof sealant is applied to concrete/masonry window and door sills, and for door sills a membrane is installed over sealant
- Window/door units have glazing, hardware and furniture, operating gear, safety stays/restrictors and reveals installed to and are finished as per detailed shop and design drawings and the specification

Installation/application - general

3.9 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

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3.10 INSTALLATION/APPLICATION REQUIREMENTS

Ensure that all installers/applicators are familiar with the required substrate conditions and the manufacturer's or supplier's specified preparation, fixing and finishing techniques. Install/apply products in accordance with manufacturer's or supplier's technical literature, detailed shop and design drawings and to NZBC E2/AS1 and WGANZ Window Installation Guide.

3.11 CORROSION PROTECTION

Install/apply barriers of bituminous coatings, stops or underlays between dissimilar metals in contact and where aluminium is in contact with concrete/masonry.

3.12 SEALING REQUIREMENTS

To sealant manufacturer's requirements and instructions:

- Ensure joints are dry and remove loose material, dust and grease
- Prepare joints as required with solvents and primers recommended
- Mask off adjoining surfaces
- Apply back-up materials to depth no less than the minimum required
- Tool off sealant to form a smooth fillet with required profile and dimensions
- Remove excess sealant using cleaning materials recommended

Preparation for fixing to concrete/masonry

3.13 INSTALL NYLON PLUGS

Drill fixing holes in concrete/masonry to suit nylon plug size and location of sill support and reveal fixings. Fill fixing holes with silicone sealant and install plugs into hole until flush with concrete surface.

Installation - sill supports (cavity construction)

3.14 INSTALL ANGLED SILL SUPPORT BAR

Prior to installing support bar place a locator block at each end of bar. Install bar on exterior wall face centred below opening sill with locator blocks seated on sill trimmer. The upper edge of the bar to be minimum 5mm above sill trimmer. Confirm the bar is level and in true alignment, fix to framing/concrete/masonry.

3.15 INSTALL FLAT SILL SUPPORT BAR

Install sill support bar centred to opening sill onto floor surface as per design drawings. Confirm the bar is level and in true alignment and fix vertically to floor.

Installation - window/door units

3.16 PLACE WINDOW/DOOR UNIT

Prior to placing window/door unit in opening, drill two rows of pilot holes along window/door reveal, place holes 150mm from reveal ends and at maximum 450mm intervals as per NZBC E2/AS1, or to window/door manufacturer's specific requirements. Place window/door unit in opening complying with NZBC E2/AS1 and suited to project specific cladding, detailed shop and design drawings. Confirm correct exterior cladding cover, interior lining finish and placement of unit on sill support.

3.17 FIX WINDOW/DOOR UNIT

Insert flat packers between opening frame and reveal around fixing points. Confirm window/door unit is level and of true alignment and fix through reveal (not packers) to opening framing and floor. Remove packers from head.
For bifold windows/doors additionally fix at head with supplied brackets as per window/door manufacturer's instructions.

3.18 COMPLETE AIR SEAL

To comply with NZBC E2/AS1, 9.1.5 Air seals. Insert continuous backing PEF rod between opening frame and reveal at 10-20mm depth, apply self-expanding foam to manufacturer's instructions over PEF rod to fully fill gap. For windows/doors fixed directly to floor (no reveal) or seated in floor rebated apply sealant as per window/door manufacturer recommendations and detailed drawings.

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3.19 INSTALL HEAD FLASHING

Cut head flashing to required length and install, fix and seal to wall framing above window/door head as per detailed design drawings, NZBC E2/AS1 and suited to project specific cladding and wind zones.

Post-cladding weather sealing of windows/doors

3.20 WEATHER SEALING

Seal exterior window/door frame and flashings to cladding weathertight complying with NZBC E2/AS1 and suited to project specific cladding and detailed design drawings. Install/apply sealing products in accordance with manufacturer's or supplier's technical literature.

Completion

3.21 COMPLETION MATTERS

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

3.22 TRADE CLEAN

Trade clean window frames, operable windows and doors, glass and other related surfaces inside and out to remove marks, dust and dirt and to enable a visual inspection of all surfaces.

4 SELECTIONS

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

Performance

4.1 THERMAL PERFORMANCE - VERTICAL WINDOWS & DOORS

Window /Door Number:	Construction R-value:
DG.01 Main Entry	R0.42 min.
DG.02 Dirty Linen	N/A

Fabrication/supply/installation

4.2 NOMINATED MANUFACTURER

Nominated manufacturer(s):

Company: Nebulite®
Contact:
Email:
Telephone:

4.3 SUPPLY AND INSTALLATION

Supply and installation of window/door systems and componentry by one of the following options:

Supply: By manufacturer
Installation: By manufacturer

Window/door units - powder coated

4.4 ALTUS TASMAN35 ALUMINIUM FRAME SYSTEM

Location: DG.02 Dirty Linen
Brand/type: Altus Tasman35®
Frame: Flat face
Finish: ColourScape® Powder Coating
Powder coat: Dulux® Duratec® Flaxpod Matt
Colour: Refer Exterior Finishes Schedul
DFT: Average of 80 microns with a minimum of 50 microns
Reveal: 19mm timber reveal

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4.5 ALTUS PACIFIC52 ALUMINIUM FRAME THERMAL SYSTEM

Location:	DG.01 Main Entry
Brand:	Altus Pacific52
Type:	Thermal window/door system
Frame:	Flat face
Mullion:	
Finish:	ColourScape® Powder Coating
Powder coat:	Dulux® Duratec® Flaxpod Matt
Colour:	Refer Exterior Finishes Schedule
DFT:	Average of 80 microns with a minimum of 50 microns
Reveal:	19mm timber reveal

Components - window/door unit

4.6 HINGED DOOR GLAZED PANEL

Unit No:	DG.01
Location:	Main Entry
Glazing:	Double Glazed Refer to glazing section(s) for glass types

Components - Stellar Doors

4.7 HINGED ENTRANCE DOOR - ALUMINIUM FACE

Unit No:	DG.02
Location:	Dirty Linen
Brand:	Stellar DOORS®
Type:	Hinged aluminium panel entrance door
Profile:	41mm deep
Style:	
Frame:	
Finish:	ColourScape® Powder Coating
Powder coat:	Dulux Duratec
Colour:	Flaxpod Matt
DFT:	Average of 80 microns with a minimum of 50 microns

Components - hardware/furniture

4.8 HARDWARE AND FURNITURE

Brand:	Type:	Location:	Operation:	Finish:	Colour:
Aria	Hinged door handle	D01, D03	Key-turn	Powdercoated	Black

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4611ME METRO PERFORMANCE GLASS EXTERIOR GLAZING

1 GENERAL

This section relates to the supply and fixing of **Metro Performance Glass** products for external joinery in complex residential and commercial buildings, including:

- window and doors

1.1 RELATED WORK

Refer to 4521NR ALTUS RESIDENTIAL ALUMINIUM WINDOWS & DOORS for aluminium door and sidelight

Refer to 4612MI METRO PERFORMANCE GLASS INTERIOR GLAZING for mirrors

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:

PVB	Polyvinyl Butyral
EVA	Ethylene Vinyl Acetate
IGU	Insulating Glass Unit
LSG	Laminated Safety Glass
TSG	Toughened Safety Glass
TLSG	Toughened Laminated Safety Glass
MFG	Metro Frameless Glass

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 B2/AS1	Durability provisions for building elements
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 C/VM2	Framework for fire safety design
NZBC F4/AS1	Safety from falling
NZBC F9/AS1	Means of restricting access to residential pools
NZBC H1/AS1-AS2	Energy Efficiency
NZBC H1/VM1-VM2	Energy Efficiency
AS/NZS 2208	Safety glazing materials in buildings
NZS 3604	Timber-framed buildings
NZS 4211	Specification for performance of windows
NZS 4223.1	Glazing in buildings - Glass selection and glazing
NZS 4223.Supp1	Glazing in buildings - Supplement 1 to NZS 4223.1:2008 and NZS 4223.4:2008
NZS 4223.2	Glazing in buildings - Insulating glass units
NZS 4223.3	Glazing in buildings - Human impact safety requirements
NZS 4223.4	Glazing in buildings - Wind, dead, snow and live action
AS/NZS 4666	Insulating glass units
BRANZ BU 636	Protecting Glass From Damage

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Refer website www.metroglasstech.co.nz

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Manufacturer/supplier contact details

Company:	**Metro Performance Glass**
Web:	www.metroglasstech.co.nz
Email:	technical@metroglass.co.nz
Telephone:	0800 545 800

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years:	for insulating glass units
10 years:	for laminated safety glass
10 years:	for toughened safety glass
10 years:	for screen printed glass

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of completion of this part of the contract work.

Refer to the general section for the required form of 1237WA WARRANTY AGREEMENT and details of when completed warranty must be submitted.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be approved / accredited / registered / licensed / certified by manufacturer / supplier. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

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.

1.9 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicators approval certificate from the manufacturer / importer / distributor
- Manufacturer / supplier warranty
- Installer / applicator warranty
- 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.

Performance – Wind (design by contractor)

1.10 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.

Performance - General

1.11 SPREAD OF FIRE FOR CLADDING

To NZBC C/AS1, 5.3 External cladding systems, NZBC C/AS2, 5.5 External cladding systems, or NZBC C/VM2.

1.12 THERMAL STRESS ANALYSIS

For non-heat treated glass obtain a thermal stress analysis for spandrel panels, tinted, reflective, Low E and other solar control vision glass including IGU's for review before placing final order.

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1.13 ENERGY EFFICIENCY

Provide glazing to comply with H1 Energy efficiency requirements of NZBC H1/AS1-AS2 and NZBC H1/VM1-VM2.

2 PRODUCTS

2.1 NO SUBSTITUTIONS

Substitutions are not permitted to any specified **Metro Performance Glass**, products or systems.

Materials

2.2 INSULATING GLASS UNITS (IGU)

IGUs shall be GlassTech IGUs and comply with AS/NZS 4666, NZS 4223.2 and the Insulating Glass Unit Manufacturers Association (IGUMA) requirements.

Marking to NZS 4223.2 as modified by NZBC B2/AS1, 3.4.3 Insulating glass units.

Components, aluminium glazing

2.3 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.

2.4 SETTING BLOCKS

Santoprene/Neoprene/Silicone, 80-90 Shore A hardness, set at quarter points or to detail, to support the weight of glass panes. Use with bead glazing and for IGUs.

3 EXECUTION

Conditions

3.1 GENERAL REQUIREMENTS

To NZS 4223.1, NZS 4223.2, NZS 4223.3 as modified by NZBC B1/AS1, 7.3.1 and NZS 4223.4. All external glazing to be wind and watertight on completion.

3.2 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

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 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 GLASS CONDITION

All glass to have undamaged edges and surfaces in accordance with AS/NZS 4667.

3.5 GLASS THICKNESS

If not specifically stated in the glazing schedule determine the minimum thickness of glass for each pane as required by NZS 4223.1, NZS 4223.3 and NZS 4223.4 and NZS 4223.

Determine the final glass thickness based on project specific wind loading, human impact and any other considerations that govern.

3.6 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.

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Conditions - human impact safety requirements

3.7 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.

3.8 SAFETY GLAZING MATERIAL

Use only safety glazing materials defined in NZS 4223.3 as modified by NZBC B1/AS1, 7.3.1, that also comply with the relevant requirements of AS/NZS 2208. Ensure material is permanently marked.

3.9 CONTAINMENT

Edge cover to comply with NZS 4223.1, Section 4 Glazing, table 5. Otherwise to NZS 4223.3, 2.3 Edge cover. IGUs to comply with AS/NZS 4666.

Assembly

3.10 WORKING OF GLASS

All working of glass as required in NZS 4223.1.

3.11 EDGE WORK AND BEVELLING

All edges shall be clean cut unless specified in SELECTIONS or as shown on drawings.

3.12 SURFACE TREATMENT

Refer to SELECTIONS/drawings for finish.

3.13 SURFACE CUTTING

Refer to SELECTIONS/drawings for finish.

Application - aluminium

3.14 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, Partly Framed Glass Assemblies.

3.15 INSTALL SAFETY GLASS

To NZS 4223.3.

Finishing

3.16 SAFETY

Indicate the presence of transparent glass for the construction period with tape or signs compatible with the glass type.

3.17 MANIFESTATIONS

To NZS 4223.3, 2.2 Manifestation (making glass visible).

Completion

3.18 COMPLETION MATTERS

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

3.19 TRADE CLEAN

Remove safety indicators and trade clean at completion of the building, as required by the contract documents.

3.20 REPLACE

Replace damaged, cracked or marked glass that occurs during glazing.

3.21 REMOVE

Remove debris, unused materials and elements from the site.

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4 SELECTIONS

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

Performance

Glass by type

4.1 METRO PEROFMRANCE GLASS - INSULATING GLASS UNITS (IGU)

Location:	Reception D01
Brand/type:	GlassTech
Outer glass type:	Clear Toughened - to match existing
Inner glass type:	Clear Toughened - to match existing
Coated surface:	-
Spacer width:	To suit frame
Spacer gas:	Argon

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4612MI METRO PERFORMANCE GLASS INTERIOR GLAZING

1 GENERAL

This section relates to the supply and fixing of Metro Performance Glass products for interior spaces including:

- mirrors and mirror frames

1.1 RELATED WORK

Refer to 4611ME METRO PERFORMANCE GLASS EXTERIOR GLAZING for glazing to aluminium door and sidelight

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:

PVB	Polyvinyl Butyral
EVA	Ethylene Vinyl Acetate
IGU	Insulating Glass Unit
LSG	Laminated Safety Glass
TSG	Toughened Safety Glass
TLSG	Toughened Laminated Safety Glass
MFG	Metro Frameless Glass

Documents

1.3 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 C/VM2	Framework for fire safety design
NZBC F4/AS1	Safety from falling
NZBC F9/AS1	Restricting access to residential pools
AS/NZS 1170.2	Structural design actions - Part 2: Wind actions
AS/NZS 2208	Safety glazing materials in buildings
NZS 3604	Timber-framed buildings
NZS 4211	Specification for performance of windows
NZS 4223.1	Glazing in buildings - Glass selection and glazing
NZS 4223 Supp 1	Code of practice for glazing in buildings - Supplement 1 to NZS 4223.1:2008 and NZS 4223.4:2008
NZS 4223.2	Glazing in buildings - Insulating glass units
NZS 4223.3	Glazing in buildings - Human impact safety requirements
NZS 4223.4	Glazing in buildings - Wind, dead, snow and live action
AS/NZS 4666	Insulating glass units
BRANZ BU 636	Protecting Glass From Damage
BPS	Building Product Specifications

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

www.metroglass.co.nz

Copies of the above literature are available at

Company:	**Metro Performance Glass**
Web:	www.metroglass.co.nz

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Email: technical@metroglass.co.nz
Telephone: 0800 545 800

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years:	For insulating glass units
10 years:	For laminated safety glass
10 years:	For toughened safety glass
10 years:	For screen printed glass

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of completion of this part of the contract work.

Refer to the general section for the required form of 1237WA WARRANTY AGREEMENT and details of when completed warranty must be submitted.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be approved / accredited / registered / licensed / certified by manufacturer / supplier. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

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.

1.9 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicators approval certificate from the manufacturer / importer / distributor
- Manufacturer / supplier warranty
- Installer / applicator warranty
- 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.

Performance – Wind (design by contractor)

1.10 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.

Performance - General

1.11 SPREAD OF FIRE FOR CLADDING

To NZBC C/AS1, 5.3 External cladding systems, NZBC C/AS2, 5.5 External cladding systems, or NZBC C/VM2.



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2 PRODUCTS

2.1 NO SUBSTITUTIONS

Substitutions are not permitted to any specified **Metro Performance Glass**, products or systems.

Materials

2.2 CLEAR FLOAT GLASS

Clear ordinary annealed transparent float glass for general window glazing. Thickness as required by NZS 4223 1 and NZS 4223.3.

2.3 LAMINATED GLASS

Grade A Laminated Safety Glass to AS/NZS 2208 with PVB or EVA interlayer.

2.4 TOUGHENED GLASS

TempaFloat Grade A Toughened Safety Glass to AS/NZS 2208.

Heat soaked toughened glass to NZS 4223.1, Appendix E, required for critical areas.

Materials, mirrors

2.5 MIRROR GLASS

Clear annealed mirror float glass, including silver, activation, passivation and two protective coats.

2.6 GLASS SCREENS

Proprietary shower/bath screens, and doors shall be TempaFloat TSG complete with MFG hardware.

Components, general

2.7 JOINTING, PUTTY AND SEALING MATERIALS

Ensure jointing, putty and sealing materials are compatible with glass substrates. Confirm compatibility with laminated glass, IGUs and coatings.

Components, mirrors

2.8 GLASS ADHESIVE

Adhesive mirror-mastic and double-sided adhesive tape.

3 EXECUTION

Conditions

3.1 GENERAL REQUIREMENTS

To NZS 4223.1, NZS 4223.2, NZS 4223.3 as modified by BPS paragraph 4.4.1.4, and NZS 4223.4. All external glazing to be wind and watertight on completion.

3.2 DELIVERY

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

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, and AS/NZS 4666 for IGUs.

3.3 GLASS CONDITION

All glass to have undamaged edges and surfaces in accordance with AS/NZS 4667.

3.4 GLASS THICKNESS

If not specifically stated in the glazing schedule determine the minimum thickness of glass for each pane as required by NZS 4223.1, NZS 4223.3, NZS 4223.4.

Determine the final glass thickness based on specific wind loading, human impact and any other considerations that govern.

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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 as modified by BPS paragraph 4.4.1.4, for thickness and maximum areas of panel 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.

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. For IGU's comply with AS/NZS 4666.

Assembly

3.9 WORKING OF GLASS

All working of glass as required in NZS 4223.1.

3.10 EDGE WORK AND BEVELLING

All edges shall be clean cut unless specified in SELECTIONS or as shown on drawings.

3.11 SURFACE TREATMENT

Refer to SELECTIONS/drawings for finish.

3.12 SURFACE CUTTING

Refer to SELECTIONS/drawings for finish.

Application - wall mounted glass (mirrors and splashbacks)

3.13 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

3.14 SAFETY

Indicate the presence of transparent glass for 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.

3.15 MANIFESTATIONS

To NZS 4223.3, 2.2 Manifestation (making glass visible).

Completion

3.16 COMPLETION MATTERS

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

3.17 TRADE CLEAN

Remove safety indicators and trade clean at completion of the building.

3.18 REPLACE

Replace damaged, cracked or marked glass damaged during glazing.

3.19 REMOVE

Remove debris, unused materials and elements from the site.

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4 SELECTIONS

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

Mirrors

4.1 METRO PERFORMANCE GLASS - MIRROR

Location:	Accessible WC and Powder Station
Brand/type:	Standard
Dimensions:	Refer drawings
Thickness:	4 mm
Fixing method:	Adhesive
Edgework:	Smooth arris

4711E EXPOL UNDERFLOOR INSULATION

1 GENERAL

This section relates to the supply and installation of Expol insulation foam panels fitted as underfloor thermal insulation to suspended timber framed floors.

It includes:

- EPS underfloor insulation panels
- Components and accessories to complete installation

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:

CA	Closed abutted
EPS	Expanded polystyrene
IC	Insulation contact
IC-F	Insulation contact - Fire rated

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 H1/AS1-AS2	Energy efficiency
AS 1366.3	Rigid cellular plastic sheets for thermal insulation - Rigid cellular polystyrene - Moulded (RC/PS - M)
AS/NZS 3000	Electrical installations (Known as the Australian/New Zealand Wiring Rules)
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential buildings
AS/NZS 4859.1	Thermal insulation materials for buildings - General criteria and technical provisions

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Expol UnderFloor Insulation brochure
Expol Technical Product Guide
BRANZ Appraisal 256 (2026) - EXPOL Underfloor Insulation

Copies of the above literature are available from:

Web:	www.expol.co.nz
Email:	tech@expol.co.nz
Telephone:	09 634 3449 / 0800 863373
Facsimile:	09 634 0756

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

50 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 purchase (check with the manufacturer/supplier).

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Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

Compliance Information

1.6 COMPLIANCE - BRANZ APPRAISAL

EXPOL Underfloor Insulation has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 256.

Performance

1.7 DURABILITY

Expol EPS insulation to comply with NZBC B2/AS1, Table C.1.1.1, Durability requirements of nominated building elements.

50 years	For Expol UnderFloor thermal insulation panels

Refer to the Manufacturer's literature for additional requirements.

2 PRODUCTS

Materials

2.1 EXPOL BLACK UNDERFLOOR INSULATION

Expol black rigid EPS foam panel with pre-cut concertina cuts to both edges. Manufactured from flame retardant beads with added graphite to AS 1366.3 and AS/NZS 4859.1. Available in a range of thicknesses and sizes. Refer to SELECTIONS.

Components

2.2 EXPOL WIRE GUARD

Expol Wire Guard, a waxed paper strip used to separate exposed electrical cables from Expol underlloor insulation.

2.3 NAILS

60mm galvanized nails

2.4 EXPOL Z CLIPS

Expol proprietary no nail, push fit, non corrosive nylon clips for retrofit installations to existing timber floors.

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.

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3.4 PROTECT

Do not subject the polystyrene to prolonged saturation or exposure to sunlight. Do not allow the polystyrene to come into contact with solvents.

Installation - generally

3.5 INSTALL INSULATION - GENERAL

Lay, install, fit and fix insulation without gaps and over compaction to NZBC H1/AS1 or AS2 and insulation manufacturer's requirements. For all housing and buildings up to 300m², install in accordance to NZS 4246.

Installation

3.6 INSTALL PANELS TO NEW TIMBER FLOOR - NAILS

Drive 60mm galvanized nails halfway into timber joists, with two nails per insulation panel, positioned diagonally in opposite corners on opposite floor joists, 200mm from the panel end and 60mm from the top of the joists. Trim edges of panel when oversize by cutting one or more of the concertina edges. Place panels on the nails flush with the top of the joists.

3.7 INSTALL PANELS TO EXISTING TIMBER FLOOR - EXPOL Z CLIPS

Friction fit Expol underfloor insulation panels between floor joists with the top face touching the underside of the floor. Place two Z clips per insulation panel, positioned diagonally in opposite corners, 200mm from the panel end. Push Z clips up on the sides between the floor joists and insulation panel to hold it in place.

3.8 ELECTRICAL CABLES

Separate all electrical cables from Expol UnderFloor insulation using Expol Wire Guard, applied to the joist area to separate the cables from polystyrene. Take extreme caution when working around electrical cables.

CAUTION: Electrical cables and equipment partially or completely surrounded with bulk thermal insulation may overheat and fail. For cables installed prior to 1989 ensure all insulation is fitted leaving the cables exposed. When fitting around recessed downlights / uplights or other electrical appliances, leave a 150mm clearance around the appliance and comply with AS/NZS 3000.

3.9 PIPES AND PLUMBING

Cut the panel and notch around difficult areas to accommodate obstacles. A polyurethane foam material may be used to seal off more difficult areas. Ensure all air gaps are sealed around the outside perimeter to retain maximum insulation.

Completion

3.10 COMPLETION MATTERS

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

4 SELECTIONS

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

Materials

4.1 EXPOL R1.8 BLACK UNDERFLOOR INSULATION

Location:	New Link Floor
Brand:	Expol Black
Size:	1200mm x 360mm (Confirm spacing of existing deck joists)
Thickness:	60mm
Compressive resistance at 10%:	105kPa
R value:	1.8
Fixing method:	To be confirmed onsite

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Components

4.2 WIRE GUARD

Type/Brand: Expol Wire Guard

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4711EW EARTHWOOL® GLASSWOOL THERMAL INSULATION

1 GENERAL

This section relates to the supply and installation of Earthwool® glasswool thermal insulation. It includes:

- ceiling insulation
- wall insulation

1.1 RELATED WORK

Refer to 4711E EXPOL UNDERFLOOR INSULATION for underfloor insulation

Refer to 4711KS KINGSPAN KOOLTHERM PITCHED ROOF SOFFIT & FRAMING for Kingspan insulation behind windows to Block 6

1.2 ABBREVIATIONS AND DEFINITIONS

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

Documents

1.3 DOCUMENTS

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

NZBC H1/AS1-AS2	Energy efficiency
AS/NZS 3000	Electrical installations (Australian/New Zealand Wiring Rules)
AS/NZS 4859.1	Thermal insulation materials for buildings - General criteria and technical provisions
AS/NZS 60695.11.5	Fire hazard testing - Test flames - Needle-flame test method - Apparatus, conformity test arrangement and guidance
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential buildings
CodeMark™ CMNZ30095 verC	Knauf Insulation

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.

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Earthwool® glasswool Insulation Technical Data Sheets
Earthwool® glasswool Insulation Material Safety Data Sheets
Earthwool® glasswool Insulation Installation Instructions
BRANZ Appraisal 648 (2022) - Knauf glasswool Insulation
Eurofins Gold Certificate for Indoor Air Comfort: IACG-323-01-25-2022
Certifire Certificate: AC100.2
ISO 9001 Certificate Registration No. 44 100 190742

Manufacturer/supplier contact details

Company:	Knauf Insulation Limited
Web:	www.knauf.com/en-NZ/knauf-insulation
Email (Technical):	tech.nz@knaufinsulation.com
Email (Sales):	sales.nz@knaufinsulation.com
Telephone:	0800 KNAUFi (562 834)

Warranties

1.5 WARRANTY

Provide a warranty for:

50 years	For unfaced Earthwool® glasswool insulation materials
15 years	For Earthwool® glasswool insulation underfloor

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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.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

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

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to experience, skill, and qualifications.

1.8 NO SUBSTITUTIONS

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

Performance - fire properties

1.9 FIRE PROPERTIES

Earthwool® glasswool insulation is deemed non-combustible in accordance with AS 1530.1 and non-combustible to test criteria under the 30's Needle Flame Test to AS/NZS 60695.11.5.

Compliance

1.10 CODEMARK CERTIFICATE

Earthwool® glasswool insulation meets the requirements of the NZBC when used in accordance with the conditions and limitations of its Certificate of Conformity CMNZ30095.

2 PRODUCTS

2.1 WALL INSULATION SEGMENTS

Earthwool® glasswool insulation: Wall, non-combustible and certified Red List Free glasswool insulation segments to AS/NZS 4859.1, manufactured using up to 80% recycled glass with DriTherm® silicone treatment, ECOSE® Technology plant-based binder and TwinTech® smooth finish on both faces. Available in a range of segment sizes, thicknesses and R-values. Refer to SELECTIONS.

