11 St Pauls Court, New Dwellings

Project Specification

11 Saint Pauls Court, Queenstown, Queenstown, New Zealand
Project Ref: J1110
Date: 01 October 2026



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

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1220 PROJECT

1 GENERAL

This general section describes the project including:

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

1.1 READ ALL SECTIONS TOGETHER

Read all general sections together with all other sections.

1.2 RESTRICTED BUILDING WORK

This project includes Restricted Building Work.

Design Construction Safety

1.3 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.

ITEM	COMMENT
Deep Excavation & Sloped Ground	

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

1.4 PRINCIPAL'S KNOWN SITE HAZARDS

Site hazards known to the principal are:

Deep Excavation & Sloped Ground

1.5 PRINCIPAL'S SITE HEALTH AND SAFETY PLAN

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

Site

1.6 SITE

The site consists of: Greenfield Sloped site

1.7 LEGAL DESCRIPTION

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

1.8 EXISTING SERVICES

The following are the network utility services:

Refer Site Plan

The services are also shown on the drawings.

1.9 SITE FEATURES

Refer Site Plan

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Site environment - Durability

1.10 EXPOSURE ZONE

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

The site zone is: D

Site environment - Wind

1.11 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 High (refer to NZS 3604, table 5.4)

Site environment - Seismic

1.12 EARTHQUAKE ZONE - NON SPECIFIC DESIGN

The zone is to NZS 3604, Section 5 Bracing design, 5.3 Earthquake bracing demand.

The earthquake zone is: 3

Archaeological discovery

1.13 REPORT FINDING ANY ANTIQUITIES AND ITEMS OF VALUE

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

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

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

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1232S1 EXPLANATION OF SCHEDULE SECTIONS

1 