2.2 CEILING & SKILLION ROOF INSULATION SEGMENTS

Earthwool® glasswool insulation: Ceiling, non-combustible and certified Red List Free glasswool insulation segments to AS/NZS 4859.1, manufactured using up to 80% recycled glass with DriTherm® silicone treatment, ECOSE® Technology plant-based binder and TwinTech® smooth finish on both faces. Available in ceiling and skillion roof variations in a range of segment sizes, thicknesses and R-values. Refer to SELECTIONS.

2.3 MULTI-USE INSULATION ROLLS

Knauf Insulation: Multi-use Roll, non-combustible and certified Red List Free glasswool insulation rolls to AS/NZS 4859.1, manufactured using up to 80% recycled glass with DriTherm® silicone treatment, ECOSE® Technology plant-based binder and TwinTech® smooth finish on both faces. Available in rolls 90mm thick x 430mm and 580mm wide x 8.5m long with R-value of 2.6.

Accessories

2.4 PLASTIC STRAPPING TAPE

Proprietary plastic strapping tape.

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2.5 WIRE NETTING

Refer to 4161 UNDERLAYS, FOIL AND DPC for wire netting used to support the insulation.

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 use damaged or wet insulation material.

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 - generally

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALLATION GENERALLY

Lay, install, fit and fix insulation without gaps, tucks, folds and over compaction to NZBC H1/AS1 or AS2 and Earthwool glasswool Installation Instructions. For all housing and buildings up to 300m², 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. 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.

3.6 RECESSED LIGHT FITTING CLEARANCES - NON-RESIDENTIAL

Non-residential recessed light fittings to AS/NZS 3000, 4.5.2.3.5;

- Existing fittings or retrofit situations, fittings maybe unmarked
- New fittings can only be labelled - CA 80, CA 90, CA 135, IC, IC-F, IC-4, NON-IC or Do-not Cover

Refer to clause INSULATION CLEARANCES GENERALLY for clearances.

3.7 INSULATION CLEARANCES - GENERAL

Insulation may need to have a gap to some mechanical and electrical services and equipment, including ducts and chimneys. The gaps should be to the NZS 4246 based tables below or to the equipment manufacturer requirements if they require larger gaps. Smaller gaps to manufacturer requirements can be used for equipment specifically manufactured with heat shielding or similar (excludes light fittings). Installed gap not to be more than 50mm bigger than the required gap.

The following tables are subject to:

- The requirements of NZS 4246.
- The insulation is exposed to the source of heat or equipment etc.
- Insulation, has passed the needle flame test to AS/NZS 60695.11.5 and/or is non-combustible.
- Gaps to hot surfaces may have to be increased with non-compliant insulation and plastic/polymeric type insulation (EPS, XPS, PIR, etc), check with insulation manufacturer.
- Gaps to hot surfaces may be able to be reduced with non-combustible insulation, check with equipment manufacturer.
- "Secure insulation" if required means, glue, mechanical fix, or provide fixed barriers at gap edge of insulation to hold in place. Rigid or semi rigid insulation may only need a firm friction fit (secure loose pieces).

LIGHT FITTINGS

Type of fitting		Comments

	Minimum insulation clearance	
Recessed, marked NON-IC, or unmarked	100mm(increase if over 100W)	NON-IC fittings and new or old unmarked & unknown fittings, and/or insulation. Secure insulation.
Recessed, CA 80, CA 90 or CA 135	Abut fittings	Do NOT cover the fittings.
Recessed, IC, IC-F or IC-4	Abut & cover fittings	Ensure insulation complies
Recessed, marked Do-Not-Cover	Manufacturers clearances	Do not cover the fittings
Independent control gear	Place on top of insulation and 50mm from fitting	If not on top allow 50mm clearance to insulation, do not cover. Includes, transformers, ballasts & drivers etc.
Surface fittings not exposed to insulation	Nil	Where surface fittings are isolated from insulation by appropriate linings. Excludes high heat fittings.
Surface fittings & exposed insulation	200mm	This is exposed insulation to any part of the exposed fitting & bulb/tube (e.g. exposed light in an unlined basement). Secure insulation.

FOR MINIMUM INSULATION CLEARANCES TO INBUILT RECESSED HOT APPLIANCES - REFER TO NZS 4246

INSULATION CLEARANCES FROM EXTRACTS, VENTS, PIPES & ROOF UNDERLAY

Application	Minimum insulation clearance	Comments
Ducted fan motors	50mm	Includes ducted rangehoods, extractors etc. Applies to the motor unit and electrical enclosures (not the ducts).
Ducted fan ducts	Abut	Excludes motor unit and electrical enclosures.
Unducted fan motors usually discharging to ceiling space	200mm	Includes unducted, rangehoods, extractors etc, discharging into roof space. To prevent debris falling into motor. Clearance may be able to be reduced, by providing a fixed barrier around the vent.
Passive vents (still in use)	200mm	To prevent debris falling through. Clearance may be able to be reduced, with more cohesive insulation, like some of the rigid plastic types or providing a fixed barrier around the vent.
Plumbing penetrations through floors	100mm	Keep gap between pipe penetration and floor insulation in case of leaks.
Roofing material/underlay	25mm	From underside of roofing or flexible roofing underlay, to prevent wicking.

3.8 LAY WIRE NETTING - UNDER JOISTS / PURLINS

Lay at right angles across the rafters/roof joists (under purlins). Pull tight and fix.

3.9 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.

3.10 CUTTING INSULATION

Cut insulation using a sharp craft knife.

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Installation - Wall Framing

3.11 FIT WALL INSULATION - TIMBER WALL FRAMING

Measure distance between studs and cut Earthwool® glasswool insulation segments/rolls minimum 10mm wider and friction fit between framing members with front face of insulation flush with framing. Leave no gaps and maintain full thickness of insulation over whole installation. If cavity depth is greater than the insulation nominal thickness, fix or strap the insulation to secure. Cut insulation pieces as required to fill small spaces, behind outlet boxes, gaps around penetrations and other obstructions. Without compressing, tuck insulation behind wiring, plumbing or ductwork.

Installation - Ceiling

3.12 FIT INSULATION BETWEEN CEILING FRAMING

Friction fit Earthwool® glasswool insulation segments/rolls between ceiling framing members, leaving no gaps and maintaining full thickness of insulation over whole installation. R7.0 & R8.0 Ceiling batts are designed to expand over truss chords / ceiling joists without the need for notching of batts. Cut insulation pieces as required to fill small spaces, gaps around penetrations and other obstructions. Without compressing, tuck insulation behind wiring, plumbing or ductwork.

3.13 FIT INSULATION OVER CEILING FRAMING

Loose lay Earthwool® glasswool insulation rolls over the ceiling framing and between truss chords, leaving no gaps and maintaining full thickness of insulation over whole installation. Cut insulation pieces as required to fill small spaces, gaps around penetrations and other obstructions. Without compressing, tuck insulation behind wiring, plumbing or ductwork.

Completion & Commissioning

3.14 COMPLETION MATTERS

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

Earthwool® glasswool insulation packaging is recyclable.

4 SELECTIONS

For further details on selections go to www.knauf.com/en-NZ/knauf-insulation
Substitutions are not permitted to the following, unless stated otherwise.

Materials

4.1 R2.8 EARTHWOOL® GLASSWOOL THERMAL WALL INSULATION

Location:	New Exterior Link Walls
Brand:	Earthwool® glasswool insulation
Product:	Soundshield Plus
R-value:	R2.8
Thickness:	90mm
Size:	430mm x 1160mm
Density:	30.7kg/m³

4.2 R3.4 EARTHWOOL® GLASSWOOL THERMAL CEILING INSULATION - SINGLE LAYER

Location:	New ceilings within Amenities Block
Brand:	Earthwool® glasswool insulation
Application:	Between ceiling framing
Product:	Ceiling segments
R-value:	R3.4
Thickness:	110mm
Size:	580mm x 1160mm
Density:	30.7kg/m³

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4711KS KINGSPAN KOOLTHERM® PITCHED ROOF SOFFIT & FRAMING BOARDS

1 GENERAL

This section relates to the supply and installation of **Kingspan** Kooltherm® products providing thermal insulation behind wall lining & framed walls, and continuous external insulation.
It includes:

- Kooltherm® K12 Framing Board
- and associated componentry necessary to complete the installation.

1.1 RELATED WORK

Refer to 4711EW EARTHWOOL GLASSWOOL THERMAL INSULATION for wall and ceiling insulation generally

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 C/AS2	Protection from fire for buildings other than risk group SH
NZBC H1/AS1-AS2	Energy efficiency
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential buildings
AS/NZS 4859.1	Thermal insulation materials for buildings - General criteria and technical provisions
ISO 9001	Quality management systems - Requirements
BS EN ISO 9001:2008	Quality management systems - Requirements
AS ISO 9705	Fire tests - Full scale room test for surface products
CodeMark™ CM20099 ver4	Kooltherm K12 Framing Board

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Kooltherm® K12 Framing Board Product Data Sheet (Oct 2025)

Kooltherm® K12 Framing Board Installation Guide (Apr 2025)

Manufacturer/supplier contact details

Company:	Kingspan Insulation NZ Ltd
Web:	www.kingspaninsulation.co.nz
Email:	technical@kingspaninsulation.co.nz
Telephone:	0800 806 595

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For Kooltherm® 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.

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Requirements

1.5 QUALIFICATIONS

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

1.6 NO SUBSTITUTIONS

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

Compliance information

1.7 COMPLIANCE - CODEMARK CERTIFICATE

Kooltherm® K12 Framing Board meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CM20099.

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer / supplier warranty
- Producer Statement - Construction from the applicator / installer
- Other information required by the BCA in the Building Consent Approval documents.

2 PRODUCTS

Materials

2.1 KOOLTHERM K12 FRAMING BOARDS

Kingspan Kooltherm® K12 Framing Board is a thin insulation solution, fibre-free rigid thermoset phenolic insulation, faced on both sides with a low emissivity composite foil autoadhesively bonded to the insulation, manufactured under quality control systems approved to BS EN ISO 9001:2008. Complies with AS/NZS 4859.1. Supplied in a 2400mm x 1200mm board and available in a range of thicknesses and R-values. Refer to SELECTIONS for options.

Components

2.2 FASTENERS

Fasteners to suit the application and in accordance with Kooltherm® Installation Guides.

2.3 JOINT TAPE - K12 FRAMING BOARDS

Self-adhering construction grade tape to suit the application to Kingspan Kooltherm® K12 Framing Board joints, such as Kingspan AIR-CELL Insulation Tape, Thermakraft Premium Joining Tape, Thermakraft Thermaflash Flashing Tape or similar.

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.

Installation - generally

3.2 INSTALL INSULATION - GENERAL

Lay, install, fit and fix insulation without gaps, tucks, folds and over compaction to NZBC H1/AS1 or AS2 and Kooltherm® Installation Guides. For all housing and buildings up to 300m², 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.

3.3 INSULATION BOARD - CUTTING

Cut Kooltherm® board by using a fine toothed saw or by scoring with a sharp knife, snapping the board over a straight edge and then cutting the facing on the other side. Ensure joints are close-butted to maintain continuity of insulation.

3.4 PENETRATIONS

Where services such as pipes, plumbing, wiring and the like penetrate through boards cut holes in Kooltherm® boards and notch around penetration without gaps or undesirable compression at edges. Seal penetration to the sealants manufacturer requirements.

3.5 ELECTRICAL WIRING

Take caution when working around electrical wiring. Fit Kooltherm® boards behind or in front of electrical wiring without gaps or undesirable compression at edges. Where required recess the back of boards to accommodate electrical wiring, leave excess insulation to minimise thermal weaknesses.

3.6 CHECK FOILS

Ensure foils are dry, clean, bright, undamaged and free of debris before being covered.

3.7 CHECK WALL AND ROOF UNDERLAYS

Ensure these are dry, clean, undamaged and free of debris before being covered.

3.8 CHECK VAPOUR BARRIERS

Ensure these form one homogeneous sheet vapour barrier and remain as such throughout the ensuing construction process.

Installation - Kooltherm® K12 Framing Boards

3.9 INSTALL INSULATION - OVER STEEL/TIMBER STUDS

Install framing boards to external surface of frame structure ensuring vertical board joints coincide with vertical members. Ensure boards are lightly butted for continuity of insulation. Use large headed galvanized clout nails or screws as temporary fixings prior to the secondary support batten being fitted.

Sealing of insulation board joints and exposed edges

3.10 SEAL BOARD JOINTS AND EXPOSED EDGES

Where specified (refer to SELECTIONS) seal insulation board joints and edges with tape. Clean insulation boards from dust and contaminates with a dry cloth. Apply tape to manufacturers requirements centred over board joints and exposed edges removing liner 300mm - 600mm at a time and firmly pressing down without stretching or pulling tape. Secure tape by firmly wiping from centre out using a plastic squeegee. Cut tape using knife or scissors.

Completion

3.11 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.

3.12 PROTECT

Protect new work from damage.

4 SELECTIONS

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

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Materials

4.1 KINGSPAN KOOLTHERM K12 FRAMING BOARDS

Location:	Block 6 Existing Window Infills
Manufacturer:	Kingspan Insulation NZ Ltd
Brand/type:	Kooltherm® K12 Framing Board
Board size:	2400mm x 1200mm
Thickness:	60
Product R-value:	2.8
Joint taping:	Required

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4924 STAINLESS STEEL METALWORK

1 GENERAL

This section relates to the fabrication and installation of stainless steel items used in exterior applications.
It includes:

- stainless steel decorative and specialised finishes

1.1 RELATED WORK

Refer to

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 1554.6	Structural steel welding - Welding stainless steel for structural purposes
ASTM A240	Standard specification for chromium and chromium-nickel stainless steel plate, sheet and strip for pressure vessels and for general applications
ASTM A276	Standard specification for stainless steel bars and shapes
ASTM A480	Standard specification for general requirements for flat-rolled stainless steel and heat-resisting steel plate, sheet and strip
ASTM A1016	Standard specification for general requirements for ferritic alloy steel, austenitic alloy steel, and stainless steel tubes
BS EN 1011-3	Welding. Recommendations for welding of metallic materials. Arc welding of stainless steels
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

1.3 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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

2 PRODUCTS

Fabricated items

2.1 ITEMS

Refer to SELECTIONS.

Materials

2.2 STAINLESS STEEL SHEET - DECORATIVE AND SPECIALISED FINISHES

To ASTM A240.

Alloy containing iron, low carbon, and typically, 18% chromium and 8% nickel.
Refer to SELECTIONS for details.

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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.

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 or will not provide the required finish.

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 FLASHINGS

Form to BRANZ BU 567. Ensure the location and the substrate is ready to receive the fabrication and will allow work of the required standard.

3.5 SURFACE TREATMENT OF STAINLESS STEEL

Ensure stainless steel items commissioned for service are free from oil, scale, grinding dust or small particles of steel from tools, dies or rollers. On no account should welding slag or other contamination to be removed with a mild steel brush - a stainless steel brush should only be used.

Fabrication general

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 arrises which would be visible after fixing, or a hazard to the user.

3.12 AFTER CUTTING STAINLESS STEEL

Grind off materials liable to corrode after thermal cutting.

3.13 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.

3.14 RIVETED JOINTS

Draw riveted joints tightly together, with rivets closed to completely fill holes.

3.15 MECHANICAL JOINTS

Ensure mechanical joints are tight with no visible gaps.

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3.16 MECHANICAL JOINTS - ELEMENTS

Bed in mastic all mechanical joints of elements which will be located externally, including all mating surfaces, cleats and other fixings.

3.17 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.

Fabrication - welding

3.18 WELDING OF STAINLESS STEEL

Weld stainless steel to BS EN 1011-3 and for structural steel to AS/NZS 1554.6.

3.19 PREPARATION FOR WELDING

Remove grease, dirt, moisture and oxide from edges to be welded. Remove scale and residue from arc and power cutting by machining or hand grinding.

3.20 ACCURACY

Ensure accurate fit using clamps and jigs where practical. Use tack welds for temporary attachment where jigging is not practical.

3.21 WELDS

Make joints with parent and weld metal fully fused throughout with no inclusions, holes, porosity or cracks.

3.22 WELDING STAINLESS STEEL

Use double level butt welds, backing bars to remove heat, jigging, tack welds and any other measures necessary to minimise distortion. Remove slight distortion by light hammering, taking care not to damage the surface finish.

3.23 SPATTER

Prevent weld spatter falling on surfaces of materials which will be self finished and visible in completed work.

3.24 RESIDUES

Ensure complete removal of flux residues and slag.

3.25 BUTT WELDS

Grind butt welds which will be visible in completed work smooth and flush with adjacent surfaces.

Fabrication - sheet products

3.26 FABRICATE SHEET PRODUCTS

Fabricate and assemble in a workshop wherever practicable.

3.27 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.

3.28 CUT SHEETS

Cut sheets by mechanical methods leaving edges true to line, square, smooth and free from all burrs.

3.29 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).

3.30 PRE-ASSEMBLE

Pre-assemble in the workshop and match mark elements being assembled or erected on site. Do not strain, twist, bend or open such elements to force them into the correct position while assembling or erecting.

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3.31 SEPARATION

Isolate dissimilar materials (metal and non-metal) in close proximity by painting the surfaces or fitting separator strips. Refer also to BRANZ BU 567.

3.32 JOINING STAINLESS STEEL SHEET PRODUCTS

Use self-secured seams, stainless steel rivets, Monel-metal rivets, bolts, self-tapping screws and welding as best suits the form and location of the work.

Installation - fabricated items

3.33 INSTALL FABRICATED ITEMS

Install fabricated items in accordance with the manufacturer's requirements. Fix plumb, level and true to line. Fix to comply with the reviewed shop drawings and installation details, including brackets, bolts, fixings, bedding compounds and sealants.

Installation - sheet products

3.34 INSTALL SHEET PRODUCTS

Locate fixings accurately and use in accordance with the manufacturer's requirements. Fix plumb, level and true to line. Fix to comply with the installation details and complete with brackets, bolts, fixings, bedding compounds and sealants.

3.35 SUPPORT

Fully support elements unless designed to be self-supporting.

3.36 EARTHING OR EQUIPOTENTIAL BONDING METALWORK

If it is a project electrical requirement, ensure that any electrically at-risk metalwork, is earthed or equipotential bonded (or at least conductor cable attached) before enclosure.

Completion

3.37 COMPLETION MATTERS

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

3.38 ROUTINE CLEANING

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

3.39 DEFECTIVE OR DAMAGED WORK

Repair damaged or marked elements. Replace damaged or marked elements where repair is not possible or will not be acceptable. Adjust operation of equipment and moving parts not working correctly. Leave work to the standard required for following procedures.

4 SELECTIONS

Fabricated items

4.1 WAKEFIELD METALS KLEUR STAINLESS SATIN ROSE TI + AFP DYN4-005-AFP

Location/item:	Reception Pod/Powder Station Toekick & Negative Detail
Supplier:	Wakefield Metals
Brand/type:	Kleur Stainless
Profile:	Sheet
Grade:	304
Thickness:	1.2mm
Finish:	Satin Titanium Coated, Anti-Fingerprint

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4933 ALUMINIUM METALWORK

1 GENERAL

This section relates to the fabrication and installation of aluminium items of a general nature.

Related work

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.

1.2 MANUFACTURER DOCUMENTS

Manufacturer and supplier documents relating to work in this section are:

Vulcan Aluminium

Copies of the above literature are available from

Company:	Vulcan Aluminium
Web:	vulcan.co.nz
Telephone:	0800 920 622

Requirements

1.3 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

Metalworkers to be experienced in working with aluminium and the techniques specified.

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 RIVETS

Domed with similar composition and mechanical properties to the parent metal.

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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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 PREPARATION

Ensure location and substrate is ready to receive the elements and will allow work of the required standard.

3.4 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

3.5 PROTECTION

During fabrication protect all surfaces which will be visible in completed work.

3.6 COLD FORMED

Ensure cold formed work is free from warping, buckling and fractures. Form bends with a brake press or by cold rolling.

3.7 CORNERS

Unless specified otherwise, mitre junctions of identical sections.

3.8 HOLES

Form without distortion of surrounding metal.

3.9 MOVING PARTS

When assembled, all moving parts must move freely and without binding.

3.10 CLEANING

Remove all burrs and sharp arrises which would be visible after fixing, or a hazard to the user.

3.11 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.

3.12 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 MECHANICAL JOINTS - ELEMENTS

Bed in mastic all mechanical joints of elements which will be located externally, including all mating surfaces, cleats and other fixings.

3.15 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.

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Application

3.16 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.

3.17 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

3.18 FABRICATE

Fabricate and assemble in a workshop wherever practicable.

3.19 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.

3.20 CUT SHEETS

Cut sheets by mechanical methods leaving edges true to line, square, smooth and free from all burrs.

3.21 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).

3.22 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.

3.23 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.

3.24 JOINING ALUMINIUM SHEET

Use self-secured seams, aluminium pop rivets, bolts and welding as best suits the form and location of the work.

3.25 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.

3.26 LOADING

Ensure all elements are fully supported unless designed to be self-supporting.

Finishing

3.27 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.

3.28 EARTHING OR EQUIPOTENTIAL BONDING METALWORK

If it is a project electrical requirement, ensure that any electrically at-risk metalwork, is earthed or equipotential bonded (or at least conductor cable attached) before enclosure.

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Completion

3.29 COMPLETION MATTERS

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

4 SELECTIONS

4.1 EQUAL ANGLE ALUMINIUM SECTION - UA1107

Location:	Existing Window Frame Infill
Alloy designation:	Refer manufacturer/supplier
Temper:	Refer manufacturer/supplier
Dimensions:	40mm x 3mm
Finish:	Powder coat - Refer Interior Finishes Schedule

4.2 2MM ALUMINIUM SHEET

Location:	Existing Window Frame Infill
Alloy designation:	Refer manufacturer/supplier
Temper:	Refer manufacturer/supplier
Thickness:	2mm
Finish:	Powder coat to one face - Refer Interior Finishes Schedule

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5111H JAMES HARDIE® FIBRE CEMENT SHEET LININGS

1 GENERAL

This section relates to the supply and installation of **James Hardie®** Villaboard™ Lining for:

- internal wall linings behind tiles

1.1 RELATED WORK

Refer to 6211AW ARDEX WALL TILING for wall tiling

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 C/AS2	Protection from fire for buildings other than risk group SH
AS/NZS 2589	Gypsum linings - Application and finishing
AS/NZS 2908.2	Cellulose-cement products - Flat sheet
NZS 3602	Timber and wood-based products for use in buildings

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

James Hardie® documents relating to this part of the work:

Villaboard™ Lining
Hardie™ Groove Lining
Fire and Acoustic Design Manual by James Hardie, May 2025
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 James Hardie® Villaboard™ Lining (refer to James Hardie® product warranty)
15 years:	For accessories supplied by James Hardie® (refer to James Hardie® product warranty)
From:	Date of purchase

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 NO SUBSTITUTIONS

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

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 COMPLIANCE

Fibre cement sheets to AS/NZS 2908.2.

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Performance

1.8 SURFACE FIRE PROPERTIES

Group Number to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes. Unfinished fibre cement board has a group number of 1-S when complying with parameters of BPS, Table 8.5.2.1: Material Group Numbers for some substrate and coating combinations.

2 PRODUCTS

Materials

2.1 PLAIN FIBRE CEMENT SHEET LININGS

James Hardie® Villaboard™ Lining manufactured from treated cellulose fibre, portland cement, sand and water. Cured by high pressure autoclaving and manufactured to AS/NZS 2908.2. Sealed on the face.

Components

2.2 BATTENS, TIMBER

Minimum 45mm wide, 35mm deep timber with depth suitable for length of fasteners used.

2.3 PACKERS

3 - 4mm timber packers.

2.4 NAILS

6mm and 9mm linings:	40mm x 2.8mm galvanized flathead Hardie™ Flex nails
Over Gypsum plasterboard:	50mm x 2.8mm galvanized flathead Hardie™ Flex nails

2.5 SCREWS FOR POWER SCREW GUN DRIVING

Timber framing

6mm and 9mm linings:	Villadrive 6 gauge x 30mm self embedding screws or Hardie™ Drive self embedding stainless steel screws
Steel framing:	Steel 8 gauge x 32mm self embedding screws

2.6 WALL BOARD ADHESIVE

Polyurethane wallboard adhesive. Refer to James Hardie® product installation manual.

Accessories

2.7 CONTROL JOINTS SECTION

45mm x 10mm shaped PVC control joint or Rondo P35 jointer.

2.8 EXTERNAL CORNER SECTIONS

30mm x 30mm x 1.2mm PVC angle.

2.9 POLYETHYLENE TAPE

Self adhesive polyethylene for behind expressed joints and expressed control joints.

2.10 JOINT REINFORCING TAPE

52mm wide perforated paper tape.

2.11 BEDDING COMPOUND

Hardie™ Base Coat compound powder.

2.12 FINISHING COMPOUND

Hardie™ Top Coat premixed.

2.13 SEALANT

Silicone or polyurethane sealant. Refer to the James Hardie® installation manual.

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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.

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 MOISTURE CONTENT

Maximum moisture content of timber framing to NZS 3602.

3.4 PROTECT

Protect joinery, fittings and finishes already in place from water staining or damage from lining installation.

3.5 BUILDING

Ensure building is weatherproof before lining work commences.

3.6 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.

3.7 HANDLING

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

3.8 SUBSTRATE

Do not commence work until the substrate is of the standard required by the relevant manufacturer's technical literature for the specified finish; plumb, level and in true alignment. Maximum moisture content of timber framing to NZS 3602.

Application

3.9 FIXING IN CERAMIC TILED AREAS

Prepare and fix sheets, horizontally or vertically and stagger joints where possible, to James Hardie® installation manual.

3.10 PROVIDE VERTICAL CONTROL JOINTS

Provide vertical control joints at 7.2 metre centres maximum for general application and 4.2 metres centres maximum for tiled applications. Provide acoustic sealant in walls having an acoustic rating.

3.11 PROVIDE HORIZONTAL CONTROL JOINTS

Provide horizontal control joints at 7.2 metres centres maximum for general application and 4.2 metre centres maximum for tiled applications.

3.12 PROVIDE EXTERNAL CORNER ANGLE

Provide perforated PVC external corner angle or paper faced rigid spine corner mould to external corners.

3.13 INTERNAL CORNERS

When used in tiling applications provide a Lumberlock Stud saver to framed internal corner prior to fixing of Villaboard™ Lining.

Provide perforated PVC corner mould, or paper faced rigid spine corner mould or solid blocking to internal corners.

3.14 FORMING HOLES

Required holes accurately formed and cut to James Hardie® requirements.

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3.15 SILICONE JOINTS

Provide polyethylene tape behind joints finished with flexible sealant.

Levels of Finish

Refer to AS/NZS 2589.
Refer to SELECTIONS/drawings for required levels of finish.

3.16 LEVEL 0, 1 and 2 FINISHES

Refer to James Hardie® installation manual.

3.17 LEVEL 3 FINISH

Application:	For use in areas which are to receive heavy or medium texture (spray or hand applied) finishes or where heavy paper wall coverings are to be applied as the final decoration.
Jointing/setting:	Joints and corner joints will be set with Hardie™ Base Coat reinforced with perforated paper tape and Hardie™ Top Coat.
Finish:	This level of finish must be sufficiently smooth to accept vinyl, tiles or textured coatings without blemishes.

3.18 LEVEL 4 FINISH

Application:	This is generally the accepted level of finish for domestic construction. It is used where light textures or wall coverings and smooth textured finishes and satin/flat/low sheen paints are illuminated by non-critical lighting.
Jointing/setting:	Refer to flush jointing recommendations on page 11 James Hardie® Villaboard™ Lining installation manual.
Finish:	For use where light-texture coatings or wallpaper or other lightweight wall coverings are to be applied. For painted finishes in non-critical lighting areas flat and low-sheen textured paints are to be applied. Gloss and semi-gloss paints are not generally suitable over this level of finish as any minor blemish will show under critical light. The weight, texture and sheen level or wall coverings applied over this level of finish must be carefully evaluated. Joints and fasteners must be adequately concealed if the wallcovering material is lightweight, contains limited pattern, has a gloss finish, or any combination of these features is present. Unbacked vinyl wall coverings are not suitable over this level of finish.

3.19 LEVEL 5 FINISH

Application:	This level of finish is for use where gloss or semi-gloss paints are specified or where critical lighting conditions occur on satin, flat or low sheet paints.
Jointing/setting:	Typically all joints and corner joints will have tape embedded in Hardie™ Base Coat applied over all joints, angles, fastener heads and accessories. A thin skim coat of Hardie™ Top Coat must be applied to the entire surface to be plastered. The surface must be finished smooth and free of tool marks and ridges and special care must be taken with the application of the finishing compound to achieve a smooth, true surface suitable for these critical finishes.
Finish:	This level of finish is for use where gloss, semi-gloss, low-sheen or non-textured paints are specified or where critical lighting conditions occur.

Joint Finishing

3.20 JOINT FINISHING FOR TILED AREAS

Joints and corner joints set with Hardie™ Base Coat reinforced with perforated paper tape to achieve a level 3 finish.

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Completion & Commissioning

3.21 COMPLETION MATTERS

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

4 SELECTIONS

Linings

4.1 9 MM JAMES HARDIE® VILLABOARD™ LINING

Location:	Steam Room walls generally Behind tiles in Saunas
Type:	James Hardie® Villaboard™ Lining
Thickness:	9 mm
Fixing method:	Screws

4.2 FIXING CERAMIC TILED AREAS

Location:	Generally
Fasteners:	Villadrive 6 gauge x 30mm self embedding screw

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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
- wet area systems

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

Manufacturer/supplier contact details

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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.

Compliance

1.7 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

1.8 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 Aqualine® wet area plasterboard

Components

2.2 CEILING BATTENS

GIB® Rondo® metal ceiling battens, batten joiners and perimeter channel.

2.3 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

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Refer to GIB® requirements for appropriate details.

2.4 TAPE ON TRIMS AND EDGES

GIB® Goldline™ tape-on trims

GIB® UltraFlex® high impact corner mould
GIB® Levelline® Tape on Trim

2.5 METAL ANGLE TRIMS

GIB® galvanized steel slim angle trims.

2.6 CONTROL JOINTS

GIB® Rondo® P35 control joints.

GIB® Goldline™ tape-on trims
GIB® plastic W-profile control joints.

Accessories

2.7 ADHESIVE

Timber frame and/or steel frame:

GIBFix® One ultra low VOC water based wallboard adhesive
GIBFix® All-Bond solvent based wallboard adhesive

2.8 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

2.9 JOINTING TAPE

GIB® jointing tape.

2.10 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 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 LEVELS OF PLASTERBOARD FINISH

Provide the selected plasterboard surfaces to the pre decorative levels of finish specified in AS/NZS 2589.

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

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(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.

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 WET AREA SYSTEMS

Form to GIB Aqualine® Wet Area Systems requirements.

3.12 FORM CONTROL JOINTS

Form control joints to GIB® Site Guide requirements.

3.13 INSTALL TAPE-ON TRIMS

Install to GIB® Goldline™ Tape-on trims literature and/or GIB® Ultraflex high impact corner mould literature.

Finishing

3.14 FINISHING GENERALLY

To GIB® Site Guide and AS/NZS 2589.

Completion & Commissioning

3.15 COMPLETION MATTERS

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

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4 SELECTIONS

Plasterboard

4.1 10MM GIB® STANDARD SYSTEMS WALLS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
New Exterior Link Walls	GIB® Standard plasterboard	10mm	Level 4 Generally with Level 5 where feature lighting is required

4.2 13MM GIB® STANDARD SYSTEMS WALLS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Substrate to RCS Microstone Plaster	GIB® Standard plasterboard	13mm	Level 4

4.3 13 MM GIB® WATER RESISTANT SYSTEMS WALLS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
New Walls within Amenities Block	GIB Aqualine® plasterboard	13 mm	

4.4 13MM GIB® STANDARD SYSTEMS CEILINGS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
New Ceiling within Link	GIB® Standard plasterboard	13mm	Level 4

4.5 13MM GIB® WATER RESISTANT SYSTEMS CEILINGS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
New Ceilings within Amenities	GIB Aqualine® plasterboard	13mm	Level 4

Accessories

4.6 GIB® RONDO® CEILING BATTENS

Location: As required
Brand/type: GIB® Rondo® Ceiling battens
Batten type: Gib Rondo GR 310 CF
Clip type: 226 Clip

4.7 GIB® TAPE ON EDGE OR CORNER TRIMS

Brand/type: Gib Metal Trims

4.8 GIB® EDGE PROFILES

Brand/type:

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5122 PLYWOOD LININGS

1 GENERAL

This section relates to the use of plywood sheets for:

- interior lining

1.1 RELATED SECTIONS

Refer to 5433E ECOPLY FLOORING for plywood flooring

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 REFERRED TO

Documents referred to in this section are:

NZBC B1/AS1	Structural provisions for buildings
AS/NZS 2269.0	Plywood - Structural - Specifications
AS/NZS 2270	Plywood and blockboard for interior use
NZS 3604	Timber-framed buildings

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.

2 PRODUCTS

Materials

2.1 PLYWOOD LINING

To AS/NZS 2270. Refer to SELECTIONS for type.

Components

2.2 PANEL PINS

Refer to the plywood manufacturer's requirements and use 30mm, 40mm and 50mm plated panel pins for interior linings.

2.3 NAILS

Refer to the panel manufacturer's requirements. Galvanized or stainless steel for H3 CCA treated sheets. Use annular grooved or twisted shank nails for roof sarking.

2.4 SCREWS

Refer to the manufacturer's requirements for size and use.

Accessories

2.5 ADHESIVE

Use only multi-purpose water or solvent based wallboard adhesives required by the plywood manufacturer.

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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.

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 FRAMING

To NZS 3604 and the plywood manufacturer's requirements.

Maximum moisture content:	12 %.

Application - General

3.4 SUPPORT

Fully support all edges and joints, except where tongue and groove is used.

3.5 EXPANSION

Allow a 2-3mm gap at edges of linings for sheet expansion; and

2 - 3mm	at each sheet joint; or
6 - 9mm	at 3.6 metres; or
8 - 12mm	every 4.8 metres

In areas with an expected high level of internal moisture, allow a gap of 4 - 6mm every 1.2 metres.

Application - linings

3.6 FIXING GENERALLY

A combination of panel pins and glueing.

3.7 FIT AND FIX PLYWOOD SHEETS

Fit and fix as detailed to the plywood manufacturer's requirements with sheets and trim in plumb, true alignment, face and grain.

Completion & Commissioning

3.8 COMPLETION MATTERS

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

4 SELECTIONS

4.1 7MM NON-STRUCTURAL PLYWOOD LINING SUBSTRATE

Location:	New Link Exterior Walls to align with existing adjacent
Brand/type:	Ecoply
Thickness:	7 mm
Treatment:	Nil
End/edge profile:	Square Edge
Face/back grade:	C / C
Finish:	Lined with GFib Board

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5124 TIMBER BOARD LININGS

1 GENERAL

This section relates to the supply and fixing of tongue and grooved narrow boards as lining, nailed, secret nailed or adhesive fixed.

1.1 RELATED SECTIONS

Refer to

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 REFERRED TO

Documents referred to in this section are:

NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings

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.

2 PRODUCTS

Materials

2.1 LINING BOARDS

In long lengths tongue and groove profile as detailed or selected with species and grade to the requirements of NZS 3602.

Moisture content: 12 - 14% at fixing.

2.2 BEADS

To profiles as detailed.

Moisture content: 12 - 14% at fixing.

2.3 DAMP-PROOF COURSE

Heavy kraft strip laminates saturated and coated with bitumen.

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 SUBSTRATE

Before starting fixing ensure that the substrate conforms to NZS 3604 and that the relative humidity is suitable to receive lining.

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3.4 MOISTURE CONTENT, CONCRETE

Before starting fixing ensure that the concrete moisture content is less than 5%.

3.5 MOISTURE CONTENT, LINING

Immediately before starting fixing, test the moisture content of the lining to ensure the moisture content is acceptable. Use an electrical moisture meter to the board manufacturer's requirements, testing 5% of not less than 10 boards in the centre of the length. Do not commence laying if 90% of values obtained are not within the range specified.

3.6 DO NOT START

Do not start cutting down and fitting and fixing linings before the building is enclosed and external moisture excluded from the area.

Application

3.7 FIX LININGS

Fix lining strips to studs/rafters in pattern as detailed in straight parallel lines with tongues tightly fitted into grooves. Slightly undercut end joints square, fully supported, fitted tight and random staggered across adjacent boards. Allow for movement at all corners. Select board lengths to give a minimum number of end joints. Fit beads to areas to be lined as detailed.

3.8 SAND LININGS

Sand linings with a machine sander to the standard required for the finish specified.

Completion & Commissioning

3.9 COMPLETION MATTERS

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

4 SELECTIONS

4.1 WOOD VENEER HUB FLUTTO OAK SLAT FLEXIBLE TAMBOUR WOOD PANELS. STAINED RESENE WOODSMAN CEDAR NATURAL WOOD OIL MOUNT ASPIRING WITH TWO PACK CLEAR LACQUER

Location:	Reception
Supplier:	The Wood Veneer Hub
Profile:	Slat
Colour:	Oak
Finish:	Resene Woodsman Cedar Wood Oil Mt Aspiring with 3 x coats Resene Aquaclear Satin
Dimensions:	600mm x 2800mm x 12mm thick

4.2 ADHESIVE

Panel adhesive manufacturer:	WVH™ | White | Wood Panelling Adhesive

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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.
It includes:

- metal

1.1 RELATED WORK

Refer to

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 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

1.4 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 METAL TRIM

Refer to SELECTIONS for type.

Components

2.2 SCREWS, STEEL

Bright steel of a length to penetrate the substrate up to the shank. Use stainless steel in wet areas.

2.3 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 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.

Completion

3.6 LEAVE

Leave the whole of this work free of blemishes, undamaged and to the standard of finish required for following procedures.

3.7 PROTECTION

Protect the completed work and make good before any surface finish is applied.

3.8 REPLACE

Replace damaged or marked elements.

3.9 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

4.1 ASL 746 40 MM NEGATIVE DETAIL SKIRTING. MILL FINISH

Location:	New Walls
ASL System:	InStep Trims Aluminium Joinery System
Type:	ASL 746 40 mm negative detail single
Finish:	Mill

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5181RC RCS ROCKCOTE INTERIOR PLASTER SYSTEM

1 GENERAL

This section relates to Resene Construction Systems interior coating of a plaster rendering system, applied by hand trowel over:

- Gypsum plasterboard

1.1 RELATED WORK

Refer to 5113G GIB PLASTERBOARD LININGS for gib board 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:

MPNZA	Master Painters New Zealand Association
MSDS	Material safety data sheets
RCS	Resene Construction Systems
VOC	Volatile Organic Compounds
MS	Modified silicon

The following definitions apply specifically to this section:

Background	The solid substrate to which the bond coat is applied

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
NZS 4210	Masonry construction: Materials & workmanship
WorkSafe:	Guidelines for the provision of facilities and general safety in the construction industry
MPNZA	Health and Safety Programme

Health and Safety at Work Act 2015

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:

- Resene Construction Systems Technical Data Sheets
- Resene Construction Systems Trade Spec™
- Resene Construction Systems Project Guide
- Resene Construction Systems Safety Data Sheets
- Resene Total Colour System

Materials and execution to Resene Construction Systems specification except where varied by this specification and supported by architectural detailing.

Manufacturer/supplier contact details

Company:	Resene Construction Systems
Web:	www.reseneconstruction.co.nz
Email:	help@reseneconstruction.co.nz
Telephone:	0800 50 70 40

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

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5 years: For materials by Resene Construction Systems

- Provide this warranty on the Resene Construction Systems 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.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years: For execution / workmanship - by Registered Plasterer

- Provide this warranty on the Resene Construction Systems 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

1.7 QUALIFICATIONS

Use only Rockcote Artisan Plasterers licensed to apply the Resene Construction Systems Render System.

1.8 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.

1.9 NO SUBSTITUTIONS

Substitutions are not permitted to any specified Resene Construction Systems components or associated product listed in this section.

1.10 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 description:	Submit one 300mm x 300mm sample of the selected finish texture and colour for review.
Sample type:	Portable sample for review
Number:	One
Location:	On site
Reviewer:	Architect
Time for review:	10 working days
Review criteria:	Appearance, Texture, Colour

1.11 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:

Provide Resene Construction Systems Maintenance Guide on request or before Practical Completion of the contract for issuing to the building owner.

1.12 HEALTH AND SAFETY

Refer to the requirements of the Health and Safety at Work Act 2015 updates and WorkSafe: Guidelines for the provision of facilities and general safety in the construction industry.

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If the elimination or isolation of potential hazards and risks is not possible then minimise hazards and risks in this work on site by using the proper equipment and techniques as required in the MPNZA Health and Safety Programme. Supply protective clothing and equipment as necessary. Inform employees and others on site of the hazards and risks, and put into place procedures for dealing with emergencies. Obtain from Resene Construction Systems the material safety data sheets (MSDS) for each product. Keep these sheets on site and comply with the required safety procedures. Confirm at the start of the project whether a Site Specific Safety Plan is to be provided by the Registered Plasterer prior to work starting.

Compliance information

1.13 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicator's approval certificate from the manufacturer / importer / distributor
- Manufacturer's / suppliers warranty
- Installer's / applicator's warranty
- 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.

Provide the Producer Statement compiled by the Registered Plasterer in the form as required by the Building Consent Authority.

Performance

1.14 SURFACE FIRE PROPERTIES FOR LININGS

Group Number to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes.

Refer to SELECTIONS.

1.15 DURABILITY

The Resene Construction Systems materials covered by this part of the specification meet the requirements of NZBC B2 and have been designed and manufactured to achieve a durability of 15 years.

1.16 PROTECTION OF NEW PLASTER

Confirm the protection systems to be applied to fresh plaster coats. Plastering not to begin until systems are confirmed by Resene Construction Systems.

1.17 INSPECTIONS

Allow to inspect the whole of the work at each stage. Determine a programme for inspections including notification when each part and stage of the work is ready for inspection prior to the work commencing. Permit representatives of Resene Construction Systems to inspect the work in progress and to take samples of their product from site.

2 PRODUCTS

Decorative Plaster Finishes - Natural / Artisan

2.1 ROCKCOTE EARTHEN CLAY PLASTER DÉCOR

Resene Construction Systems Earthen Clay, composed of fine white china clay, silica sands and natural binders, produces a fine finishing clay plaster containing marble dust as a natural alternative to painted walls. Unique affects can be created by adding material during application such as coffee beans, marble or quartz chips, shells, or clean, dry wheat, hemp, etc. Suitable for interior use over a range of substrates in coats between 2mm and 6mm. Colour can be tinted using the Resene Total Colour System.

2.2 ROCKCOTE MONORENDER

Polymer modified cement-based dry plaster mix.

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2.3 REINFORCING MESH

Resene Construction Systems Blue Mesh alkali-resistant 6mm x 5mm fibreglass woven mesh and sticky mesh 150mm wide.

2.4 ROCKCOTE MULTISTOP BEDDING

Polymer modified cement-based dry plaster mix.

2.5 RCS RESIN - SLURRY COAT

Multi-purpose resin supplied in 5kg and 20kg containers.

2.6 PLASTER SYSTEMS AAC ADHESIVE

Pre-blended, polymer-modified AAC adhesive.

2.7 ROCKCOTE MICROSTONE

Resene Construction Systems MicroStone is a fine-grained stone-like decorative plaster, with a natural textured appearance. Natural white colour can be tinted using the Resene Total Colour System. Refer to SELECTIONS.

2.8 RESENE QUICK DRY

Resene Quick Dry is a waterborne primer undercoat suitable for unstable substrates. It provides a durable base and can remain uncoated for extended periods. Available in 4L and 10L containers.

Accessories

2.9 SEALANT

BRANZ appraised modified silicon (MS) sealant.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE AND HANDLING

Keep plaster product dry in transit. Take delivery of plaster product dry and undamaged. Reject all damaged materials. Deliver all materials in original unopened packaging with labels intact. Provide dry storage on site, stack carefully, protect from mechanical damage. Keep bagged render off concrete surfaces.

3.2 PRE-APPLICATION REQUIREMENTS

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

Moisture content: 12% maximum

3.3 PLASTERING CONDITIONS

Carry out plastering to Resene Construction Systems specification under conditions which will not adversely affect the finished work.

3.4 PROTECT

Before application of plaster, apply masking film and tape to all joinery, pipes and all areas likely to be marked by the plaster. Use drop cloths to keep the working areas clean. Clean off droppings on finished work immediately.

3.5 SUBSTRATE

Do not commence work until openings and apertures have been cut, pipes, fixtures, fixing pads and plugs have been fixed and other preparations are complete. All defects in substrate must be rectified by the trades applicable prior to application of plaster coatings. Ensure backgrounds and adjoining surfaces are, after the preparation called for in this section, of the standard required byResene Construction Systems.

3.6 STANDARDS AND TOLERANCES

Comply with the tolerances laid down in NZS 4210Masonry construction: Materials & WorkmanshipTable 2.2.

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3.7 CONFIRM LAYOUT

Before commencing work confirm with the owner the layout and position of expansion joints and other visual detailing of the finished work.

Application - background

3.8 PREPARE SURFACE

Before plastering commences, eliminate surface contaminants, remove loose material, dust, debris, oils, greases, retarders, and paint from already painted surfaces. Leave the surface dust free and clean. Make good any defects in the background which may adversely affect the quality of the plaster coating.

3.9 IRREGULARITIES

Fill voids, hollows and honeycomb with a mix not stronger than the background nor weaker than the first coat.

Application - joints and junctions

3.10 MOVEMENT CONTROL JOINTS

Provide movement control joints in the plaster to coincide with movement joints in the background and/or junctions between dissimilar backgrounds in the same plane and/or where shown on the drawings and to Resene Construction Systems requirements. Ensure reinforcing mesh is not continuous across control joints. Exposed control joints to be reflected through final coatings from substrate. Confirm locations of control joints in writing to the owner before work commences.

Application - general

3.11 PRE-PLASTER PREPARATION

Control suction by dampening with water if necessary, but without over-wetting. Allow the surface to dry-back to a surface-dry condition before plastering.

3.12 CURING

Confirm the curing and protection systems to be applied to fresh plaster coats. Plastering not to begin until systems are confirmed by Resene Construction Systems.

Completion:

3.13 CLEANING

Remove debris, unused materials and elements from the site relating to the plaster system application. Replace damaged, cracked or marked elements. Leave the whole of this work to the required standard.

3.14 FINAL INSPECTION

A final inspection by Resene Construction Systems applicator and project assessor of the entire finished cladding to take place immediately after completion of the wall cladding work and any defects or subsequent damage made good immediately.

4 SELECTIONS

For further details on selections go to www.reseneconstruction.co.nz.
Substitutions are not permitted to the followingResene Construction Systems, unless stated otherwise.

4.1 RCS PLASTER SYSTEM - MICROSTONE FINISH (OVER PLASTERBOARD). RESENE HALF PRAVDA Y69-014-081

Location:	Internal Circulation Walls and Shower Rooms 1-4
Manufacturer:	Resene Construction Systems
Substrate:	Plasterboard (Level 3/4 finish)
Seal coat:	Resene Quick Dry over plastered Joins
Slurry coat:	RCS Resin MultiStop Grey Slurry Mix
1st coat:	Rockcote Microstone Base Coat 2mm
2nd coat:	Rockcote Microstone Base Coat 1mm
Colour:	Resene Half Pravda Y69-014-081

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5214HP HALE MANUFACTURING TOILET & SHOWER PARTITIONS

1 GENERAL

This section relates to the supply and installation of Hale Manufacturing Ltd toilet and shower partition systems.

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:

ABS	Acrylonitrile butadiene styrene
MDF	Medium-density fibreboard
MR	Moisture resistant

The following definitions apply specifically to this section:

High-pressure laminate	Resin impregnated kraft paper, decorative paper and clear overlay sheets, layered, compressed and bonded together by high-pressure and heat
Low-pressure laminate	Resin impregnated decorative paper sheet, bonded to board substrate by low-pressure and heat

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

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Hale Partitioning System Installation Manuals
Hale Toilet and Shower Partitions - Operation and Maintenance Manual
Fire Test Reports

Manufacturer/supplier contact details

Company:	Hale Manufacturing Ltd
Web:	www.haleman.co.nz
Email:	haleak@haleman.co.nz (Auckland) graham.turnbull@haleman.co.nz (Wellington) info@propertyservices.co.nz (Christchurch)
Telephone:	09 573 5999 (Auckland) 04 570 5888 (Wellington) 03 981 7442 (Christchurch)

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For 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.

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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 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 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:

- Hale Toilet and Shower Partitions - Operation and Maintenance Manual

Provide this information prior to practical completion.

Performance

1.9 INTERIOR SURFACE FIRE PROPERTIES - WALLS, GROUP NUMBER

A Group Number for Hale Manufacturing partition panels has been determined by testing or classification in accordance with BPS, 8.5.1 Group Numbers. Refer to SELECTIONS for partition system Group Number.

2 PRODUCTS

Partition systems

2.1 PARTITION SYSTEM - HALE PRIVACY

Partition system comprised of 13mm thick high-pressure laminate partition and door panels, available in various colours/patterns, aluminium trims and mounting channels. Aluminium headrails with snap insert supplied for non-full height system. Aluminium privacy door strip option available.

Components

2.2 HARDWARE

Hale Manufacturing hardware including locks, latches, vacancy indicators, hinges and coat hangers with integrated door stop. Available colours satin chrome and black.

2.3 FIXINGS

Hale Manufacturing stainless steel fixings.

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.

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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/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALL PARTITION SYSTEM

Install partition system and associated components in accordance with the Installation Manual.

Completion & Commissioning

3.6 COMPLETION MATTERS

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

4 SELECTIONS

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

Partition systems

4.1 PARTITION SYSTEM - HALE PRIVACY. 13MM LAMINEX COMPACT LAMINATE. BURNISHED WOOD WITH BLACK POWDERCOATED TRIMS & HARDWARE

Location:	Shower Rooms 1-4
Manufacturer:	Hale Manufacturing Ltd
System:	Hale Privacy
Panel brand:	Laminex Compact Laminate
Panel substrate:	Compact laminate
Panel thickness:	13mm
Colour panel:	Laminex Burnished Wood
Colour trims:	Black
Colour hardware:	Black. Privacy lock to be ordered from separate supplier and installed on site
Privacy strips:	Required - Black

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5231 INTERIOR DOORS & WINDOWS

1 GENERAL

This section relates to the supply and installation of interior:

- doors and frames

1.1 RELATED WORK

Refer to 5231C CS FOR DOORS for cavity slider

Refer to 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:

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:

AS/NZS 1170.1	Structural design actions - Permanent, imposed and other actions
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
NZS 4223.3	Glazing in buildings - Human impact safety requirements

Window & Glass Association NZ (WGANZ) documents:

PQAS	Powder Coating Quality Assurance System
SFA 3503-03	Anodic Oxide coatings on wrought aluminium for external architectural application (2005)

2 PRODUCTS

Materials - door frames general

2.1 TIMBER DOORS

To NZS 3602. Moisture content 10-14%. To NZS 3610.

Materials - doors general

2.2 TIMBER

To NZS 3602. Moisture content 10-14%. To NZS 3610. Solid or hollow core.

Materials - doorsets

2.3 STANDARD DOORSETS, SIDE HUNG DOOR

Frames to profile as detailed and dimensioned, fitted with solid or hollow core door.

Refer to SELECTIONS.

Components

2.4 WINDOW AND DOOR FURNITURE

Refer to 5521 HARDWARE for type and finish.

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2.5 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.

2.6 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.

2.7 DOOR HINGES

Size and gauge to carry door size and weight. 3 hinges per door.

Type:	Loose pin
Size:	89mm
Material:	Zinc-plated steel
Pin:	Loose-pin stainless steel

2.8 DOOR SKIN (FACINGS)

Doors skins as detailed and dimensioned.

Finish

2.9 TIMBER - PAINT FINISH

Factory applied coating system.

3 EXECUTION

Conditions

3.1 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).

3.2 DO NOT DELIVER

Do not deliver any elements which cannot be unloaded immediately into suitable storage conditions.

3.3 HANDLE

Handle, unload and store elements without distortion and avoiding pre-finished surfaces rubbing together, and contact with mud, moisture and other damaging materials.

3.4 PROTECT

Protect all elements against damage to arrises and glazing beads. Store frames and doors flat and away from moisture or direct sunlight.

3.5 FABRICATE DOORSETS

Fabricate doorsets and windows in the factory with doors hung, provision for furniture made, finishes applied and fully operable.

3.6 FABRICATE DOORS

Fabricate doors in the factory, with provision for door furniture.

3.7 CHECK ALL OPENINGS

To NZS 3604.Check all openings on site for size and standard of execution before installing window or door frames. Installation tolerances of windows subject to earthquake design to comply with AS/NZS 1170.1.

Assembly

3.8 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.

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Application - generally

3.9 FIXING FRAMES

Fix and assemble frames rigidly in place, plumb, level and true to line and face without distortion and with all opening sashes fully and easily operating. Fit architraves.

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 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.

Application - doorsets

3.12 PROPRIETARY ELEMENTS

Fix in accordance with the door manufacturer's requirements.

3.13 INSTALLATION GENERALLY

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. Fixings concealed behind planted stops.

Hang doors on hinges, sliding or bi-fold gear as specified and to operate freely. Fit all hardware and door furniture.

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 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.

3.16 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.

3.17 INSTALL PANELS

Prime rebates and beads, install sealant backing strips or silicone. Install dry beading to outside of panels as selected. Do not mitre corners of beads.

3.18 INSTALL FURNITURE

Install latches, locks and door furniture as scheduled.

3.19 CHECK

Check and adjust operation of all doors, hardware and furniture.

Application - windows

Completion

3.20 PROTECTION

Protect all finishes against damage from adjacent and following work.

3.21 REPLACE

Replace damaged, cracked or marked elements.

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3.22 TRADE CLEAN

Clean off or remove safety indicators at completion of the building.

3.23 LEAVE

Leave work to the standard required for following procedures.

3.24 REMOVE

Remove safety indicators and protective coverings, and wipe down all doorsets thoroughly to leave them perfectly clean. Remove all debris, unused materials and elements from the site.

4 SELECTIONS

Doors

4.1 STANDARD DOORSETS, SIDE HUNG TIMBER DOOR

Location:	Store, Clean Linen
Door type:	Solid core
Material:	Timber
Door leaf size:	Refer door schedule
Door finish:	Painted
Frame:	timber, grooved for wall linings
Frame finish:	Painted
Hinge type/finish:	NZ Hardware Ball Bearing Fixed Pin 304 Stainless Steel, or similar / Stainless steel

Finish

4.2 PAINT FINISH

Brand:	Resene
System name:	Lustacryl
Finish/colours:	TBC

4.3 POWDER COATING

Refer to 6746D DULUX POWDER AND INDUSTRIAL COATINGS for powder coating products.

Refer to 6746IP INTERPON POWDER COATINGS for powder coating products.

Hardware

4.4 HARDWARE

Refer to 5521 HARDWARE section.

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5231C CS CAVITY SLIDERS

1 GENERAL

This section relates to the supply and installation of CS Cavity Sliders interior sliding doors.

1.1 RELATED WORK

Refer to 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.

Documents

1.3 DOCUMENTS

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

NZS 3602	Timber and wood-based products for use in building
NZS 4223.3	Glazing in buildings - Human impact safety requirements

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

CS Cavity Sliders Specification Guide (Sep 2025)
CS Cavity Sliders Product Installation Instructions
CS Cavity Sliders Maintenance Manual
CS Cavity Sliders Warranty
BRANZ Appraisal 900 (2020) - CS Cavity Sliders - Amended 09 December 2021

Manufacturer/supplier contact details

Company:	Cavity Sliders Ltd
Trading as:	CS Cavity Sliders
Web:	www.cavitysliders.com/nz/
Email:	info@cavitysliders.co.nz
Telephone:	0800 754 337 09 276 0800 Auckland 07 928 0800 Waikato/Bay of Plenty 03 348 6158 South Island

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For CaviSlider, CaviRobe, CaviTrack and Pre-hung Jambs
5 years	For CS manufactured door leaves and Automatic Units
2 years	For CaviLock

- 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.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 year	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.

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Requirements

1.7 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be approved by CS Cavity Sliders. 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 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:

CS Cavity Sliders Maintenance Manual

Provide this information prior to practical completion.

Compliance information

1.10 COMPLIANCE - BRANZ APPRAISAL

CS Cavity Sliders cavity sliding doors have been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 900.

2 PRODUCTS

Materials - general

2.1 TIMBER

Solid timber to NZS 3602 to profiles detailed. Moisture content approximately 16% ex factory.

2.2 GLASS

Refer to glazing section(s) for glazing to timber and aluminium doors.

Materials - Cavity Slider units

2.3 CAVITY SLIDER UNITS

CaviSlider cavity slider units to profile as scheduled, detailed and dimensioned. Refer to SELECTIONS.

Components

2.4 DOOR FURNITURE

CaviLock architectural handles and locks as scheduled.

2.5 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.

2.6 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.

2.7 SLIDING DOOR GEAR

CS Cavity Sliders track to suit door size, weight and application. Stainless steel carriages and mount plates are available for the CS240 kg and CS500 kg systems.

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 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.

Timber substrate: 14% maximum moisture content

Assembly

3.4 FABRICATION GENERALLY

Manufacture and fabricate frames and doors as detailed in a factory with provision for door furniture, applied finishes and operation. Hang doors on sliding gear as specified and to operate freely. Provide temporary bracing and protection to secure all opening elements for transportation.

Installation/application

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.6 INSTALLATION GENERALLY

Install in accordance with CS Cavity Sliders installation instructions.

3.7 FIXING FRAMES GENERALLY

Wedge frames into opening plumb, level, and true to line and face without distortion. Align wedges with fixing points and hinge locations. Fix rigidly into wall framing. Conceal fixing heads behind stops and beads where possible. Punch fixing heads below timber surfaces where visible. Adjust packing and fixings to eliminate binding. Do not cut, plane or sand frames to remedy distortion.

3.8 TIMBER STUD WALLS - TIMBER FRAMES

Fix direct to opening and pack, with one fixing in the vicinity of the lock.

3.9 STEEL STUD WALLS - STEEL FRAMES

Using a pilot hole in the frame, fix to steel studs with countersunk self-drilling corrosion proof screws. Fix direct to opening and pack, with one fixing in the vicinity of the lock.

3.10 STEEL STUD WALLS - TIMBER FRAMES

Drill the timber frame and fix to steel studs with countersunk self-drilling corrosion proof screws. Fix direct to opening and pack, with one fixing in the vicinity of the lock.

3.11 BOTTOM CLEARANCE

Provide for specified floor coverings plus a minimum of 5mm clearance at any point of slide. 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 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.

3.13 INSTALL PANELS

Prime rebates and beads, install sealant backing strips or silicone. Install dry beading to outside of panels as selected. Do not mitre corners of beads.

3.14 MANIFESTATIONS

To comply with NZS 4223.3.

3.15 INSTALL FURNITURE

Install latches, locks and door furniture as scheduled.

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3.16 CHECK

Check and adjust operation of all doors, hardware and furniture.

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.cavitysliders.com/nz/
Substitutions are not permitted to the following, unless stated otherwise.

CS Cavity Sliders Standard Range

4.1 CS CAVITY SLIDER - ACCESSIBLE

Location:	Accessible Bathroom DG.05
Manufacturer:	CS Cavity Sliders
Leaf dimensions:	2190mm x 910mm minimum
Door type:	Timber
Door finish:	Paint
Single or Biparting:	Single only
Jamb type/finish:	Timber Flat
Framing/size:	90mm
Lining thickness:	16mm
Track finish:	Natural anodised
Handle type:	CL400 ADA by CaviLock® Matt Black

Hardware

4.2 CS CAVITY SLIDERS - CAVILOCK® SLIDING-DOOR HANDLE HARDWARE. CL400 ADA MAGNETIC PRIVACY - MATT BLACK

Provide the following CS CaviLock® specialised handle hardware:

Location	Handle Type	Finish	Fitting Height to centre	Door Thickness	Comments
DG.04 Accessible Slider	CL400 Privacy	Matt Black	990mm	34 - 52mm	

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5313GS GIB RONDO METAL CEILING BATTEN SYSTEMS FOR GIB PLASTERBOARDS

1 GENERAL

This section relates to the supply and installation of GIB Rondo metal ceiling batten systems.

It includes:

- Direct fix ceiling batten system
- Clip fix ceiling batten systems
- Suspended ceiling batten systems

1.1 RELATED WORK

Refer to 5113G GIB PLASTERBOARD LININGS for standard plasterboard lining

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
TCR	Top cross rail

The following definitions apply specifically to this section:

Single span	Spans between two supports only
Multi span	Continuous span across more than two supports

Documents

1.3 DOCUMENTS

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

AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
GIB Rondo Metal Batten Systems - Brochure
GIB Rondo Metal Batten Systems - Specification and installation manual (Sep 2024)
GIB Rondo Metal Batten Selector Chart
GIB Site Guide - For residential and commercial installations (Apr 2024)
GIB Rondo BPIR documentation

Manufacturer/supplier contact details

Company:	Winstone Wallboards Ltd
Web:	www.gib.co.nz
Telephone:	0800 100 442

Warranties

1.5 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.

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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.

Compliance information

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer / supplier warranty
- 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

Materials - GIB Rondo direct fix ceiling batten system

2.1 GIB RONDO DIRECT FIX 310 METAL CEILING BATTEN SYSTEM

GIB Rondo 310 metal ceiling batten system comprising G2 Z275 hot-dip galvanized steel components to AS 1397 including 35mm x 40mm furring battens with 55mm x 21mm batten jointers. Refer to SELECTIONS.

Components

2.2 METAL CEILING BATTENS

G2 Z275 hot-dipped galvanized furring battens to AS 1397. Available in a range of sizes.

2.3 BATTEN JOINTERS

G2 Z275 hot-dipped galvanized batten jointers to AS 1397. Available in a range of sizes.

2.4 PERIMETER CHANNELS

G2 Z275 hot-dipped galvanized perimeter channels to AS 1397. Available in a range of sizes. Refer to SELECTIONS.

2.5 FIXINGS

Fixing type, size and material to suit application.

2.6 GIB PLASTERBOARD

Refer to relevant GIB plasterboard lining section.

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 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.

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3.4 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.

3.5 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work. Coordinate with relevant framing sections to provide additional framing where required to support ceiling perimeter channels/angles and control joints.

Timber framing moisture content:	18% maximum
	8-12% for air conditioned and/or centrally heated buildings

Installation - generally

3.6 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.7 INSTALLATION - GENERALLY

Install GIB Rondo metal ceiling batten system in accordance with GIB Rondo Metal Batten Systems Specification and Installation Manual.

3.8 SETOUT

Plan setout so all battens run in the same direction with maximum spacings of 450mm for 10mm thick GIB plasterboard or 600mm for 13mm thick GIB plasterboard. Maximum batten span between direct fixing points or clips to be 900mm for single spans and/or 1200mm for multi spans.

3.9 INSTALL PERIMETER CHANNELS

Establish a datum line for the ceiling and fix perimeter channels to the walls with 32mm x 8g GIB Grabber wafer head screws or 32mm x 7g GIB Grabber dual thread screws at the required level.

3.10 INSTALL BATTENS TO FRAMING

Set out and mark batten centres on framing above. Cut battens as required to leave a 5mm gap to the perimeter framing using tin snips, a hacksaw or grinder disk. Set battens in marked position with ends near perimeter walls inserted into perimeter channel/angle and fasten without distortion.

3.11 FIX BATTENS TO PERIMETER CHANNELS/ANGLES

Fix batten to perimeter channels/angles with 13mm x 7g GIB Grabber Pancake Head Drill Tip Screws or 3mm diameter steel rivets.

3.12 JOINTING BATTENS

Join GIB Rondo metal ceiling battens with proprietary batten jointers and fixings to suit batten type. Stagger joints between adjacent battens.

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.gib.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

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Materials - GIB Rondo direct fix ceiling batten system

4.1 GIB RONDO 310 DIRECT FIX (DF) SYSTEM - METAL CEILING BATTEN SYSTEM

Location:	New Link Ceiling & Clean Linen Store
System:	GIB RONDO 310 DIRECT FIX (DF) SYSTEM
Coding:	GR310-DF
Batten type:	310
Batten size:	35mm x 40mm
Batten fixing:	32mm x 8g GIB® Grabber® Wafer Head
Batten spacing:	600mm (for 13mm thick GIB board)
Batten jointer type:	312
Batten jointer size:	55mm x 21mm
Drop height:	35mm

Components

4.2 GIB RONDO 340 PERIMETER CHANNEL

Location:	Suitable for 310 batten systems
Type/Brand:	GIB Rondo 340 perimeter channel
Channel size:	35mm x 24mm x 36mm
Channel to wall fixing:	32mm x 8g GIB Grabber Wafer Head
Batten to channel fixing:	13mm x 7g GIB Grabber Pancake Head Drill Tip Screw

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5433E ECOPLY® FLOORING

1 GENERAL

This section relates to the use of Carter Holt Harvey Plywood Ltd (CHH PLY) Ecoply® plywood sheets for floors.

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:

FSC®	Forest Stewardship Council®

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
NZBC C/VM2	Protection from fire
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
AS/NZS 1604.3:2012	Preservative-treated wood-based products - Part 3: Plywood
AS/NZS 2269.0	Plywood - structural - specifications
NZS 3604	Timber-framed buildings

1.3 MANUFACTURER DOCUMENTS

Carter Holt Harvey Plywood Ltd documents relating to work in this section are:

Ecoply® Specification and installation guide December 2023
Ecoply® Plywood Products: Flooring, Product Technical Statement and BPIR.

Manufacturer/supplier contact details

Company	Carter Holt Harvey Plywood Limited
Web:	chhply.co.nz
Email:	info@ecoply.co.nz
Telephone:	0800 326 759

Requirements

1.4 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.5 NO SUBSTITUTIONS

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

Performance

1.6 SURFACE FIRE PERFORMANCE - UNFINISHED FLOORING

Unfinished Ecoply® plywood flooring has a critical radiant flux 2.2kW/m² as defined by NZBC C/VM2 Appendix B, Table B1 and in accordance with performance requirements of NZBC C/AS2, 4.17.3 and Table 4.5 Critical Radiant Flux Requirements for Flooring.

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2 PRODUCTS

Materials

2.1 ECOPLY® STRUCTURAL SQUARE EDGE

Radiata pine veneer ply manufactured to AS/NZS 2269.0. F8/F5 stress grade. CD surface grade, face sanded veneer and square sheet edges. Veneers bonded together with synthetic phenolic (PF) resin forming a Type A bond. H3.2 CCA treated to AS/NZS 1604.3, when used as a wet area substrate.

Components

2.2 NAILS - HOT DIPPED GALVANIZED

Hot dipped galvanized flat head, ring shank or annular grooved nails to Carter Holt Harvey Plywood Ltd requirements for size and use.

17 - 21mm plywood:	60mm x 2.8mm
25mm plywood:	75mm x 3.15mm

2.3 NAILS - STAINLESS STEEL

Stainless steel flat head, annular grooved nails to Carter Holt Harvey Plywood Ltd requirements for size and use.

17 - 21 mm plywood:	60mm x 2.8mm
25mm plywood:	75mm x 3.15mm

2.4 SCREWS IN TIMBER

Stainless steel, counter-sunk to Carter Holt Harvey Plywood Ltd requirements for size and use.

17mm plywood:	10g x 40mm
19 - 21 mm plywood:	10g x 45mm
25mm plywood:	10g x 50mm

2.5 ADHESIVE

Refer to SELECTIONS.

2.6 BRUSH ON TREATMENT

Soudal Metalex Ready to Use or Soudal Metalex Concentrated Timber Preservative. Clear or green colour product.

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.

Ensure support framing is completed to Carter Holt Harvey Plywood Ltd stated requirements for laying plywood sheets.

Ensure all Ecoply® square edge sheet edges and joints will be fully supported with framing width of minimum 45mm at each Ecoply® sheet joint.

Ensure moisture content is:

Timber:	18% maximum for framing

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Application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 TREAT

Treat cuts and holes in sheets with a brush-on timber preservative treatment.

3.6 SHEET LAYOUT

Lay sheets to Ecoply® Specification and Installation Guide (or specific design) stated 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. Provide a 2 to 3mm expansion gap between square edges of sheets and a 5mm expansion gap at the perimeter of the floor, unless otherwise specified. Lay sheets continuous over at least two spans. Refer to SELECTIONS for fixing requirements.

3.7 ADHESIVE FIXING

Apply a bead or daubs of adhesive to adhesive manufacturers and Carter Holt Harvey Plywood Ltd requirements and fastener pattern, work from the middle of the sheet outwards to develop glueline pressure.

3.8 MECHANICAL FIXINGS

Fixings at least 3 fastener diameters or 7 mm from square edges and 15mm from tongue and groove edges. Fasten edges and ends of sheets at 150 mm centres, and within the panel at no more than 300 mm centres.

3.9 WET AREAS

Ensure plywood is structural grade treated to H3 or H3.2 (CCA treated). Plywood substrates must have moisture content not more than 18% before installing membrane. With primed/sealed face and edges.

NOTE: Treated plywood must be allowed to breath for a minimum of 7 days before installation of membrane. Fixing must be to manufacturer specifications.
LOSP treated plywood must not be used.

Requirements if used for:
Flooring: Stress grade F8/F5, minimum thickness 18mm with framing at minimum 400mm centres both ways, or min 21mm with framing at 600mm centres both ways. Fixing, glue and stainless steel screws.

Completion & Commissioning

3.10 COMPLETION MATTERS

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

4 SELECTIONS

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

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Materials

4.1 ECOPLY® STRUCTURAL SQUARE EDGE PLYWOOD FLOORING

Location:	New Link Floor
Manufacturer:	Carter Holt Harvey Plywood Ltd
Brand/grade:	Ecoply® Structural Square Edge / CD
Stress grade:	F8/F5
Thickness:	19mm / 21mm (Align with thickness of existing decking - Confirm on site)
Sheet width:	1200mm
Sheet length:	2400mm
Treatment:	H3.2 CCA
Fixing:	Screw & Adhesive

Components

4.2 ADHESIVE

Type:	Soudal Gorilla Grip or Bostik® "tuff as nails" (elastomeric)

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5511LC LAMINEX CABINETRY

1 GENERAL

This section relates to the supply and installation of custom joinery fittings and cabinetwork, purpose made in a factory and fitted on site, incorporating **Laminex® New Zealand** range of cabinetry panel products.
It includes:

- Decorative panels
- Carcass boards
- Associated joinery components and accessories necessary to complete the cabinetry installation.

1.1 RELATED WORKS

- Refer to 5517 BENCHTOPS for proprietary bench tops.

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®

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
AS/NZS 4386.1	Domestic kitchen assemblies - Kitchen units
AS/NZS 4386.2	Domestic kitchen assemblies - Installation
ISO 5660.1	Reaction to Fire Tests - Heat Release Smoke Production and Mass Loss Rate Part 1: Heat Release Rate (Cone Calorimeter Method)

1.4 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:

- Laminex® Melteca® - Brochures, Technical Data Sheets, Material Safety Data Sheets and Care & Maintenance Guide
- Laminex® Acrylics - Brochures, Technical Data Sheets, Specification Guide, Material Safety Data Sheets and Care & Maintenance Guide
- Laminex® Natural and Reconstituted Veneer - Brochures, Technical Data Sheets, Specification Guide, Material Safety Data Sheets and Care & Maintenance Guide
- Laminex® Multipurpose Compact Laminate - Brochures, Technical Data Sheets, Specification Guide, Material Safety Data Sheets and Care & Maintenance Guide
- Superfine® and Lakepine® - Brochures, Technical Data Sheets and Material Safety Data Sheets
- Laminex® BPIR - various products
- Laminex® Fire Test Reports - various products

Manufacturer/supplier contact details

Company:	Laminex® New Zealand, a division of Fletcher Building Ltd
Web:	www.laminex.co.nz
Email:	info@laminex.co.nz
Telephone:	0800 303 606

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a Laminex® New Zealand material warranty:

10 years	For Laminex® Melteca® panels Limited Warranty
10 years	For Laminex® Acrylic panels Limited Warranty

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10 years	For Laminex® Multipurpose Compact Laminate Limited Warranty
7 years	For Laminex® Natural / Reconstituted Veneer panels Limited Warranty
5 years	For Laminex® Superfine® / Lakepine® (Whiteboard)

Refer to Laminex® New Zealand for warranty details and conditions.

- Provide this warranty on Laminex® New Zealand 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.

1.6 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.

Requirements

1.7 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified. If requested provide evidence of qualification / experience prior to commencing work.

1.8 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.

1.9 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified Laminex® New Zealand components and associated products listed in this section.

1.10 INFORMATION FOR OPERATION AND MAINTENANCE

Provide maintenance documentation in accordance with Laminex® New Zealand Care & Maintenance Guides 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

1.11 SURFACE FIRE PROPERTIES

Laminex® New Zealand cabinetry materials have been tested to ISO 5660 and have been assigned the following Group Numbers in accordance with BPS, 8.5.1 Group Numbers:

Laminex® Melteca® panels on MDF	Group Number 3
Laminex® Melteca® panels on FR MDF	Group Number 1-S
Laminex® Acrylic panels	Group Number 4
Laminex® Natural Timber or Reconstituted Veneer panels on FR MDF	Group Number 2
Laminex® Multipurpose Compact Laminate	Group Number 3

Superfine® and Lakepine® Whiteboard have been assigned the following Group Numbers as determined by BPS, Table 8.5.2.1: Material Group Numbers for some substrate and coating combinations:

Superfine® Whiteboard (particleboard)	Group Number 3
Superfine® moisture resistant Whiteboard (MR particleboard)	Group Number 3
Lakepine® Whiteboard (MDF)	Group Number 3

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Lakepine® moisture resistant Whiteboard (MR MDF) Group Number 3

Quality control and assurance

1.12 INSPECTIONS

Give sufficient notice so that inspection may be made of the following, before installation;

- Pre-assembled cabinetry fabricated and ready to be delivered to site.
- Site-assembled on site ready for installation.
- Areas of the building prepared to receive the cabinetry.

2 PRODUCTS

Materials - decorative panels

2.1 LAMINEX MELTECA QUALITY LAMINATED PANELS

Laminex Melteca Quality Laminated Panels comprised of either a Superfine particleboard or a FSC certified Lakepine MDF substrate with a double-faced melamine surface. Available in a selection of sheet sizes and thicknesses in a variety of decors and finishes, each with matching edgetape. Fire retardant options also available. Refer to Technical Data Sheet for further information. Refer to SELECTIONS.

2.2 LAMINEX MULTIPURPOSE COMPACT LAMINATE

Laminex Multipurpose Compact Laminate, a double-sided decorative panel with a resin black core reinforced with cellulose fibre bonded under high pressure and temperature. Available in stock as sheet size 3660 x 1830mm, thickness 13mm, and in a range of colours.

Refer to SELECTIONS.

Materials - carcass panels (unseen structural cabinetry panels)

2.3 LAKEPINE MOISTURE RESISTANT WHITEBOARD (MR MDF)

Trade Essentials Lakepine Whiteboard, a pre-finished wood panel, comprised of FSC certified moisture resistant medium density fibreboard (MDF) with a melamine surface bonded to both sides. Low formaldehyde emitting (E0) medium density fibreboard. Used for interior carcass work of cabinetry, or as a substrate for a wide variety of finishes and overlays interior areas subject to high humidity. Supplied in various panel sizes and thicknesses. Available in a range of finishes, with matching solid edgings and melamine tapes. Refer to SELECTIONS.

Accessories

2.4 ADHESIVES

As approved by the manufacturer for the cabinetry product or pre-finished cabinetry product joint being used.

Refer to adhesive manufacturer's specifications, Technical Data and information.

Finishes - timber veneer panels

2.5 LIGHT DUTY COATING SYSTEM

Single pack, clear or pigmented nitro-cellulose or pre-catalysed lacquer.

2.6 MEDIUM DUTY COATING SYSTEM

Two pack, clear or pigmented acid catalysed coating.

2.7 HEAVY DUTY COATING SYSTEM

Two pack, clear or pigmented polyurethane coating.

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 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.

Site check and confirm dimensions after wall linings have been fixed. Verify positions of electric power outlets, wiring to light fittings included in joinery fixtures, water supplies and waste pipe locations.

3.4 JOINERY FIXTURES GENERALLY

Execution to include those methods, practices and processes contained in the current syllabus for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs). Take responsibility for the completed joinery fixtures including fittings included within fixtures and the on-site installation.

3.5 DOMESTIC KITCHEN ASSEMBLIES

Unless otherwise specified / detailed, domestic kitchens to be constructed to AS/NZS 4386.1 and installed to AS/NZS 4386.2

3.6 SHRINKAGE

Arrange jointing and fixing so that shrinkage in any part and direction does not impair the strength or appearance of the finished work or damage the adjoining work.

3.7 LAMINEX NATURAL AND RECONSTITUTED VENEER PANELS

Select timber for match or uniformity or symmetry of colour or grain of adjacent pieces. Finish to same standard on all faces.

3.8 LAMINEX PANEL PRODUCTS

Select and match all adjacent pieces. Clash exposed edges of panels with matching edge tapes and finishes.

3.9 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Provide reasonable tolerances at connections between the joinery fittings and the building fabric so that any irregularities are adequately compensated for in the site fixing.

Assembly

3.10 MACHINING

Carry out machining within the practices required for the particular Laminex™ New Zealand panel product being used. Machine drill holes, cut recesses and form joints ready for assembly to the componentry manufacturer requirements. Ensure work is accurate, square and true to line.

3.11 MAKE CUT OUTS FOR APPLIANCES AND FITTINGS

Obtain fitting templates from the appliances and other fittings to be installed within cabinetry and bench tops. Ensure appliances and fittings can be installed with the required tolerances and clearances. Where bench tops are being provided under 5517LB LAMINEX NEW ZEALAND BENCHTOPS, provide templates and confirm dimensions to others.

3.12 ASSEMBLY

Carry out gluing, dowelling, and other operations necessary for the proper assembly of the fittings as detailed with fixings concealed unless detailed otherwise. Scribe fit adjustable shelves with 4 shelf pins to each and with force fit pin holes at 50mm maximum centres in solid cheeks. Construct drawers and using groove mounting runners, fit them with 3mm clearance into drawer space. Hang doors on concealed hinges with 115 degree openings except where detailed for 170 degrees.

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3.13 GLUE JOINTS

Use glue joints where provision for shrinkage is not required. Cross-tongue or otherwise reinforce. Surfaces in contact to have an even sawn or planed finish and be free of contamination. Mix, apply and set to the glue manufacturer's requirements with adequate pressure applied to ensure intimate contact that will be maintained while the glue sets.

3.14 CONNECTOR JOINTS

Locate and drive connectors to Laminex New Zealand requirements. Fit plastic trim cap where detailed. Conceal or hide from sight other connector heads.

3.15 FASTENER JOINTS

Locate and drive connecting bolts to Laminex New Zealand requirements. Form joint and fit and rotate centric sphere connector to finish it rigid and tightly fitting over the whole length of the joint.

Application

3.16 FIXING ON SITE

- Scribe fit and conceal fix rigidly in place square, level, plumb and true to line and face as detailed and to the required standard.
- Assemble fittings on-site if brought in sections.
- Fit counter and bench tops and upstands.
- Complete with moveable parts in place and freely moving in their proper range.

Finishing - Natural or Reconstituted Timber Veneer panels

3.17 COATING SYSTEM - PREPARATION

- Coatings to be done in consultation with a coating specialist.
- Fill timber defects with proprietary wood filler (e.g. cracks, holes, etc).
- Sand timber to a smooth even finish using 180 grit paper.
- Remove all sanding dust using air guns and tack rags.
- Ensure substrate is free from dust, grease, dirt and other contaminants.
- Ensure moisture content of the timber is less than 15% immediately before commencing coating operations.

3.18 COATING SYSTEM - APPLICATION

To coating manufacturer's requirements.

3.19 PROTECT

Protect finished surfaces from damage, particularly bench tops.

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.laminex.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials - decorative panels

4.1 LAMINEX MELTECA PANELS. BULLET NATURALE 16MM

Location:	Locker Carcass
Supplier:	Laminex New Zealand
Grade/brand:	Melteca Panels
Thickness:	16mm
Panel size:	2440mm x 1220mm
Substrate:	MR MDF
Finish:	Naturale
Colour:	Bullet

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4.2 LAMINEX NATURAL TIMBER VENEER. AMERICAN WHTE OAK QUARTERCUT 19MM. STAINED RESENE WOODSMAN CEDAR NATURAL WOOD OIL MOUNT ASPIRING WITH TWO PACK CLEAR LACQUER

Location:	Reception Unit
Supplier:	Laminex New Zealand
Grade/brand:	Laminex Natural Timber Veneered Panels
Thickness:	19mm, with 22mm unglued edging supplied to match species
Panel size:	2440mm x 1220mm
Substrate:	MDF
Backing:	F2S
Veneer cut	Quarter Cut
Veneer range:	Natural
Finish:	As above

4.3 LAKEPINE WHITEBOARD (MDF) 16MM

Location:	Cabinetry carcass
Supplier:	Laminex New Zealand
Grade/brand:	Trade Essentials Lakepine E0 MDF Standard Medium Density Fibreboard
Thickness:	16mm

4.4 LAMINEX MELTECA PANELS. BULLET NATURALE 18MM

Location:	Cabinetry Fronts
Supplier:	Laminex New Zealand
Grade/brand:	Melteca Panels
Thickness:	18mm
Panel size:	2440mm x 1220mm
Substrate:	MR MDF
Finish:	Naturale
Colour:	Bullet

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5516BH BLUM CABINETRY HARDWARE SYSTEMS

1 GENERAL

This section relates to the supply, assembly, installation and fixing of Blum New Zealand Ltd cabinetry hardware systems.

It includes:

- Lift systems for overhead cabinetry doors
- Hinge systems for cabinetry doors
- Motion technologies for soft-closing, electrical and mechanical opening support systems

1.1 RELATED WORK

Refer to 5511LC LAMINEX CABINETRY for cabinetry

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following definitions apply specifically to this section:

BLUMOTION	Soft-close motion technology
SERVO-DRIVE	One-touch opening and soft-close motion technology
TIP-ON	Press-to-open and press-to-close motion technology
TIP-ON BLUMOTION	Press-to-open and soft-close motion technology

Documents

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Blum Catalogue and Technical Manual 2024/2025
Blum Installation Instructions
Blum Warranty and Maintenance Statement

Manufacturer/supplier contact details

Company:	Blum New Zealand Ltd
Web:	www.blum.com
Email:	tania.bailey@blum.com (Northland, Auckland, Waikato, Bay of Plenty and Taranaki) kate.ward@blum.com (Wellington, Wairarapa, Tasman, Marlborough and Christchurch) brittany.smith@blum.com (Otago, Southland and West Coast)
Telephone:	09 820 5051

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

Blum New Zealand Ltd offers a limited Lifetime Manufacturer's Warranty for Blum products. For details of warranty limitations, contact Blum New Zealand Ltd.

- Provide this warranty on the Blum 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.

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Requirements

1.5 QUALIFICATIONS

Installers to be experienced in the installation of Blum Systems and recommended by Blum New Zealand Ltd. If requested, provide evidence of qualification / experience prior to commencing work.

1.6 NO SUBSTITUTIONS

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

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:

Blum Warranty and Maintenance Statement

Provide this information prior to practical completion.

1.8 DESIGN PARAMETERS FOR BLUM SYSTEMS - DESIGN BY CONTRACTOR

Contractor to design cabinetry hardware systems using the online Cabinet Configurator at www.blum.com.

This includes the following:

- Provides information required for the manufacturing of furniture and gives different ways of planning cabinets and selecting the appropriate Blum fittings

2 PRODUCTS

Materials - Blum cabinetry hardware systems

2.1 LIFT SYSTEMS - FOR OVERHEAD CABINETRY DOORS

Lift systems for overhead cabinetry doors, comprised of the following:

- AVENTOS HF top - Bi-folding lift with integrated soft-close BLUMOTION.
- AVENTOS HS top - Up and over lift system with integrated soft-close BLUMOTION, door front swings up and over the cabinet.
- AVENTOS HL top - Lift up system with integrated soft-close BLUMOTION, door front lifts parallel to the cabinet.
- AVENTOS HK top - Single flap lift system with soft-close BLUMOTION or TIP-ON for mechanical push-to-open and push-to-close handle-less applications.
- AVENTOS HKi - Lift system with integrated soft-close BLUMOTION or TIP-ON for mechanical push-to-open and push-to-close handle-less applications.
- AVENTOS HK-XS - Small flap lift system for shallow cabinets.
- SERVO-DRIVE for AVENTOS is compatible with HF top, HS top, HL top and HK top.

Refer to SELECTIONS for options.

2.2 HINGE SYSTEMS - FOR CABINETRY DOORS

Hinge systems for cabinetry doors, comprised of the following:

- CLIP top BLUMOTION - Concealed soft-close BLUMOTION hinge for doors with a handle or overhang detail.
- CLIP top range - Concealed hinge for use with TIP-ON (press-to-open and press-to-close) for handle-less cabinetry.

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.

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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 RETAIN

Retain cabinetry hardware in the manufacturer's original packaging. Ensure that units are complete with fixings and installation instructions. Label each unit separately with its Part Number to match the submitted and approved specification.

3.4 STORE

Store cabinetry 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 as released.

Pre-installation

3.5 INSPECTION

Before starting the hardware installation, check cabinetry is ready for the proper installation of the hardware.

3.6 CUTTING AND FITTING

Carry out cutting and fitting of the cabinetry 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.

Installation

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.8 INSTALL HARDWARE

Install cabinetry hardware systems in accordance with Blum Installation Instructions and the EASY ASSEMBLY app for assembly and adjustment information available online or offline by download for iOS and Android operating systems. Contact your Blum Specification Consultant for complex applications or technical advice.

3.9 CHECK HARDWARE

Check each operating hardware unit for correct and smooth functioning upon completion of hardware installation and again upon completion of the project. Adjust where required or replace units that cannot be adjusted and do not function correctly.

Completion & Commissioning

3.10 COMPLETION MATTERS

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

4 SELECTIONS

For further details on selections contact your local Blum Specification Consultant or go to www.blum.com.
Substitutions are not permitted to the following, unless stated otherwise.

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Lift systems for cabinetry doors

4.1 BLUM LIFT SYSTEMS - FOR OVERHEAD CABINETRY DOORS, AVENTOS HK TOP

Location:	Lockers
Manufacturer:	Blum
Brand/type:	AVENTOS HK top - Stay lift door
Door frame type:	MDF
Cabinet height:	Refer Drawings
Cabinet width:	Refer Drawings
Cabinet depth:	Refer Drawings
Components:	Cover Set
Colour:	Dark Grey
Motion technology:	None

4.2 BLUM HINGE SYSTEMS - FOR CABINETRY DOORS

Location:	All Joinery
Manufacturer:	Blum
Brand/type:	Clip Top Blumotion
Application:	110°hinge

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5517 BENCHTOPS

1 GENERAL

This section relates to the supply and installation of prefabricated bench tops, and required surface finishes and materials.
It includes:

- Vanity tops
- Reception deskstops
- Retail countertops

1.1 RELATED WORK

Refer to 5511LC LAMINEX CABINETRY for joinery cabinetry

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
HPL	High Pressure Laminate
MDF	Medium Density Fibreboard typically above 650kg/m³
MR MDF	Moisture Resistant, Medium Density Fibreboard typically above 650kg/m³
PEFC	Programme for the Endorsement of Forest Certification

The following definitions apply specifically to this section:

Integral Sink	Sometimes referred to as Integrated Sink: A sink and benchtop in one piece, typically the same material as the benchtop, fused together for a seamless finish. The sink can be a different colour to the benchtop.

documents

1.3 DOCUMENTS

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

AS/NZS 1328.1	Glue laminated structural timber - Performance requirements and minimum production requirements
AS/NZS 1491	Finger Jointed Structural Timber
AS/NZS 1604.1	Preservative-treated wood-based products - Part 1: Products and Treatment
AS/NZS 1859.2	Reconstituted wood-based panels - Specifications - Part 2: Dry process fibreboard
AS/NZS 1859.3	Reconstituted wood based panels - Specifications - decorative overlaid wood panels
AS/NZS 2269.0	Plywood - Structural - Part 0: Specifications.
AS/NZS 2270	Plywood and blockboard for interior use.
AS/NZS 2271	Plywood and blockboard for exterior use.
AS/NZS 2924.1	High pressure decorative laminates - Sheets made from thermosetting resins - Classification and specifications.
AS/NZS 3000	Electrical installations (know as the Australian/New Zealand Wiring Rules)
Health & Safety at Work Act:	2015.

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	for supply of the bench tops

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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/FABRICATOR

Provide an installer/applicator warranty:

2 years	For installation

- Provide this warranty on the installer standard form (if not available, use the standard form in 1237 WARRANTIES section)
- 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

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

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

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 as electronic PDF format documents:

Provide this information prior to practical completion, on which the Principal takes occupation of the works.

1.9 MAINTENANCE MATERIALS

Provide maintenance materials listed in SELECTIONS to the Principal for ongoing maintenance requirements.

1.10 HEALTH AND SAFETY

Comply with Health & Safety at Work Act:2015.

2 PRODUCTS

benchtop - acrylic solid surface

2.1 ACRYLIC BENCHTOP

Fabricated from 6mm or 12mm thick 100% acrylic (polymethymethacrylate) laid on 19mm nominal plywood to 2269.0, or MDF substrate. Acrylic benchtops are typically durable, non-porous, chemical and stain resistant, and seamless.
Refer to SELECTIONS.

components

2.2 PANEL PINS

Refer to the plywood manufacturer requirements and use 30mm, 40mm and 50mm plated panel pins for interior benchtops.

2.3 NAILS

To the panel fabricator requirements. Galvanized or stainless steel for H3 CCA treated sheets.

2.4 SCREWS

To the fabricator requirements for size and use.

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2.5 PROPRIETARY JOINTERS

Proprietary joinery jointers, as required, to join parts of the benchtop together and/or to join top to other element.

2.6 ADHESIVES AND SEALANTS

Use only multi-purpose water or solvent based adhesives and/or sealants recommended by the benchtop fabricator.

Refer to SELECTIONS

2.7 SITE APPLIED FINISHES

3 EXECUTION

conditions - general

3.1 JOINERY FIXTURES GENERALLY

Execution to include those methods, practices and processes contained in the current syllabus for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs). Take responsibility for the completed joinery fixtures including fittings included within fixtures and the on site installation.

3.2 SITE MEASURE

Site check and confirm dimensions after wall linings have been fixed. Verify positions of electric power outlets, wiring to light fittings included in joinery fixtures, water supplies and waste pipe locations. Check line and level of all adjoining surfaces.

3.3 TOLERANCES

Provide reasonable tolerances at connections between the joinery fittings and the building fabric so that any irregularities are adequately compensated for in the site fixing.

3.4 SHRINKAGE

Arrange jointing and fixing so that shrinkage in any part and direction does not impair the strength or appearance of the finished work or damage the adjoining work.

3.5 NATURAL FINISH TIMBER

Select timber for match or uniformity or symmetry of colour or grain of adjacent pieces. Finish to same standard on all faces.

3.6 PRE-FINISH VENEER

Select veneer board for match or uniformity, or symmetry of colour, pattern, or grain of adjacent pieces. Finish to same standard on all faces. Clash exposed edges with matching strips.

conditions - site

3.7 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

3.8 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.

fabrication

3.9 MACHINING

Carry out machining within the practices required for the particular benchtop material product specified. Machine drill holes, cut recesses and form joints ready for assembly to the componentry manufacturer requirements. Ensure work is accurate, square and true to line.

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3.10 MAKE CUT OUTS FOR APPLIANCES & FITTINGS

Obtain fitting templates from the appliances and other fittings to be installed within joinery fixtures and bench tops. Ensure appliances and fittings can be installed with the required tolerances and clearances. Where bench tops are being provided under other work sections, provide templates and confirm dimensions to others.

3.11 GLUE JOINTS

Use glue joints where provision for shrinkage is not required. Reinforce joints where required. Surfaces in contact must be free of contamination. Mix, apply and set to the glue manufacturer requirements with adequate pressure applied to ensure intimate contact that will be maintained while the glue sets.

3.12 CO-ORDINATION

Do not proceed if support frame/cabinetry or services are not matching requirements of the bench top. Inform the Project Administrator immediately.

3.13 ASSEMBLY

Check all components and built-in elements are included.

3.14 FABRICATION QUALITY

Carry out machining within the practices required for the bench top. Machine drill and cut holes and recesses and form joints to the componentry manufacturer requirements. Ensure work is accurate, square and true to line and face.

pre-installation

3.15 PRE-INSTALLATION REQUIREMENTS

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

Coordination of electrical - clearance from water containers:	To AS/NZS 3000, Clause 6.2.2.2, Table 6.1, figures 6.13 & 6.14

3.16 SITE MEASURE

Site check and confirm dimensions. Verify positions of electric power outlets, wiring to light fittings included in joinery fixtures, water supplies and waste pipe locations. Confirm all dimensions.

3.17 SUBSTRATE

Ensure substrate and fixings will allow work of the specified standard. Ensure finishes are complete. 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.

3.18 SUPPORT

Confirm fixing points needed for each bench top and confirm that the appropriate continuous support frame/cabinetry, nogging or lining at each fixing point location are provided.

installation

3.19 LOCATE

Locate bench top at heights and/or locations shown on the drawings.

3.20 INSTALL

Install each bench top in accordance with requirements of the specialist installer, using templates and tools supplied or recommended by the fabricator. Set bench top, vanity top, or sink, level, plumb and true to line and required location.

3.21 SEAL EDGES - WET AREAS

Seal the benchtop, vanity top, and cabinetry where it abuts walls and/or floors, using silicon sealant that is colour matching.

Refer to SELECTIONS for sealant type, and colour.

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3.22 SEAL EDGES - JOINTS AND CUT-OUTS

Seal raw edges of benchtops, including butt and mitred joints and cut-outs must be sealed to prevent the ingress of moisture. Ensure exposed sealant is colour matched to the benchtop/vanity top.

Refer to SELECTIONS for sealant type, and colour.

completion

3.23 COMPLETION MATTERS

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

4 SELECTIONS

For further details on selections refer to the manufacturer website listed in MANUFACTURER/FABRICATOR/SUPPLIER DOCUMENTS.
Substitutions are not permitted to the following manufacturer products, unless stated otherwise.

benchtop - solid surface

4.1 ARCHANT ACRALUX STONE FORENZA 20MM 50.0055.GR

Location:	Powder Station/Reception Unit/Reception Pod
Brand/type:	Acralux
Material:	100% acrylic (polymethymethacrylate)
Colour:	Stone Forenza
Acrylic surface thickness:	20mm
Edge detail:	Square - 2mm Radius

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5521 HARDWARE

1 GENERAL

This section covers the supply and installation of door hardware and furniture.

1.1 RELATED WORK

Refer to 5214HP HALE MANUFACTURING TOILET & SHOWER PARTITIONS for shower partitions

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS.

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.

2 PRODUCTS

2.1 CABINET WORK 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.

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.

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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 ASSA ABLOY PIN VERTIKAL-LONG 493311 000000 ELECTROMECHANICAL LOCK

Location: Lockers

4.2 ABI INTERIORS DAVIS DOOR HANDLE - BRUSHED COPPER 12980

Location: DG.04 Clean Linen
Supplier: ABI Interiors
Model: Davis Door Handle
Code: 12980
Finish: BRUSHED COPPER

4.3 ABI INTERIORS TOILET LOCK INDICATOR - BRUSHED COPPER 16964

Location: Changing Rooms 1-4
Supplier: ABI Interiors
Model: Toilet Lock Indicator
Code: 16964
Finish: BRUSHED COPPER

4.4 ABI INTERIORS ELLIS FLUSH HINGES - BRUSHED COPPER 12825

Location: D02, D04
Supplier: ABI Interiors
Model: Ellis Flush Hinges
Code: 12825
Finish: BRUSHED COPPER

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5811 SIGNS & DISPLAYS

1 GENERAL

This section relates to the supply and fixing of signs and displays, for internal and external applications.
It includes;

- Vinyl sign systems
- Engraved, individual letter, Braille, traffic and pylon sign systems
- Illuminated sign systems, general signs and emergency exit signs
- Custom design and made signs

1.1 RELATED WORK

Refer to Design & Build Electrical contractor for power supply and emergency lighting systems.

Documents

1.2 DOCUMENTS

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

NZBC F6/AS1	Visibility in escape routes
NZBC F8/AS1	Signs
AS/NZS 1428.4	Design for access and mobility - tactile indicators
AS 2293.1:2005	Emergency escape lighting and exit signs for buildings - System design, installation and operation
AS/NZS 2293.2:1995	Emergency evacuation lighting and exit signs for buildings - Inspection and maintenance
AS 2293.3:2005	Emergency escape lighting and exit signs for buildings - Emergency escape luminaires and exit signs
NZS 4223.3	Glazing in buildings - Human impact safety requirements
NZS 8603	Design and application of outdoor recreation symbols
NZS 9201.8	Model general bylaws - control of advertising signs
MOTSAM.1	NZTA Manual of traffic signs and markings - Part 1: traffic signs.
NZTA TCD	Traffic Control Devices Manual (TCD manual)

Note; MOTSAM 1 (& MOTSAM 2) is 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.

Warranties

1.3 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years:	For manufacturer of the signs

- 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:

2 years:	For installation

- 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.

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Requirements

1.5 QUALIFICATIONS

Work to be carried out by tradespeople experienced, competent and familiar with the materials and techniques specified.

1.6 NO SUBSTITUTIONS

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

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.

Submit shop drawings for review to Architect

- 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

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicators approval certificate from the manufacturer / importer / distributor Manufacturer's, importer's or distributors warranty
- Installer / applicator's warranty
- Producer Statement - Construction from the applicator / installer
- Producer Statement - Construction Review from an acceptable suitably qualified person

Performance

1.9 DESIGN - GENERAL

Signage to comply with NZBC F8/AS1 for escape routes, emergency related safety features, potential hazards and accessible routes and facilities for people with disabilities. Pictograms to NZBC F8/AS1, 2.4 **Pictograms.** Emergency illuminated signs also to NZBC F6/AS1 and AS 2293.1.

1.10 MANIFESTATIONS FOR GLASS

To NZS 4223.3, 2.2 Manifestation (making glass visible).

1.11 DESIGN - ADVERTISING

Design the signage to comply with NZS 9201.8.

1.12 TESTING ILLUMINATED EMERGENCY SIGNS

On completion of the installation, co-ordinate testing with the testing of the whole emergency lighting system to the procedure in AS/NZS 2293.2 and the requirements of AS 2293.1.

1.13 CERTIFICATE OF COMPLIANCE ILLUMINATED EMERGENCY SIGNS

Provide a certificate of compliance and provide a log book to AS/NZS 2293.2. Co-ordinate this with the whole emergency lighting system requirements.

2 PRODUCTS

Illuminated signs

2.1 EMERGENCY EVACUATION ILLUMINATED SIGNS

Illuminated exit signs, LED based, to AS 2293.1 and AS 2293.3, maintained or non-maintained. Graphics and sign size to NZBC F8/AS1. Refer to SELECTIONS for type, model, mounting.

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Sanitary signs

2.2 SANITARY SIGNS

Signs for personal hygiene facilities. Pictograms to NZBC F8/AS1, 8 Sanitary facilities, figure 15. Accessible facilities to be identified with the International Symbol for Access to NZBC F8/AS1, figure 9.

Statutory signs

2.3 STATUTORY SIGNS

Regulatory and non-regulatory signs, wall mounted or suspended. Used for information, direction, and warnings. Refer to SELECTIONS for materials, illumination.

Components

2.4 VINYL TAPE

Vinyl Tapes with dead stretch properties and chemical and abrasion resistance. The transfer resistant rubber adhesive system is to provide immediate adhesion properties.

2.5 LIQUID ADHESIVES

Structural and non structural strength adhesives to suit system requirements.

3 EXECUTION

Conditions

3.1 DELIVERY

Only deliver to the site signs that can be immediately unloaded in to suitable storage or be placed for direct installation.

3.2 INSTALLATION

Install to manufacturers requirements, firmly and securely in locations specified on drawings.

3.3 COORDINATE

Confirm appropriate fixing points needed for each sign have been provided. Do not proceed if the appropriate fixing points or services do not match the sign requirements.

3.4 SUBSTRATES

Ensure substrates and fixings will allow work of the specified standard. Ensure finishes are complete as appropriate.

3.5 MATERIALS, FITTINGS AND EQUIPMENT

New and undamaged, of the required standard and complying with the relevant Standards, Codes and Regulations.

3.6 SIGNAGE LOCATIONS

Signage locations shown on the drawings are their actual location, but subject to verification for final height and position. Clarify the location of all elements and units relative to surrounding materials and finishes. Confirm final positioning.

Application

3.7 MOUNTING SIGNAGE

Locate and fix, ensuring they are positioned as designed, and relative to plumb and level requirements.

Completion

3.8 REPLACE DAMAGED WORK

Replace damaged, cracked or marked elements.

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3.9 LEAVE CLEAN

Leave units and fittings clean and in full working order, wiring concealed and fire protected as required and with adjacent surface finishes unmarked. Leave work to the standard required by following procedures.

3.10 ENSURE CORRECT OPERATION

Ensure work is operating correctly, with equipment clean and light bulbs and tubes operational.

3.11 PROTECT

Protect items from damage or marking.

4 SELECTIONS

Refer to the project signage schedules/drawings for details.

4.1 PROPRIETARY SIGNS

Manufacturer:	TBA
Model:	Custom - Refer Internal Elevations
Location:	Reception Sign
Materials:	Acrylic & Stainless Steel
Size:	200mm high
Fixing:	Concealed Screw Fix
Illumination:	LED Backlit

4.2 EMERGENCY EVACUATION ILLUMINATED SIGNS - EXIT

Manufacturer:	TBA
Model:	To Match Existing
Location:	Above Door D01
Type:	EXIT
Mounting:	Wall Mounted

4.3 EMERGENCY EVACUATION ILLUMINATED SIGNS - DIRECTIONAL EXIT

Manufacturer:	TBA
Model:	To Match Existing
Location:	Above Existing Sliding Door in Change Facilities Block
Type:	Directional EXIT sign
Mounting:	Wall Mounted

4.4 SANITARY SIGNS - UNISEX

Manufacturer:	ABI Interiors
Model:	Refer Internal Elevations & Section 7150
Location:	Unisex Shower Rooms

4.5 SANITARY SIGNS - ACCESSIBLE UNISEX

Manufacturer:	ABI Interiors
Model:	Refer Internal Elevations & Section 7150
Location:	Unisex Accessible Shower Rooms

4.6 ACCESSIBLE ENTRANCE SIGN - DIRECTIONAL

Manufacturer:	TBA
Model:	Custom
Location:	Existing glass balustrade, adjacent New Steps
Materials:	4mm Black Perspex
Size:	100mm high
Fixing:	Adhesive fixed to glazing

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4.7 ACCESSIBLE ENTRANCE SIGN

Manufacturer:	TBA
Model:	Custom
Location:	Existing Glazed Door to Reception
Materials:	4mm Black Perspex
Size:	100mm high
Fixing:	Adhesive fixed to glazing

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6211AW ARDEX WALL TILING

1 GENERAL

This section relates to the supply and installation of ARDEX New Zealand Ltd internal and external wall tiling systems.

It includes:

- Primers
- Waterproofing systems
- Adhesives
- Sealants
- Grouts

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:

PVC	Polyvinyl chloride
WMAI	Waterproofing Membrane Association (NZ) Incorporated
WPM	Waterproofing membrane

Documents

1.2 DOCUMENTS

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

AS 3958.1	Ceramic tiles - Guide to the installation of ceramic tiles
ISO 13007.1	Ceramic tiles - Grouts and adhesives - Terms, definitions and specifications for adhesives
ISO 13007.3	Ceramic tiles - Grouts and adhesives - Terms, definitions and specifications for grouts
WMAI CoP	Code of Practice for Internal Wet Area Membrane Systems
Codemark™ CMNZ70189 ver0	Ardex WPM 715 and WPM 1000

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
ARDEX Tiling and Substrate Preparation Systems (October 2023)
ARDEX Product Technical Data Sheets
ARDEX Technical Tiling Systems Bulletins
ARDEX Product Building Product Information Sheets
ARDEX Tiling General Care information sheet
BRANZ Appraisal 472 (2022) - ARDEX Undertile Internal Liquid Waterproofing Membranes - Amended 24 May 2024
BRANZ Appraisal 473 (2022) - ARDEX Undertile External Liquid Waterproofing Membranes - Amended 24 May 2024
BRANZ Appraisal 727 (2023) - ARDEX Undertile Sheet Membrane (WPM 750 and WPM 1000)

Manufacturer/supplier contact details

Company:	ARDEX New Zealand Ltd
Web:	www.ardex.co.nz
Email:	info@ardexnz.com
Telephone:	0800 227339

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Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 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:

5 years 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 QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Waterproofing applicators to be approved by ARDEX New Zealand. Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any 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:
ARDEX Tiling General Care

Provide this information prior to practical completion.

Compliance information

1.10 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

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

1.11 COMPLIANCE - BRANZ APPRAISAL 472

ARDEX Undertile Internal Liquid Waterproofing Membranes has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 472.

2 PRODUCTS

Materials - patching compound

2.1 ARDEX A 46

Rapid setting and drying, slump free cement-based mortar.

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Materials - substrate preparation

2.2 ARDEX MULTIPRIME
One part, water-based primer for porous substrates.

Materials - waterproofing

2.3 ARDEX WPM 002
Two component, fibre reinforced, acrylic polymer, liquid waterproofing membrane.

2.4 ARDEX WPM 155 RAPID
One component, polyurethane-acrylic, fast drying, liquid waterproofing membrane.

2.5 ARDEX WPM 750
Fleece-lined, synthetic rubber sheet membrane, 0.75mm thick, 1.4m wide x 20m long rolls.

Materials - adhesives

2.6 ARDEX X 17
Flexible, polymer modified, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.7 ARDEX X 18
Flexible, polymer fortified, fibre reinforced, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.8 ARDEX X 77
Fibre reinforced, polymer modified adhesive. Classified C2FTES1 to ISO 13007.1.

Materials - grout

2.9 ARDEX FG 8
Fine sanded, cement-based, standard grout for joints 1mm to 8mm wide. Classified CG2W to ISO 13007.3.

2.10 ARDEX FS-DD
Non-sanded, cement-based grout for joints 1mm to 4mm wide. Classified CG1 to ISO 13007.3.

2.11 ARDEX EG 15
Three part stain and chemical resistant epoxy grout for joints 1.5mm to 15mm wide. Classified RG to ISO 13007.3.

Materials - additives

2.12 ARDEX E 90
Synthetic dispersion additive for use with ARDEX cement-based adhesives, to increase bond strength, elasticity and water resistance.

2.13 ARDEX ABALASTIC
Liquid polymer additive for use with cement-based adhesive to improve adhesion, water resistance and flexibility.

2.14 ARDEX GROUT BOOSTER
Water-based synthetic polymer grout additive for use with cement-based grouts to improve adhesion strength, flexibility and abrasion resistance.

Components

2.15 ARDEX ST TAPE
Uncured, self-adhesive butyl tape, fleece lined one side.

2.16 ARDEX CA 750 CONTACT ADHESIVE
Water-based contact adhesive.

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2.17 ARDEX CA 20 P PLUS CONSTRUCTION ADHESIVE

One part, flexible, silane modified polymer adhesive.

2.18 TRIMS

Tile trims and edge strips. Available in aluminium, brass and stainless steel. Refer to SELECTIONS.

2.19 MOVEMENT JOINT - ANGLE

Metal or PVC angle. Refer to SELECTIONS.

2.20 MOVEMENT JOINT - INSERT

Polyurethane or neoprene insert. Refer to SELECTIONS.

2.21 MOVEMENT JOINT - SEALANT

One part, flexible acetic or neutral cure silicone sealant for joints 1mm to 30mm. Refer to SELECTIONS.

2.22 MOVEMENT JOINT - BACKING ROD

Polyethylene foam (PEF) backing rod. 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 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.

Moisture content concrete:	75% maximum relative humidity, minimum 28 day cured

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 APPLICATION GENERALLY

To AS 3958.1, ARDEX New Zealand Ltd instructions, and to WMAI CoP recommendations.
Surfaces to be clean, sound and free of dust, oil, grease, curing compounds or release agents.

Installation - patching compound

3.6 APPLY PATCHING COMPOUND

Mix patching compound to ARDEX instructions. Trowel onto prepared substrate to required thickness.

Installation - substrate preparation

3.7 APPLY PRIMER

Sponge, brush or roll primer liberally over entire substrate.

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Installation - waterproofing

3.8 APPLY ARDEX LIQUID WPM

Reinforce corners and penetrations with ARDEX ST TAPE. Mix waterproofing components to ARDEX instructions. Brush or roll on liquid waterproofing membrane over prepared substrate. Apply two coats to achieve required minimum total dry film thickness to ARDEX product technical data sheet.

3.9 APPLY ARDEX SHEET WPM

Lay sheet membrane allowing for 50mm overlap with adjacent sheet. Working in rows lengthwise, fold back half of the width of the membrane sheet. Brush ARDEX contact adhesive to substrate and underside of membrane, avoiding the 50mm overlap. Unfold the membrane and press onto the substrate. Heat weld the 50mm overlapped membranes together.

Installation - adhesive

3.10 TILE SETTING OUT

Confirm the layout and bond pattern. Cut tiles to tile manufacturer's recommendations. Provide joint widths to the tile manufacturer's instructions.

3.11 MOVEMENT JOINTS GENERAL

Provide movement joints to AS 3958.1:

Depth:	Movement joints to go right through the tile and bed to the background.
Width:	6mm
Locations:	At junctions with floors, columns, nibs, and similar. Around sanitary fixtures. Around fixtures interrupting the tile surface (e.g. at junctions with joinery fixtures, window/door frames, and built in cupboards). At changes in substrate.
Large areas:	Provide vertical joints at not less than 3.5 metres spacing along the length of a wall. Provide horizontal joints at each storey rise in the height of a wall. Provide joints over existing joints in the substrate.

3.12 ADHESIVE APPLICATION GENERAL

For general wall tiling, use a 6mm x 6mm x 6mm notched trowel.

For mosaics, use a 4.5mm x 4.5mm x 4.5mm notched trowel.
Remove a tile periodically during installation to check for correct adhesive coverage. Do not fix tiles over skinned adhesive.

3.13 APPLY ADHESIVE

Mix adhesive to ARDEX instructions. Spread adhesive over prepared substrate with a notched trowel to ARDEX recommended bed thickness.

3.14 INSTALL TRIM

Press trim into wet adhesive.

3.15 INSTALL MOVEMENT JOINT ANGLE

Press angle into wet adhesive.

3.16 LAY TILES

Firmly press tiles into the adhesive bed for full contact between tile and adhesive with no voids. Butter the back of tiles with ribbed or keyed underside before laying into adhesive bed by spreading a thin layer of adhesive on the back of the tile. Remove surplus adhesive from tile surfaces before adhesive sets.

Installation - grout

3.17 APPLY GROUT

Mix grout to ARDEX instructions. Work grout into joints with a rubber trowel. Allow the grout to firm up in the joint before wiping tile surface with a damp, dense sponge.

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Installation - movement joint

3.18 INSTALL MOVEMENT JOINT INSERT

Place insert between movement joint angles.

3.19 INSTALL MOVEMENT JOINT BACKING ROD & SEALANT

Place PEF backing rod into movement gap. Apply a continuous bead of silicone sealant over PEF backing rod.

Completion & Commissioning

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.ardex.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

4.1 TILES

Location:	Refer Finishes Plan
Supplier:	Refer Finishes Schedule
Type:	Refer Finishes Schedule
Bond pattern:	Refer Finishes Schedule

ARDEX Tiled Internal Walls

4.2 ARDEX INTERNAL WET AREA WALL TILING SYSTEM OVER PLASTERBOARD

Location:	Refer Finishes Plan & Interior Elevations
Substrate:	Plasterboard
Primer:	ARDEX Multiprime
WPM:	ARDEX WPM 002
Adhesive:	As recommended by TILER
Grout:	As recommended by TILER
Grout colour:	TBC

Components

4.3 TILE TRIM

Not required

Spares & maintenance products

4.4 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:	Selected Tiles
Quantity:	1 box
Location:	Refer to 1270 CONSTRUCTION

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6221A ARDEX FLOOR TILING SOLUTIONS

1 GENERAL

This section relates to the supply and installation of ARDEX New Zealand internal and external floor tiling systems.

It includes:

- Levelling screeds
- Primers
- Waterproofing systems
- Adhesives
- Sealants
- Grouts

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:

CFC	Compressed fibre cement
PVC	Polyvinyl chloride
WMAI	Waterproofing Membrane Association (NZ) Incorporated
WPM	Waterproofing membrane

Documents

1.2 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 G3/AS1	Food preparation and prevention of contamination
AS/NZS 2908.2	Cellulose-cement products - Flat sheet
AS 3958.1	Ceramic tiles - Guide to the installation of ceramic tiles
ISO 13007.1	Ceramic tiles - Grouts and adhesives - Terms, definitions and specifications for adhesives
ISO 13007.3	Ceramic tiles - Grouts and adhesives - Terms, definitions and specifications for grouts
NZS 4121	Design for access and mobility - Buildings and associated facilities
WMAI CoP	Code of Practice for Internal Wet Area Membrane Systems
Codemark™ CMNZ70189 ver0	Ardex WPM 715 and WPM 1000

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

ARDEX Tiling and Substrate Preparation Systems (October 2023)
ARDEX Product Technical Data Sheets
ARDEX Technical Tiling Systems Bulletins
ARDEX Product Building Product Information Sheets
ARDEX Tiling General Care information sheet
BRANZ Appraisal 472 (2022) - ARDEX Undertile Internal Liquid Waterproofing Membranes - Amended 24 May 2024
BRANZ Appraisal 473 (2022) - ARDEX Undertile External Liquid Waterproofing Membranes - Amended 24 May 2024
BRANZ Appraisal 727 (2023) - ARDEX Undertile Sheet Membrane (WPM 750 and WPM 1000)
BRANZ Appraisal 925 (2024) - ARDEX WPM 1000 External Deck Membrane

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Manufacturer/supplier contact details

Company:	ARDEX New Zealand Ltd
Web:	www.ardex.co.nz
Email:	info@ardexnz.com
Telephone:	0800 227339

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For materials generally
15 years	For waterproofing 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:

2 years	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 WORKERS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Waterproofing applicators to be trained by ARDEX New Zealand. Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any 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:

- ARDEX Tiling General Care

Provide this information prior to practical completion.

Compliance information

1.10 COMPLIANCE - BRANZ APPRAISAL 472

ARDEX Undertile Internal Liquid Waterproofing Membrane has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 472.

1.11 COMPLIANCE - BRANZ APPRAISAL 727

ARDEX Undertile Sheet Membrane (WPM 750 and WPM 1000) has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 727.

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Performance - fire

1.12 SURFACE FIRE PERFORMANCE - FLOORS
Tiles composed entirely of ceramic are non-combustible.

Performance - Slip resistance

2 PRODUCTS

Materials - levelling screeds

2.1 ARDEX LQ 92
Cement-based, polymer modified, self-smoothing levelling compound.

2.2 ARDEX K 60
Two part, self-levelling latex compound.

2.3 ARDEX K 301
Cement-based levelling compound.

2.4 ARDEX A 46
Rapid setting and drying, slump free cement-based mortar.

2.5 ARDEX K 65
One part, fibre reinforced, polymer modified levelling compound.

2.6 ARDEX K 900 BF
Cement-based levelling compound.

2.7 ARDEX A 38 SCREED
Rapid-set, cement screed for use with ARDEX Gravel Mix and Engineered Sand aggregate.

2.8 ARDEX A 48 SCREED
Premixed, rapid-set, cement and aggregate screed.

Materials - substrate preparation

2.9 ARDEX MULTIPRIME
One part, water-based primer for porous substrates.

2.10 ARDEX P 9
One part, water-based primer for non-porous substrates.

2.11 ARDEX P 51
One part water-based, primer, pre-coat, and bonding agent for porous substrates.

Materials - waterproofing

2.12 ARDEX WPM 001
One component, fibre reinforced, acrylic polymer, liquid waterproofing membrane.

2.13 ARDEX WPM 002
Two component, fibre reinforced, acrylic polymer, liquid waterproofing membrane.

2.14 ARDEX WPM 155 RAPID
One component, polyurethane-acrylic, fast drying, liquid waterproofing membrane.

2.15 ARDEX WPM 750
Fleece-lined, synthetic rubber sheet membrane, 0.75mm thick, 1.4m wide x 20m long rolls.

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Materials - adhesives

2.16 ARDEX X 17

Flexible, polymer modified, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.17 ARDEX X 18

Flexible, polymer fortified, fibre reinforced, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1

2.18 ARDEX X 77

Fibre reinforced, polymer modified adhesive. Classified C2FTES1 to ISO 13007.1.

2.19 ARDEX X 56

Highly-flexible and fast setting polymer modified adhesive. Classified C1ES2 to ISO 13007.1.

2.20 ARDEX OPTIMA

Highly-flexible, two part adhesive with high initial grab qualities. Classified C2TS2 to ISO 13007.1.

2.21 ARDEX X 10 GREY

Flexible, polymer fortified, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C1TES1 to ISO 13007.1.

2.22 ARDEX S28 NEU

Fibre reinforced, rapid hardening, cement-based adhesive. Classified C2FTES1 to ISO 13007.1.

2.23 ARDEX QUICKBOND

Quick setting polymer modified adhesive. Classified C2FT to ISO 13007.1.

2.24 ARDEX WA 100

Two part epoxy adhesive. Classified R2T to ISO 13007.1.

Materials - grouts

2.25 ARDEX FG 8

Fine sanded, cement-based standard grout for joints 1mm to 8mm wide. Classified CG2W to ISO 13007.3.

2.26 ARDEX FS-DD

Non-sanded, cement-based grout for joints 1mm to 4mm wide. Classified CG1 to ISO 13007.3.

2.27 ARDEX EG 15

Three part stain and chemical resistant epoxy grout for joints 1.5mm to 15mm wide. Classified RG to ISO 13007.3.

Materials - additives

2.28 ARDEX GROUT BOOSTER

Water-based, synthetic polymer grout additive for use with cement-based grouts to improve adhesion strength, flexibility and abrasion resistance.

Components

2.29 ARDEX ST TAPE

Uncured, self-adhesive butyl tape, fleece lined one side.

2.30 ARDEX CA 750 CONTACT ADHESIVE

Water-based contact adhesive.

2.31 TRIMS

Tile trim, edge strips, floor finish divider strips and weather bars. Available in aluminium, brass and stainless steel. Refer to SELECTIONS.

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2.32 MOVEMENT JOINT - SEALANT

One part, flexible acetic or neutral cure silicone sealant. Refer to SELECTIONS.

2.33 MOVEMENT JOINT - BACKING ROD

Polyethylene foam (PEF) backing rod. 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 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.

Moisture content concrete:	75% maximum relative humidity, minimum 28 day cured
Moisture content plywood:	18% maximum
Moisture content particleboard:	16% maximum

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 APPLICATION GENERALLY

To AS 3958.1, ARDEX New Zealand Ltd instructions, and to WMAI CoP recommendations. Surfaces to be clean, sound and free of dust, oil, grease, curing compounds or release agents.

3.6 APPLY LEVELLING SCREED

Mix levelling screed to ARDEX instructions. Trowel onto prepared substrate to required thickness and fall, where required:

1:40 minimum	deck acting as a roof to NZBC E2/AS1
1:40 minimum	accessible showers to NZBC G1/AS1
1:50 minimum	shower bases to NZBC E3/AS1
1:50 minimum	shower bases for people with disabilities to NZS 4121
1:50 minimum	food processing areas (e.g. commercial kitchens) to G3/AS1
1:50 maximum	cross fall for outdoor accessways in public areas to NZS 4121

3.7 APPLY PRIMER

Sponge, brush or roll primer liberally over entire substrate.

3.8 APPLY ARDEX LIQUID WPM

Reinforce corners and penetrations with ARDEX ST TAPE. Mix waterproofing components to ARDEX instructions. Brush or roll on liquid waterproofing membrane over prepared substrate. Apply two coats to achieve required minimum total dry film thickness to ARDEX product technical data sheet.

3.9 APPLY ARDEX SHEET WPM

Lay sheet membrane allowing for 50mm overlap with adjacent sheet. Working in rows lengthwise, fold back half of the width of the membrane sheet. Brush ARDEX contact adhesive to substrate and underside of membrane, avoiding the 50mm overlap. Unfold the membrane and press onto the substrate. Heat weld the 50mm overlapped membranes together.

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3.10 SETTING OUT

Confirm tile layout and bond pattern. Cut tiles to tile manufacturer's recommendations. Lay tiles level, maintaining falls to drainage where required (e.g. floor wastes). Provide joint widths to the tile manufacturer's recommendations.

3.11 MOVEMENT JOINTS GENERAL

Provide movement joints to AS 3958.1:

Depth:	Movement joints to go right through the tile and bed to the background.
Width:	6mm
Locations:	At walls, columns, nibs, hobs and similar. Around sanitary fixtures. Around fixtures interrupting the tile surface (e.g. at junctions with joinery fixtures, window/door frames, and built in cupboards). At changes in substrate.
Large areas:	Provide joints at not less than 4.5 metres spacing in both directions for internal floors. Provide joints at not less than 3.5 metres spacing in both directions for external floors. Provide joints over existing joints in the substrate.

3.12 ADHESIVE APPLICATION GENERAL

For general floor tiling, use a 10mm x 10mm x 10mm notched trowel.

For large format tiles, use a 12mm x 12mm x 12mm notched trowel.
For mosaics, use a 4.5mm x 4.5mm x 4.5mm notched trowel.
Remove a tile periodically during installation to check for correct adhesive coverage. Do not fix tiles over skinned adhesive.

3.13 APPLY ADHESIVE

Mix adhesive to ARDEX instructions. Spread adhesive over prepared surface with a notched trowel to ARDEX recommended bed thickness.

3.14 INSTALL TRIM

Press trim into wet adhesive.

3.15 LAY TILES

Firmly press tiles into the adhesive bed for full contact between tile and adhesive with no voids. Butter the back of tiles with ribbed or keyed underside before laying into adhesive bed by spreading a thin layer of adhesive on the back of the tile. Remove surplus adhesive from tile surfaces before adhesive sets.

3.16 APPLY GROUT

Mix grout to ARDEX instructions. Work grout into joints with a rubber trowel. Allow the grout to firm up in the joint before wiping tile surface with a damp, dense sponge.

3.17 INSTALL MOVEMENT JOINT BACKING ROD

Place PEF backing rod into movement gaps. Apply a continuous bead of silicone sealant over PEF backing rod.

Completion & Commissioning

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.ardex.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

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4.1 TILES

Location:	Refer Drawing A1.05 and A6.03
Supplier:	Refer Finishes Schedule
Type:	Refer Finishes Schedule

ARDEX Tiled Internal Floors

4.2 ARDEX INTERNAL TILING SYSTEM OVER CONCRETE FLOOR

Location:	Floor generally
Substrate:	Concrete
Levelling:	As recommended by TILER
Primer:	ARDEX Multiprime
Adhesive:	As recommended by TILER
Grout:	ARDEX FS-DD (for tile joints 1mm to 4mm wide)
Grout colour:	TBC

4.3 ARDEX INTERNAL TILING SYSTEM OVER CONCRETE FLOOR - WET AREA

Location:	Showers
Substrate:	Concrete
Levelling:	As recommended by TILER
Primer:	As recommended by TILER
WPM:	ARDEX WPM 002
Adhesive:	As recommended by TILER
Grout:	ARDEX FS-DD with ARDEX Grout Booster (for tile joints 1mm to 4mm wide)
Grout colour:	TBC

Components

4.4 TRIMS

Not required - mitred joints

Spares & Maintenance

4.5 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:	Floor Tiles
Quantity:	1 box
Location:	Refer to 1270 CONSTRUCTION

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6614GE GILT EDGE STAIR NOSING, TRANSITIONS & TRIM

1 GENERAL

This section relates to the supply and installation of Gilt Edge Industries Ltd. products.

It includes:

- Stair nosings
- Stair inserts
- Aluminium floor and wall finish transition profiles
- PVC floor and wall finish transition profiles

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:

SRV	Slip resistance value

The following definitions apply specifically to this section:

Photoluminescence	Having the ability to become luminescent upon exposure to visible light

Documents

1.2 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/NZS 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:

Gilt Edge Industries Ltd.	Gradus Standard and XT Stair Nosing Technical Data Sheets
Gilt Edge Industries Ltd.	Gradus Stairtile Technical Data Sheets
Gilt Edge Industries Ltd.	Gradus Stair Nosing Installation Instructions
Gilt Edge Industries Ltd.	Gradus XT Stair Nosing Installation Instructions
Gilt Edge Industries Ltd.	Giltgrip Ecoglo Stair Nosings Installation Instructions
Gilt Edge Industries Ltd.	Gradus Stairtile Installation Instructions
Gilt Edge Industries Ltd.	Giltgrip Stair Nosing by Gradus BPIR
Gilt Edge Industries Ltd.	Gradus Stairtile BPIR
Gilt Edge Industries Ltd.	Aluminium Flooring Trims & Bars BPIR
Gilt Edge Industries Ltd.	Gradus Cleaning and Maintenance Information

Manufacturer/supplier contact details

Company:	Gilt Edge Industries Ltd.

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Web: www.giltedge.co.nz
Email: help@giltedge.co.nz
Telephone: 0800 445 833

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years For product warranty terms provided by manufacturer/supplier standard form

- 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:

1 year For installation

- 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 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 the 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:

Gradus Cleaning and Maintenance Information

Provide this information prior to Practical Completion.

Performance

1.10 SLIP RESISTANCE - PREVIOUSLY TESTED SURFACE - PVC INSERTS

Gradus stair nosing inserts have previously been tested for slip resistance and comply with NZBC D1/AS1 requirements.

Gradus PVC stair 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 52.

Compliance information

1.11 COMPLIANCE - ACCESSIBLE REQUIREMENTS

Gilt Edge stair nosings comply with NZS 4121.

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2 PRODUCTS

Materials - Aluminium stair nosing - ECOGLO series with photo-luminescent inserts - Resilient/surface mounting

2.1 GILTGRIP ECOGLO EGRP1 ALUMINIUM STAIR NOSING - RESILIENT/SURFACE MOUNTING

Single Ramp Edge - Multi-purpose nosing designed for installation directly onto a subfloor where there are no surface floor coverings or installed over hard floor covering. Ramped tread. Rakeback return to riser. Anodised aluminium stair nosing profiles with ECOGLO photo-luminescent slip-resistant inserts. Pre-drilled for supplied countersunk screw/glue fixings. Refer to SELECTIONS.

Components - Stair nosing

2.2 SCREWS

As supplied by Gilt Edge Industries Ltd.to suit profile and substrate.

2.3 ADHESIVE - BONDING ALUMINIUM PROFILES

Bostik Safetech Safe Fix isocyanate-free and solvent-free construction adhesive.

2.4 DOUBLE SIDED TAPE - ADHERE INSERTS TO NOSING PROFILE

Double sided tape supplied with one contact face pre-attached to aluminium profiles.

Accessories - Stair nosing

2.5 CLEANER

Bostik No. 2 solvent for cleaning of aluminium surfaces.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCT

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

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 proceed until unsatisfactory conditions has been corrected.

Timber substrate: 18% maximum moisture content
Concrete substrate: 75% maximum relative humidity

3.4 PROTECTION

Main Contractor to provide the following temporary protection of the finished work:

Protection from, weather, water, dust, damage etc during construction.
Protect adjoining work surfaces and finishes during the installation.

3.5 LAYOUT

Plan the general layout to conform to size and orientation requirements.

3.6 TEMPERATURE - SAFETECH SAFE FIX ADHESIVE

Do not apply Bostik Safetech Safe Fix adhesive in temperatures above 40°C or below 10°C.

Installation/application

3.7 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements

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3.8 INSTALLATION GENERALLY

Install in accordance with manufacturer's installation instructions.

3.9 CLEAN SUBSTRATE

As appropriate sand, grit blast or solvent wipe to achieve a clean substrate in accordance with **Gilt Edge Industries Ltd**. requirements.

3.10 CLEAN

Clean profiles prior to installation in accordance with **Gilt Edge Industries Ltd**. requirements.

Installation - Nosing

3.11 INSTALL NOSING

Install nosing in accordance with **Gilt Edge Industries Ltd**. installation guides and requirements. Refer to SELECTIONS for fixing method.

Completion & Commissioning

3.12 COMPLETION MATTERS

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

4 SELECTIONS

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

Aluminium stair nosing - ECOGLO series with photo-luminescent insert - Resilient/Surface Mounting

4.1 GILTGRIP ECOGLO EGRP1 ALUMINIUM STAIR NOSING

Location:	Exterior Deck Step
Supplier:	Gilt Edge Industries Ltd.
Nosing code:	EGRP1
Nosing type:	Aluminium
Nosing length:	Confirm onsite
Nosing width:	59mm
Nosing drop:	23mm
Nosing colour:	Silver satin anodised
Insert type:	ECOGLO photo-luminescent (glow in the dark)
Insert size:	1 x 44mm wide
Insert colour:	Photo-luminescent yellow/green with black slip-resistant strip
Install method:	Screw and adhesive fix using supplied screw fixings in pre-drilled holes and Bostik Safetech Safe Fix adhesive.

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6700R RESENE PAINTING GENERAL

1 GENERAL

This section relates to the general matters related to **Resene** painting work.

1.1 RELATED WORK

Refer to 6721R RESENE PAINTING INTERIOR

Refer to 6711R RESENE PAINTING EXTERIOR

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:

MPNZA	Master Painters New Zealand Association Inc.
SIPDS	Surface Information & Preparation Data Sheets

Documents

1.3 DOCUMENTS

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

Health and Safety at Work Act

AS/NZS 5131	Structural steelwork - Fabrication and erection
AS/NZS ISO 9001	Quality management systems - Requirements
MPNZA	Health and Safety Programme

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents related to this section are:

Resene	Surface Information & Preparation Data Sheets (SIPDS) (hard copy or at www.resene.co.nz)
Resene	Product Data Sheets (hard copy or at www.resene.co.nz)
Resene	Putting your safety first

Copies of the above literature are available from **Resene**

Telephone: 0800 RESENE (0800 737 363)

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Warrant this work under normal conditions of use against failure referring to the **Resene** Promise of Quality in the **Resene** One-Line specifications and product data manual.

Requirements

This painting specification is written based on information available at the time of writing.

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any specified **Resene** coating system, or associated components and products. Do not combine paints from different manufacturers in a paint system.

If in the applicator's own expertise and judgement an amendment to this specification is required, or where a substrate preparation, or required painting system is not covered in this specification, this shall be brought to the attention of the contract administrator and any amendment agreed before work proceeds any further.

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1.7 QUALIFICATIONS

Painters to be experienced competent workers, familiar with the materials and the techniques specified and with the **Resene** coating systems and be members of the Master Painters New Zealand Association Inc.

The applicator is to have the necessary skill, experience and equipment to undertake the work. The applicator remains responsible for ensuring proper completion of the work.

Painters to be selected from the **Resene** Eco Decorator programme. The **Resene** Eco Decorator programme is designed to recognise a nationwide network of environmentally responsible, quality focussed painting contractors.
Refer to www.resene.co.nz/ecodecorator.htm for a list of Eco Decorators in your area.

1.8 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 description:	1000 x 1000 mm sample of the finished work and colour
Sample type:	Fixed sample for review
Number:	One per paint system / colour
Location:	In situ
Reviewer:	Contract administrator
Time for review:	10 working days
Review criteria:	Appearance, colour

1.9 PRIOR TO WORK COMMENCING

Before any work commences painters should verify, with Architects or specifying authority, that their paint matches a previously supplied standard card or panel. Differently coloured paints will vary in price, opacity and durability. **Resene** normally only specify two coats of colour but with certain colours, such as yellows and oranges, three coats may be needed. Refer to SELECTIONS for location and type.

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 www.resene.co.nz/comn/services/maintenance.htm.

Provide this information prior to practical completion.

1.11 HEALTH AND SAFETY

Refer to and comply with the requirements of the Health and Safety at Work Act 2015 including the obligation to:

- Eliminate hazards and if hazards cannot be eliminated or isolated, then minimise the hazards in this work by using the proper equipment and techniques as required by the MPNZA Health and Safety Programme.
- Supply protective clothing and equipment.
- Inform the contractor as well as the employees and others on site of those hazards and put in place procedures for dealing with emergencies.

1.12 SAFETY DATA SHEETS

Obtain from **Resene** (phone 0800 RESENE, or www.resene.co.nz) the safety data sheet for each product used and comply with the required safety procedures. Keep sheets on site.

Performance

1.13 RESENE INSPECTION

Permit representatives of **Resene** to inspect the work in progress and to take samples of their products from site if requested. **Resene** will take care when inspecting the work, but does not accept any responsibility for the proper completion of the work before or after such inspection.

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1.14 INSPECTION OF THE WORK

Inspection of the whole of the work at each of the stages set out in SELECTIONS may be made. Agree on a programme that will facilitate such inspection, including notification when each part and stage of the work is ready for inspection.

2 PRODUCTS

Materials

2.1 MATERIALS GENERALLY

Do not combine paints from different manufacturers in a paint system.

Use only **Resene** products (which are guaranteed for consistency and performance under AS/NZS ISO 9001 and APAS) prepared, mixed and applied as directed in the **Resene** One-Line Specifications and Product Data Manual. This specification has been written using where practical and available both low/no VOC.

2.2 DARK COLOURS

Darker colours in areas of high sun exposure place significant stress on the coating and substrate. **Resene 'CoolColour'** technology reduces heat absorption of a wide range of colours. Contact your local **Resene** Representative or visit www.resene.co.nz for more information or visit www.resene.co.nz/coolcolour. View a list of **Resene** colours that can be made using **Resene CoolColour** technology at www.resene.co.nz/colourlibrary.

2.3 THINNERS/ADDITIVES

Use only if and when expressly directed by **Resene** for their particular product in a particular application. Always wear gloves when handling any solvents including turpentine as harmful chemicals may be absorbed into the body through the skin.

Accessories

2.4 ACCESSORIES

Contact your local **Resene ColorShop** for a full range of accessories and usage advice.

3 EXECUTION

Conditions

3.1 EXECUTION

To conform to required trade practice, which shall be deemed to include those methods, practices and techniques contained in the AS/NZS 2311.

3.2 CORROSION PROTECTION SUPERVISION FOR STRUCTURAL STEEL

To AS/NZS 5131, 9.9.20, for corrosion protection of structural steel. Provide an Inspection and Test Plan (ITP) to AS/NZS 5131, 13.9.1, prior to commencement.

Corrosion protection painting to be supervised by a competent person.

3.3 TREATED SURFACES

Where surfaces have been treated with preservatives or fire retardants, check with the treatment manufacturer that coating materials are compatible with the treatment and do not inhibit its performance. If they are not compatible, obtain instructions before proceeding.

3.4 BACK PAINTING

Co-ordinate with cladding and/or lining installer as to who will do the work and timing.

Exterior
For exterior cladding and trim that require on site finishing, paint the back and exposed bottom edges at the base of the cladding (generally, bottom plate overhang and horizontal flashings) to the manufacturer's requirements, but at least to 150mm up from base. Coating to match front finish, generally apply 2 coats or 1 coat if pre-primed.
Refer to appropriate exterior paint sections SELECTION clauses for claddings to be back painted.

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Interior
For lining and trim that require on site finishing and/or back painting (usually wet areas), paint the back and exposed bottom edges at the base of the lining, to the manufacturer's requirements, but at least to 150mm up from base. Coating to match front finish, generally apply 2 coats or 1 coat if pre-primed, or if no front finish, seal to manufacturer's requirements.
Refer to appropriate interior paint sections SELECTION clauses for linings to be back painted.

3.5 ANCILLARY SURFACES

The descriptions of areas in schedules and elsewhere are of necessity simplified. Coat ancillary exposed surfaces to match similar or adjacent materials or areas, except where a fair-faced natural finish is required or items are completely prefinished. In cases of doubt obtain written instructions before proceeding.

3.6 HARDWARE

Do not paint hinges or hardware that cannot be removed. Before commencing work carefully remove hardware, fixtures and fittings, set aside where they cannot be damaged or misplaced and replace on completion. Refer to SELECTIONS for hardware, fixtures and fittings for removal.

3.7 PROTECTION

Supply, lay and fix drop sheets, coverings and masking necessary to protect adjoining, fixtures, fittings and spaces from paint drops, spots, spray and damage.

Application - preparatory work

3.8 SURFACE PREPARATION

Refer to the **Resene** Surface Information & Preparation Data Sheets (SIPDS) and product data manual for surface preparation sheets (or obtain them by phoning 0800 RESENE, or at www.resene.co.nz) listed in the materials systems schedule clauses. Carry out the preparatory work required by them for each of the substrates.

3.9 SHARP EDGES, CRACKS AND HOLES

Remove and/or repair sharp edges, cracks and holes if present, as outlined in the preamble of the **Resene** One-Line specifications and product data manual.

Elastomeric sealants, if used, should not be painted. The paint film will not match the flexibility of the sealant and may severely limit its effectiveness.

3.10 REMEDIAL WORK

If any substrate or surface, that even with the preparation work called for in this section, cannot be brought up to a standard that will allow painting or clear finishing of the required standard then do not proceed until remedial work is carried out.

3.11 GAP FILLING

Make good cracks, holes, indented and damaged surfaces. Use suitable gap fillers to match the surface being prepared. Any special priming requirements of the fillers must be satisfied. Allow to dry or set before sanding back level with the surface. Prime or seal timber before using putty.

Exterior and wet areas: Use only Portland cement base or water-insoluble organic base gap fillers.

3.12 OFF-SITE WORK

Carry out this work under cover in a suitable environment with suitable lighting. Store items, both before and after coating, in a clean, dry area protected from the weather and mechanical damage, properly stacked and spaced to allow air circulation and to prevent sticking. Specific instructions for transport to site to avoid damage to the factory applied paint system may be required particularly for metallic top coat paints.

3.13 PRIMING JOINERY

Pre-treat any cut surfaces of preservative treated timber before priming. Ensure L.O.S.P treated joinery has dried sufficiently to lose solvent odour. Pre-treat bare timber with **Resene TimberLock** (see Data Sheet D48) to improve the durability of subsequent coats.

Liberally coat end grain, allow to soak in and then recoat.

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3.14 CONCEALED JOINERY SURFACES

Where off-site coatings are specified they must be applied to surfaces including those concealed when incorporated into the building.

3.15 CONCEALED METAL SURFACES

Apply primer to suit the coating system to surfaces which will be concealed when incorporated into the building.

3.16 EXTERNAL DOORS

Prime or seal and paint bottom edges before hanging.

3.17 BEAD GLAZING

Stained, varnished, or painted joinery to have the first two coats of a suitable primer and one undercoat, applied to rebates and beads before glazing.

3.18 PUTTY FRONTING - LINSEED GLAZING PUTTIES

According to the putty manufacturer's instructions allow putty to set, then prime with **Resene Wood Primer** (see Data Sheet D40) or **Resene Enamel Undercoat** (see Data Sheet D44). Fully protect the putty by completing the **Resene** coating system as soon as it is sufficiently firm.

Glazing putties not based on linseed oil to be over coated according to the putty manufacturer's instruction.

Application - generally

3.19 PAINTING GENERALLY

Comply with the **Resene** SIPDS Surface Information & Preparation Data Sheets or **Resene** One-Line specifications and product data manual data sheets and the additional requirements of this work section.

Ensure large wall areas that require more than one container of paint per coat, have enough paint boxed (mixed) together to complete the final coat. This will not apply if a single factory batch of paint, rather than shop tinted paint, is applied.

3.20 MIXING

Although generally supplied ready to use, all paints must be thoroughly mixed to lift any settled pigment and ensure the paint is homogeneous.

3.21 ENVIRONMENT

Defer painting of exterior surfaces until weather conditions are favourable - warm dry days without frost or heavy dews. Avoid painting in direct sunlight any surfaces that absorb heat excessively. As far as possible apply paint in the temperature range 15°C to 25°C. If temperatures fall outside the range of 10°C and 35°C do not paint unless paints with the necessary temperature tolerance have been specified. **Resene Hot Weather Additive** can be added to most **Resene** waterborne top coats to extend open time when application is undertaken at elevated temperatures or conditions that will cause rapid loss of water from the applied wet film. Do not apply solvent borne paint if moisture is present on the surface.

3.22 SEQUENCE OF OPERATIONS

Painting work to generally follow the following sequences:

- Back painting and pre-installation painting, then post-installation exposed-face painting
- Complete surface preparation before commencing painting.
- Apply primers, sealers, stains, undercoats, paints and clear coatings in the sequences laid down by **Resene**.
- Allow the full drying time between coats laid down by **Resene**.
- Do not expose primers, undercoats and intermediate coats beyond **Resene** recommendations before applying the next coat.
- Finish broad areas before painting trim.
- Ensure batch numbers of tins are matched for whole areas.
- Internally, paint ceilings before walls and walls before joinery, trim and other items.

3.23 APPLICATION

Select brush, roller, or pad and apply coatings to the requirements of **Resene** to obtain a smooth, even coating of the specified thickness, uniform gloss and colour.

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3.24 LIGHTLY SAND

Lightly sand primers, sealers, undercoats and intermediate coats to remove dust pick-up, protruding fibres and coarse particles. A more thorough sanding to provide a mechanical key for the new paint system may be required depending upon the condition or age of the existing paint system..

3.25 DEFECTIVE WORK

Correct defective work immediately and recoat as required, following precisely the **Resene** system being applied. The same applies to transportation damage to site of factory painted items.

3.26 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 and the proper number of coats applied.
- No blemishes such as runs, sags, crinkling, fat edges, entrained paint skins, hairs, dust, bare or starved patches, cracks, significant brush marks, ladder marks and blistering.
- Proper covering of corners, crannies, thin edges, cracks, end grain and other difficult places of application.

Completion

3.27 CLEAN

Clean adjoining surfaces, glass and fittings of any paint contamination. Clean off glass indicators at the completion of the building works. Clean glass inside and out to a shining finish. Use the **Resene Washwise** on site 'paint equipment clean-up water' reclamation system to minimise the environmental impact of cleaning paint application tools.

3.28 LEAVE

Leave the whole of this work uniform in gloss and colour, of correct thickness, free from painting defects, clean and unmarked and to the standard required by following procedures.

3.29 REMOVE

Remove drop sheets, coverings and masking to leave surrounding surfaces and areas clean, tidy and undamaged. Remove debris, unused materials and elements from the site.

3.30 REPLACE

Replace hardware without damage to it or the adjoining surface and leave hardware properly fitted and in working order.

3.31 DISPOSAL OF PAINTS AND THINNERS

Note: The use and disposal of paint and thinners represents a significant environmental hazard.

Ensure all paint and thinners are disposed of in the following manner:

- When requested hand over part used paint containers to client for maintenance touch ups.
- Recycle leftover paint at a **Resene ColorShop** as part of the **Resene "Paintwise programme**". Contact your local **Resene ColorShop** for details or view information online at www.resene.co.nz/paintwise.htm.
- Donate left over paint to local community groups.
- Solvent based paints, paint thinners, turpentine, mineral spirits and solvents require special disposal procedures. Do not pour down sewer or stormwater drains, sinks or into the ground. If they cannot be recycled they must be disposed of in a refuse dump licensed to take toxic waste.

3.32 MAINTENANCE

Good maintenance of coating systems involves a routine of regular cleaning as well as regular inspections. Regular inspections of the coating systems are recommended to identify breakdown, accidental damage to or undesirable deterioration of the paint.

Wash down of exterior coatings should be undertaken on an annual basis using **Resene Paint Prep** and **Housewash** (see Data Sheet D812).

Refer the **Resene** Caring for your paint finish brochure and the **Resene** website, www.resene.co.nz/comn/services/maintenance.htm.



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4 SELECTIONS

4.1 SELECTIONS

Refer to 6711R RESENE PAINTING EXTERIOR and 6721R RESENE PAINTING INTERIOR for selections.

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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.

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.

4.1 INSPECTION OF WORK

Stage	Resene SIPDS number/system

4.2 BACK PAINTING SCHEDULE
Paint 2 coats (including any pre-prime) to match exposed face coating.

Cladding type	Extent of back painting

4.3 HARDWARE
Hardware for removal:

Resene exterior paint systems

Exterior timber - new

4.4 RESENE NEW EXTERIOR TIMBER, PLYWOOD, WEATHERBOARDS - UNPRIMED

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 1/1
1st coat:	Resene Quick Dry D45, Waterborne Acrylic Primer Undercoat
2nd coat:	Resene Sonyx 101 D30, Semi-Gloss Acrylic
3rd coat:	Resene Sonyx 101 D30, Semi-Gloss Acrylic

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Exterior fibre cement cladding - new

4.5 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

4.6 RESENE NEW EXTERIOR GALVANIZED/ZINC COATED STEEL - 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 Summit Roof D315s, Satin Acrylic
3rd coat:	Resene Summit Roof D315s, Satin Acrylic

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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.

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 Zylone Sheen D302, Waterborne Low Sheen Acrylic
3rd coat:	Resene Zylone Sheen D302, Waterborne Low Sheen Acrylic

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, 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

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4.4 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 Flat Kitchen & Bathroom D314K, Waterborne Enamel
3rd coat:	Resene SpaceCote Flat Kitchen & Bathroom D314K, Waterborne Enamel

4.5 RESENE EXISTING INTERIOR PLASTERBOARD, WALLS - DRY AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1: 1/3
Spot Prime:	Resene Broadwall D403, Waterborne Wallboard Sealer
1st coat:	Resene Zylone Sheen D302, Waterborne Low Sheen Acrylic
2nd coat:	Resene Zylone Sheen D302, Waterborne Low Sheen Acrylic

4.6 RESENE EXISTING INTERIOR PLASTERBOARD, CEILINGS - DRY AREAS

Surface Prep:	Resene SIPDS No1 and Spec Sheet 1: 1/3
Spot Prime:	Resene Broadwall D403, Waterborne Wallboard Sealer
1st coat:	Resene Ceiling Paint D305, Waterborne Flat Acrylic
2nd coat:	Resene Ceiling Paint D305, Waterborne Flat Acrylic

4.7 RESENE NEW INTERIOR TIMBER TRIMS, DOORS & SKIRTING

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 EXISTING INTERIOR TIMBER TRIMS & SKIRTING

Surface Prep:	Resene SIPDS No2 and Spec Sheet 2: 9/3
Spot Prime:	Resene Quick Dry D45, Waterborne Acrylic Primer Undercoat
1st coat:	Resene Lustacryl D310, Semi-Gloss Waterborne Enamel
2nd coat:	Resene Lustacryl D310, Semi-Gloss Waterborne Enamel

Note: This section assumes the existing coating is enamel (which must be thoroughly abraded)

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7150 SANITARY FIXTURES, TAPWARE & ACCESSORIES

1 GENERAL

This section relates to the supply and installation of sanitary fixtures, tapware and sanitary accessories.

1.1 RELATED WORK

Refer to AIREY CONSULTANTS documentation for hot water cylinders.

Refer to AIREY CONSULTANTS documentation for the supply and fitting of waste disposal pipework

Refer to the electrical section/s for electrical connection of accessories.

Documents

1.2 DOCUMENTS

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

NZBC E3/AS1	Internal moisture
NZBC G1/AS1	Personal hygiene
NZBC G12/AS1	Water supplies
NZBC G12/AS3	Water supplies
NZBC G13/AS1	Foul water
NZBC G13/AS3	Plumbing and drainage
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
AS/NZS 3500.1	Plumbing and drainage - water services
AS/NZS 3500.2	Plumbing and drainage - sanitary plumbing and drainage
AS/NZS 3500.4	Plumbing and drainage - Heated water services
NZS 4223.3	Glazing in buildings - Human impact safety requirements

Plumbers, Gasfitters and Drainlayers Act 2006

Warranties

1.3 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years	For sanitary fixtures tapware and accessories

- 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/applicator warranty:

2 years	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

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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1.6 QUALIFICATIONS WORKERS – INDUSTRY QUALIFICATION REQUIREMENTS

Workers or supervisors of work are required to be a Certifying Plumber under the Plumbers, Gasfitters and Drainlayers Act 2006. 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. 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:

Provide this information prior to practical completion

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.

Ensure water supply and drainage pipework match the requirements of selected fixtures without force or distortion.

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALLATION REQUIREMENTS INCLUDING AS/NZS 3500.2

Install to NZBC G1/AS1, AS/NZS 3500.1 and AS/NZS 3500.4 as modified by NZBC G12/AS3, NZBC G12/AS1, NZBC E3/AS1, AS/NZS 3500.2, as modified by NZBC G13/AS3, and to the fixture manufacturer's installation requirements for each component.

3.6 INSTALLATION SANITARY FIXTURES

Carry out preparatory and assembly work, including connections to supply and drainage services and the application of all required slurries/bedding and sealants in sequence.

Fit the sanitary fixture in position, plumb, level, flush and rigid without stressing the attachment points of the component. Fixings to be corrosive resistant.

Seal between all sanitary fixtures and floors, wall linings, fixtures and the tops they are in, the tops and wall linings, to NZBC E3/AS1, 3.2. Fixtures include toilets, urinals, baths, basins, tubs, sinks. Tops include, vanities, bath surrounds, sink benches, etc, and their upstands. Form joint or seal between shower bases or urinals and impervious wall linings to NZBC E3/AS1, 3.3.

3.7 INSTALLATION TAPWARE

In accordance with the manufacturer's requirements. Maintain safe water temperatures to comply with NZBC G12/AS1, 6.14 Safe water temperatures.

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3.8 SEAL SHOWER TAPWARE

Seal shower wall lining penetrations such as shower head, shower hose, mixer, taps etc to NZBC E3/AS1, Fig. 6.

3.9 EARTHING OR EQUIPOTENTIAL BONDING METALLIC FIXTURES

Before enclosing, ensure equipotential bonding is provided to metallic water pipes and metallic sanitary fixtures using an earth bonding conductor to requirements of NZBC G12/AS1, 9.0 Equipotential bonding and/or AS/NZS 3000, 5.6 Equipotential bonding.

Completion & Commissioning

3.10 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.

4.1 LE VIVI YORK CARE RIMLESS BACK TO WALL TOILET SUITE. P TRAP LEVYORKCARE

Location:	Accessible Bathroom
Make and Model:	Le Vivi York Care Rimless Back to Wall Toilet Suite
Trap type:	P trap
Code:	LEVYORKCARE

4.2 BATHCO TRIM 500 WALL HUNG BASIN & PEDESTAL TRIM.005/SP.1033

Location:	Accessible Bathroom
Make & Model:	Bath Co Trim 500 Wall-Hung Basin & Pedestal
Waste/plug:	70mm Matte Black
Trap:	PVC - Concealed
Code:	TRIM.005/SP.1033

4.3 ABI INTERIORS ZURI UNDERCOUNTER ROUND BASIN. MATT WHITE 19096

Location:	Powder Station
Make & Model:	ABI Interiors Zuri Undercounter Round Basin with Overflow. Matte White
Waste/plug:	ABI Interiors Avi Pop Up Waste - Brushed Copper 11586
Trap:	PVC - Concealed
Code:	19096

4.4 ABI INTERIORS MINI WATER FILTER TAP WITH FONT DRAIN - BRUSHED COPPER 18008

Location:	Reception
Mixer:	Mini Water Filter Tap with Font Drain - Brushed Copper 18008
Filter System:	ABI Interiors 3 Stage Undersink Water Filter System 15911

4.5 BRAYCO SSN610 STAINLESS STEEL CATERING SINK & POKITMIX AXIL PULL-OUT KITCHEN MIXER TAP

Location:	Dirty Linen
Tub model:	BRAYCO SSN610 STAINLESS STEEL CATERING SINK
Taps:	POKITMIX AXIL PULL-OUT KITCHEN MIXER TAP

4.6 ABI INTERIORS SOLA ROBE HOOK - BRUSHED COPPER 14623

Location:	Shower Rooms
Hooks:	Sola Robe Hook - Brushed Copper 14623

4.7 ABI INTERIORS MILANI ROBE HOOK - MATTE BLACK 11670

Location:	Accessible Bathroom
Hooks:	Milani Robe Hook - Black

4.8 ABI INTERIORS MILANI HAND RAIL SHOWER SET. BRUSHED COPPER 18159

Taps not related to and separate from sanitary fixtures:

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Location: Shower Rooms
Supplier: ABI Interiors
Code: 18159
Finish: Brushed Copper

4.9 CAROMA OPAL BASIN MIXER. MATTE BLACK 99700B6A
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom
Supplier: Caroma
Code: 99700B6A
Finish: Matt Black

4.10 CAROMA OPAL SHOWER MIXER. MATTE BLACK 99707B
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom
Supplier: Caroma
Code: 99707B
Finish: Matt Black

4.11 CAROMA OPAL SUPPORT VJET SHOWER WITH 900MM RAIL. MATTE BLACK 687367B4E
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom
Supplier: Caroma
Code: 687367B4E
Finish: Matt Black

4.12 ABI INTERIORS MILANI BASIN MIXER. BRUSHED COPPER 11522LF
Taps not related to and separate from sanitary fixtures:

Location: Powder Station
Supplier: ABI Interiors
Code: 11522LF
Finish: Brushed Copper

4.13 ABI INTERIORS MILANI PROGRESSIVE SHOWER MIXER. BRUSHED COPPER 14227-LF
Taps not related to and separate from sanitary fixtures:

Location: Shower Rooms
Supplier: ABI Interiors
Code: 14227-LF
Finish: Brushed Copper

4.14 ABI INTERIORS LIRA SOAP BOTTE HOLDER DOUBLE - BRUSHED COPPER 14471
Taps not related to and separate from sanitary fixtures:

Location: Shower Rooms
Supplier: ABI Interiors
Code: 14471
Finish: Brushed Copper

4.15 TORK EXPRESS MULTIFOLD HAND TOWEL DISPENSER BLACK H2 552008
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom/Powder Station

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Supplier: Tork
Code: 552008
Finish: Black

4.16 TORK MINI SOAP DISPENSER. BLACK 565208
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom
Supplier: Tork
Code: 565208
Finish: Black

4.17 ELEMENTI ASSIST SURE-GRIP 90 DEGREE RAIL 750MM X 750MM. BLACK 60864.13
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom
Supplier: Robertson Bathware
Code: 60864.13
Finish: Black

4.18 SUPERQUIP SLATTED FOLDING SHOWER SEAT 800MM. MATT BLACK 077/304/800BL
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom/Shower Rooms
Supplier: Superquip
Code: 077/304/800BL
Finish: Black

4.19 NZ HARDWARE 1200MM X 1200MM CORNER SHOWER TRACK WITH CURTAIN. MATTE BLACK 11671
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom
Supplier: NZ Hardware
Code: 11671
Finish: Matte Black

4.20 ABI INTERIORS MILANI TOILET ROLL HOLDER. MATTE BLACK 11671
Taps not related to and separate from sanitary fixtures:

Location: Accessible Bathroom
Supplier: ABI Interiors
Code: 11671
Finish: Matte Black

4.21 ABI INTERIORS ARCH WALL MIRROR 600 X 750MM. BRUSHED COPPER 17235
Taps not related to and separate from sanitary fixtures:

Location: Powder Station
Supplier: ABI Interiors
Code: 17235
Finish: Brushed Copper

4.22 ABI INTERIORS PIXI TILE INSERT FLOOR WASTE 125MM - BRUSHED COPPER 10459
Taps not related to and separate from sanitary fixtures:

Location: Shower Rooms/Accessible Bathroom
Supplier: ABI Interiors

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Code: 10459
Finish: Brushed Copper

4.23 ABI INTERIORS ACCESSIBLE RESTROOM SIGN 120MM - BRUSHED COPPER 14986
Taps not related to and separate from sanitary fixtures:

Location: Changing Room
Supplier: ABI Interiors
Code: 14986
Finish: Brushed Copper

4.24 ABI INTERIORS MALE RESTROOM SIGN 140MM - BRUSHED COPPER 15001
Taps not related to and separate from sanitary fixtures:

Location: Changing Room
Supplier: ABI Interiors
Code: 15001
Finish: Brushed Copper

4.25 ABI INTERIORS FEMALE RESTROOM SIGN 140MM - BRUSHED COPPER 14996
Taps not related to and separate from sanitary fixtures:

Location: Changing Room
Supplier: ABI Interiors
Code: 14996
Finish: Brushed Copper

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7411M METALCRAFT ROOFING RAINWATER SPOUTING SYSTEMS

1 GENERAL

This section relates to **Metalcraft Roofing** rainwater disposal systems including gutters fascias and downpipes.

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
Gutter	In this section includes spouting

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
AS 1273	Unplasticised PVC (uPVC) downpipe and fittings for rainwater
AS/NZS 3500.3	Plumbing and drainage - Stormwater drainage
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Are available on the website or by contacting Metalcraft Roofing.

For technical assistance contact **Metalcraft Roofing**

Web: www.metalcraftroofing.co.nz

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years:	Failure of coating adhesion (manufacturer's standard warranty)
10 years:	Weatherproofing failure caused by material penetration as a result of corrosion (manufacturer's standard warranty)

- 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.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

3 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.

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Requirements

1.6 NO SUBSTITUTIONS

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

1.7 QUALIFICATIONS

Installers to be experienced competent gutter installers, familiar with the **MetalcraftRoofing** materials and the techniques specified.

1.8 INFORMATION FOR OPERATION AND MAINTENANCE

Provide one copy of all relevant **Metalcraft Roofing** maintenance information on completion of the roofing work.

Performance

1.9 TEST - NZBC E1/AS1

Test the completed rainwater disposal system with water to ensure gutters are laid to correct falls, that both spouting and downpipes are unobstructed and that no ponding occurs in gutters. Comply with NZBC E1/AS1.

1.10 TEST - AS/NZS 3500.3 & NZBC E1/AS2

Test the completed rainwater disposal system with water to ensure gutters are laid to correct falls, that both spouting and downpipes are unobstructed and that no ponding occurs in gutters. Comply with AS/NZS 3500.3 as modified by NZBC E1/AS2.

2 PRODUCTS

Materials

2.1 GUTTERS

Complete with matching brackets with fixing screws to suit the gutter / fascia. Refer to SELECTIONS for type.

2.2 DOWNPIPES - METAL

Metalcraft metal downpipes, circular or rectangular. Refer to SELECTIONS.

Components

2.3 DROPPERS

Steel or plastic droppers, sized to fit inside the downpipe.

2.4 DOMES

Wire mesh in round form with legs to clip inside the outlet opening to the downpipe.

2.5 GUTTER MESH

Flexible plastic mesh fitted into the gutter to the mesh manufacturer's requirements.

3 EXECUTION

Conditions

3.1 HANDLE AND STORE

Handle and store downpipes, spouting 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. Avoid exposure to sunlight if strippable film is still on the product.

3.2 SUBSTRATE

Check that fascia, barges or cladding are level and true to line and face and will allow work of the required standard without distortion to the product alignment. Do not proceed until they are up to standard.

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3.3 THERMAL MOVEMENT

Make adequate provision in the fixing and jointing of the spouting for thermal movement in the length of the spouting. Provide an expansion joint in spouting over 12 metres in length for steel gutter.

3.4 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.

Check compatibility of metals used for rainwater goods, against the materials being used for roofing and flashings.

Application - metal

3.5 INSTALL METAL GUTTER AND FASCIA

Establish minimum falls necessary (minimum 1:500) to outlets to prevent ponding and screw fix brackets true-to-line at 900mm centres maximum. In areas where snow fall is possible and or high wind areas, the centres should be reduced to 600mm. Lap spouting joints in direction of flow, a minimum of 40mm to seal between and over the top of joint and seal with silicone sealant and fix with rivets. Ensure the joint is fixed over its full girth. Cut out neatly for and fit the pre-formed downpipe dropper and rivet and seal around the joint. All installation to Metalcraft Roofing details and NZMRM CoP recommendations.

3.6 INSTALL METAL DOWNPIPES

Form downpipes complete with offsets and shoes as needed with all joints lapped and sealed as required. Screw fix with matching pipe clips to rigidly stand plumb to the wall, and discharging into the stormwater gully or pipe inlet. All installation to Metalcraft Roofing details and NZMRM CoP recommendations, section 5.7,Outlets & Downpipes.

3.7 INSTALL RAINWATER HEADS

Install using rivets where required to detail as shown on drawings. Ensure colour matched blind aluminium rivets are used when joining metal surfaces.

3.8 INSTALL OVERFLOWS

Install as close as practical to downpipe locations, at a height allowing water to discharge to the outside and not into the building.

3.9 INSTALL PROTECTION

Fit wire mesh domes to downpipe outlets and plastic mesh to spouting to the spouting manufacturer's requirements.

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.metalcraftroofing.co.nz
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4.1 METALCRAFT ROOFING HALF ROUND GUTTER SYSTEMS (TO MATCH EXISTING PROFILE)

Profile:	Half Round Gutter
Base material:	Steel
BMT:	0.55mm
Coating system:	COLORSTEEL® Maxam™
Colour:	Refer Exterior Finishes Schedule

4.2 METALCRAFT METAL DOWNPIPES

Profile:	Round
Size:	80mm
Material:	Steel
BMT:	0.55mm
Coating system:	COLORSTEEL® Maxam™
Colour:	Refer Exterior Finishes Schedule

4.3 DOWNPIPE CONNECTOR

Custom:	Metal downpipe connector for new downpipe to existing



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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:

- Tile waste kit

1.1 RELATED WORK

Refer to AIREY CONSULTANTS documentation for sanitary fixtures.

Refer to AIREY CONSULTANTS documentation 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.

1.6 NO SUBSTITUTIONS

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

1.7 PIPEWORK LAYOUTS

Plumber is responsible to ensure pipework layout will achieve compliance

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Compliance information

1.8 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

1.9 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 SHOWER WASTE KIT - FOR TILE INSTALLATION

Allproof tile waste kit comprised of the following:

- Tile grates - 18 options available
- Tile leak control flange - 80mm or 100mm standard, 50mm/90° outlet, 50mm and 65mm also available
- Riser - PVC pipe cut to suit depth required
- Gully trap
- 50mm outlet floor waste gully standard (with 80mm or 100mm riser), 65mm outlet floor waste gully (with 100mm riser) also available
- Spigot
- Construction Cap

Refer to SELECTIONS for options.

Components - grates

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.

2.3 KAITERI GRATE

Allproof Kaiteri grates with features as follows:

- Grates - round and round in square grate design
- Compatible with Leak Control Flange, Revolver and 100mm Cyclone
- Suits 80mm or 100mm outlets
- stainless steel standard and custom colour powder coating options

Refer to SELECTIONS for options.

2.4 INVISIDRAIN SS

Allproof Invisidrain with features as follows:

- Forms an edge to surrounding floor tiles, leaving a gap for water to flow through
- Plastic body with stainless steel edge
- Product options - 80mm and 100mm stainless steel
- Compatible with Leak Control Flange, Revolver and 100mm Cyclone

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- 2 metallic finishes (stainless steel standard) and custom colour powder coating options

Refer to SELECTIONS for options.

2.5 WAKATIPU

Allproof Wakatipu with features as follows:

- Linear grate design with stainless steel finish, 300mm long x 100mm wide
- 80mm outlet (only compatible with LC80)
- stainless steel standard and custom colour powder coating options

Refer to SELECTIONS for options.

2.6 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
- Product options - 80mm and 100mm pipe sizes

Refer to SELECTIONS for options.

Component - floor waste gully

2.7 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 - AS/NZS 3500.2

Carry out this work to AS/NZS 3500.2, as modified by NZBCG13/AS3, and complete all tests to AS/NZS 3500.2, section 15 Testing of Sanitary Plumbing and Sanitary Drainage Installations.

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.

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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.

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 SHOWER WASTE KIT - FOR TILE INSTALLATION

Location:	Showers
Manufacturer:	Allproof Industries
Grate:	Kaiteri Round in Square
Grate finish:	Stainless Steel
Flange size::	100 mm
Riser:	PVC pipe cut to suit depth required
Floor waste gully:	To suit
Product code:	KT100SRSS

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7701PC PDL & CLIPSAL ELECTRICAL

1 GENERAL

This section relates to the wiring for **Schneider Electric** domestic and small scale commercial installations, including:

- power
- lighting
- security system
- complete with componentry
- electrically-powered fittings

1.1 RELATED WORK

Refer to

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:

AFDD	Arc Fault Detection Device
ELV	extra low voltage
GLS	general lighting service
IP	international (ingress) protection classification
NUO	Network Utility Operator
PCB	printed circuit board
PIR	passive infrared
SIA	security integration architecture
TPS	tough plastic sheathed
TCF	Telecommunications Carriers' Forum

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
NZBC G4/AS1	Ventilation of buildings
NZBC G9/AS1	Electricity
AS/NZS 1125	Conductors in insulated electric cables and flexible cord
AS/NZS 2201.1	Intruder alarm systems - Client premises - Design, installation, commissioning and maintenance
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
AS/NZS 3008.1.2	Electrical installations - Selection of cables - Cables for alternating voltages up to and including 0.6/1 kV - Typical New Zealand installation conditions
AS/NZS 3100	Approval and test specification - general requirements for electrical equipment
AS/NZS 3112	Approval and test specification - Plugs and socket-outlets
AS/NZS 3133	Approval and test specification - Air-break switches
AS/NZS 3190	Approval and test specification - Residual current devices (current-operated earth - leakage devices)
AS/NZS 3439.3	Low - voltage switchgear and controlgear assemblies - Particular requirements for low - voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access for their use - Distribution boards

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NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential buildings
NZS 4961	Electric cables - Polymeric insulated - For distribution and service applications
AS/NZS 5000.2	Electric cables - Polymeric insulated - For working voltages up to and including 450/750 V
AS/NZS 60335.1	Household and similar electrical appliances - Safety - General requirements
AS/NZS 60695.11.5	Fire hazard testing - Test flames - Needle-flame test method - Apparatus, conformity test arrangement and guidance.
AS/NZS 61008.1	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) - General rules
AS/NZS 61009.1	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - General rules
AS/NZS 61439.3	AS/NZS 61439.3 Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO).
AS/NZS 11801.1	Information technology - Generic cabling for customer premises - General requirements (ISO/IEC 11801-1:2017, MOD)
PTC 225	Star-wiring boxes and small office/home office (SOHO) cabling installations

TCF Premises Wiring Cable Installers Guidelines for Telecommunication Services
Electricity (Safety) Regulations 2010 (Reprint as at 21 January 2019).

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.

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents related to this section are:

PDL	PDL Iconic Series
PDL	PDL Iconic Styl Series
PDL	PDL 600 series
PDL	PDL Iconic Essence Series
PDL	PDL Pro Series
PDL	Electrical Solutions Guide
PDL & Clipsal	Catalogue and Price Guide
Clipsal	Solis Series
Clipsal	Solis T Series

Manufacturer/supplier contact details

Company:	**Schneider Electric New Zealand Ltd**
Web:	www.pdl.co.nz www.clipsal.com www.schneider-electric.co.nz
Email:	sales@nz.schneider-electric.com
Telephone:	0800 741 303

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

1 year	Warranty applies to materials under normal environmental and use conditions against failure of materials and execution

Refer to SENZ standard terms and conditions of supply for further details.

- Provide this warranty on the manufacturer/supplier standard form.
- 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 COMPLY

Comply with the Electricity (Safety) Regulations (2010), AS/NZS 3000, AS/NZS 3008.1.2 and TCF Premises Wiring Cable Installers Guidelines for Telecommunication Services for listed and prescribed work and with the utility network operator requirements. Apply for the service connection. Arrange for the required inspections of listed work. Pay all fees.

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

Carry out work under the supervision of an electrical licensed supervisor.

1.8 QUALIFICATIONS WORKERS – LICENSED UNDER STATUTE

Workers and supervisors to be appropriately qualified to applicable legislative requirements.

Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.9 PDL SELECTIONS - FITTINGS AND HARDWARE

Confirm selections of all outlet fittings and hardware with the owner in writing before ordering.

1.10 SAFETY OF INSTALLATION - DESIGN BY ELECTRICIAN

Before installation work commences provide a Certified Design. The Certified Design is to comply with the Electricity (Safety) Regulations (2010), regulations 58. It must be signed by the designer of the installation.

1.11 ELECTRICAL CERTIFICATE OF COMPLIANCE

Supply a certificate of compliance (CoC) to the owner, and if required the NUO, as required by the Electricity (Safety) Regulations 2010, prior to connection.

- Arrange for the NUO to inspect before the meter installation, listed work inspection, polarity check and supply becoming live.
- Arrange for an inspector to inspect high-risk electrical work as required by Regulation 70.

1.12 ELECTRICAL SAFETY CERTIFICATE

Provide an Electrical Safety Certificate (ESC), as required by the Electricity (Safety) Regulations 2010, Reg 74A, to the owner and when required the BCA. To be provided no later than 20 working days after connection and prior to Practical Completion.

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

3.4 EARTHING CONDUCTIVE STRUCTURE & MATERIALS

Earth all at risk structural metalwork and conductive building materials to AS/NZS 3000, 5.4.6, and the Electricity (Safety) Regulations 2010.

If they form part of the building, this includes:

- Structural steel frames or members
- Light steel framing

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- Exposed conductive materials, like metal sink/tub or vanity benches etc, with attached electrical units or equipment

3.5 EQUIPOTENTIAL BONDING

Equipotential Bond extraneous conductive parts together and to the electrical installation earthing system to AS/NZS 3000, 5.6, and the Electricity (Safety) Regulations 2010 and the fitting manufacturer's requirements.

If they form part of the building, this includes:

- Conductive water piping (including tap etc) and exposed related connected conductive surfaces (like metal sink benches or metal cladding etc). Not required where isolated by non-conductors (plastic pipe etc) from the mass of earth.
- Other conductive piping (not earthed by other means) and exposed related connected conductive surfaces.
- Concrete reinforcing - for floor or wall forming part of a room with a shower or bath, or the shell and surround of a swimming/spa pool
- Built-in Swimming pool and spa pool - exposed conductive parts of electrical equipment, as well as exposed conductive, fixtures, fittings and pool structures within 1.25m of pool edge

3.6 MAIN EARTH

Provide a plastic toby box or uPVC tube to contain and protect the earth pin. Fix the connecting earth wiring closely and securely against wall surfaces.

3.7 ARC FAULT DETECTION DEVICE (AFDD)

To AS/NZS 3000 clause 2.9, AFDD on all final sub-circuits not exceeding 20A.

3.8 EARTH LEAKAGE PROTECTION

RCD protection installed to AS/NZS 3000.

3.9 RCD - RESIDENTIAL INSTALLATIONS

Install 30mA RCD protection at the switchboard for all final sub circuits to control outlets and lighting except for fixed or stationary cooking equipment, to AS/NZS 3000.

3.10 RCD-AFDD COMBINED - RESIDENTIAL INSTALLATIONS

Install a 30mA RCD - AFDD combined device (RCD Type II) at the switchboard for all final sub circuits not exceeding 20A, to control and protect outlets and lighting to AS/NZS 3000, (2018, 2.6 & 2.9). Protect over 20A to 32A final sub circuits with separate RCD and to AS/NZS 3000.

3.11 RCD - NON-RESIDENTIAL INSTALLATIONS

Install 30mA RCD Type II protection at the switchboard to suit location and use, to AS/NZS 3000.

3.12 RCD - AFDD COMBINED - NON-RESIDENTIAL INSTALLATIONS

Install a 30mA RCD - AFDD combined device (RCD Type II) at the switchboard for all final sub-circuits not exceeding 20A, to suit location and use, to AS/NZS 3000, (2018, 2.6 & 2.9). Protect over 20A to 32A final sub-circuits with separate RCD and to AS/NZS 3000.

3.13 HIGH RISK AREA INSTALLATIONS

Use fixed wired RCD protected socket outlets to 30mA or 10mA in areas that may represent increased risk of electric shock to the user:

- Areas frequented by infants (AS/NZS 3000 recommends 10mA)
- Wet areas: bathrooms, laundries, kitchens
- Near pools and water features
- Where intended for use with cleaning equipment
- Hand held tools subject to movement in use, i.e. workshops, garages

3.14 SET-OUT

Unless specifically detailed, the position of outlets and equipment shown on drawings is indicative of requirements. Study documents and site conditions to ensure no conflict with other services or features will arise. Resolve conflicts and discrepancies before proceeding with work affected. Confirm on site the exact location, disposition and mounting heights of all outlets, fittings, equipment, penetrations, and use of exposed wiring. Fix outlet items level, plumb and in line.

3.15 CABLING

Install wiring systems to AS/NZS 3000.

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Adhere to this standard at all times to all requirements.

Basic requirements or recommendations:
All cabling run concealed. No TPS cable laid directly in concrete. Locate holes in timber framing for the passage of cables at the centre line of the timber member. Install cable in conduits where required to pass through concrete or underground. In walls run cabling horizontally and vertically in straight lines. In ceilings either run cabling along ceiling framing or attached to catenary wires. Clip cabling to ceiling framing/catenary wires.

3.16 CABLING CIRCUITS

Install all circuits with the appropriately rated cable and circuit protection. Install with a maximum of 8 light switch units or 4 double or single switched socket units on any circuit. Minimum 2 lighting circuits per floor. Separate circuits for all electric heating appliances. Kitchen sockets to be on at least two different circuits.

3.17 WALL BOXES

Flush mounted in cavity construction and selected as appropriate to fit products to be mounted. Fix vertically mounted wall boxes to studs. Fix horizontally mounted switched socket outlet wall boxes to solid blocking or nogs. Fix switch panel wall boxes to solid blocking.

3.18 SWITCH AND SOCKET UNITS

Fit all switch units and socket units to the manufacturer requirements with heights and mounting directions as indicated in SELECTIONS.

3.19 SWITCH AND SOCKET UNITS - FOR PERSON WITH DISABILITIES

Fit all switch units and socket units to the manufacturer requirements with heights (& mounting direction) and location to NZBC G9/AS1 and SELECTIONS.

3.20 ISOLATING SWITCHES

Locate isolating switches in agreed positions when not specifically shown on the drawings.

3.21 LIGHT FITTINGS

Install light fittings in locations and at heights detailed, and in accordance with the fitting manufacturer requirements.

3.22 INSULATION & GENERAL CLEARANCES

Some electrical and mechanical services, and equipment may need to have a gap to insulation and some building elements. The gaps should be to the NZS 4246 based tables below or to the equipment manufacturers requirements if they require larger gaps. Smaller gaps to manufacturers requirements can be used for equipment specifically manufactured with heat shielding or similar (excludes light fittings).

Installed gap not to be more than 50mm bigger than the required gap.

The following tables are subject to:
- The requirements of NZS 4246 for insulation.
- The insulation is exposed to the source of heat or equipment etc.
- Insulation, has passed the needle flame test to AS/NZS 60695.11.5 and/or is non-combustible.
- Gaps to hot surfaces may have to be increased with non-compliant insulation and plastic/polymeric type insulation (EPS, XPS, PIR, etc), check with insulation manufacturer.
- Gaps to hot surfaces may be able to be reduced with non-combustible insulation, check with equipment manufacturer.
- "Secure insulation" if required means, glue, mechanical fix, or provide fixed barriers at gap edge of insulation to hold in place. Rigid or semi rigid insulation may only need a firm friction fit (secure loose pieces).
- Loose fill insulation will require fixed barriers to NZS 4246 to maintain gaps.

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3.23 LIGHT FITTINGS TO INSULATION

Type of fitting	Minimum insulation clearance	Comments
Recessed, marked NON-IC, or unmarked	100mm (increase if over 100W)	To NZS 4246. NON-IC fittings and new or old unmarked & unknown fittings, and/or insulation. Insulation to be secured.
Recessed, CA 80, CA 90, or CA 135.	Abut fittings	To NZS 4246. Do not cover the fittings.
Recessed, IC, IC-F, or IC-4.	Abut & cover fittings.	To NZS 4246. Ensure insulation complies.
Recessed, marked Do-Not-Cover	Manufacturer clearances	To NZS 4246. Do not cover the fittings.
Independent control gear	Place on top of insulation & 50mm from fittings	To NZS 4246. If not on top allow 50mm clearance to insulation, do not cover. Includes, transformers, ballasts & drivers etc.
Surface fittings not exposed to insulation	Nil	To NZS 4246. Where surface fittings are isolated from insulation by appropriate linings. Excludes high heat fittings.
Surface fittings & exposed insulation	200mm	To NZS 4246. This is exposed insulation to any part of the exposed fitting & bulb/tube (e.g. exposed light in an unlined basement). Insulation to be secured.

3.24 RECESSED LIGHT FITTINGS TO COMBUSTIBLE BUILDING ELEMENTS

Type of recessed fitting	Minimum building element clearance**	Comments
Marked NON-IC, or unmarked, ≤100W	100mm, vertical & horizontal	To AS/NZS 3000:2018
Marked NON-IC, or unmarked, >100W	200mm, vertical & horizontal	To AS/NZS 3000:2018
CA 80, CA 90 or CA 135	100mm, vertical & horizontal	To AS/NZS 3000:2018
IC, IC-F or IC-4	100mm, horizontal NA, vertical	To AS/NZS 3000:2018 To be NA vertical, fitting must be covered by insulation. If not covered use 100mm clearance.
Marked Do-Not-Cover	100mm, vertical & horizontal	To AS/NZS 3000:2018. Manufacturer clearances if greater than 100mm

**Combustible building elements exclude metal elements, but include timber framing or other timber based elements, and normal linings etc. Highly flammable materials & those likely to melt will need more clearance.

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3.25 INBUILT RECESSED HOT APPLIANCES TO INSULATION

Appliance	Minimum insulation clearance	Comments
Electrical heaters	Manufacturer clearances	To NZS 4246.
Electrical heaters	100mm	Manufacturer clearances not known. To NZS 4246. Clearance may be able to be reduced with non-combustible insulation. Insulation to be secured.
Heat producing appliances & equipment	Manufacturer clearances	To NZS 4246.
Heat producing appliances & equipment	50mm	Manufacturers clearances not known. To NZS 4246. Clearance may be able to be reduced with non-combustible insulation. Insulation to be secured.

Note - Appliances and equipment excludes cables, junction boxes, light switches & power sockets etc

3.26 EXTRACTS, VENTS & ROOF UNDERLAY TO INSULATION

Appliance	Minimum insulation clearance	Comments
Ducted fan motors	50mm	To NZS 4246. Includes ducted rangehoods, extractors etc. Applies to the motor unit and electrical enclosures (not the ducts).
Ducted fan ducts	Abut	To NZS 4246. Excludes motor unit and electrical enclosures.
Unducted fan motors usually discharging to ceiling space	200mm	To NZS 4246. Includes unducted, rangehoods, extractors etc, discharging into roof space. To prevent debris falling into motor. Clearance may be able to be reduced, by providing a fixed barrier around the vent.
Roofing material/underlay	25mm	To NZS 4246. Maintain clearance from underside of roofing or flexible roofing underlay, to prevent wicking.

3.27 ELECTRIC HOT WATER SYSTEM

For storage heaters, wire as a separate circuit through a wall-mounted isolating switch, with the cable from switch to element encased in flexible PVC conduit, clamp fixed at each end. Hot water cylinders, thermostats and 3000 watt element supplied and fitted as specified under the hot and cold water system section.

3.28 WALL HEATERS

Install to the heater manufacturer requirements, and to AS/NZS 3000 fitted neatly and without damage to surrounding finishes. Ensure control switches and thermostats are fitted to appliance, or otherwise connect to a control switch located adjacent to the heater and a remote thermostat.

3.29 CONNECT UNDERTILE HEATING

Run cabling to connect to under tile heating system to the manufacturer requirements in positions shown on the drawings. Install with control panel and associated equipment fitted neatly and without damage to surrounding finishes.

3.30 SURGE PROTECTION

Install surge protection devices to manufacturer requirements and in accordance with AS/NZS 3000. When fitting medium protection at the switchboard, protect the device by a dedicated MCB.

3.31 ELECTRIC POWERED FITTINGS AND EQUIPMENT

Install and wire fittings and equipment to individual fittings and equipment manufacturer requirements. Refer to the drawings for required layouts and locations for equipment. Refer to SELECTIONS for schedules of fittings.

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3.32 OUTDOOR/EXTERIOR SERVICES

Install all wiring systems in accordance with section 3 of AS/NZS 3000.

Adhere to this standard at all times to all requirements.

Basic requirements or recommendations:
Provide circuits and connections for exterior installations, including ELV 12/24 Volt path lighting and electronic irrigation systems. Refer to drawings for connection points. Where underground, ensure appropriate protection, such as thickness of sheathing, conduit, depth of cabling, and proximity to other services.

Use the appropriate rated fittings for power control and power supply. Weather protected switches to IP56. Install to manufacturer specifications using recommended fittings and sealants to maintain the products integrity.

Earth leakage protection to be provided for in areas where there is increased risk to human safety in the form of either RCDs at the distribution board, or socket outlet. RCDs are recommended for visible awareness of protection.

Refer to SELECTIONS.

Completion & Commissioning

3.33 COMPLETION MATTERS

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

- Leave installation operating correctly, with equipment clean and all lamps operational.

4 SELECTIONS

For further details on selections go to www.pdl.co.nz, www.clipsal.com, www.schneider-electric.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Materials

Interior outlets - PDL

4.1 PDL INTERIOR OUTLETS - ICONIC SERIES

Location:	refer to drawings
Switch / socket outlets	PDL Iconic Series
Coverplate colour:	TBC
Switch - Height to centre of unit:	1000mm above FFL
Socket - height to centre of unit:	TBC
Orientation:	Horizontal

Light fittings

4.2 PDL EXTERNAL LIGHT FITTINGS

Refer to Reflected Ceiling Plan A1.04 for exterior lighting.

4.3 INTERNAL LIGHT FITTINGS

Refer to Reflected Ceiling Plan A1.04 for interior lighting.

Miscellaneous electrical items

4.4 HEATING

This shall be a Design and Build contract arranged by the Principal

Electrical appliances

4.5 MECHANICAL EXTRACTS

This shall be a Design and Build contract arranged by the Principal

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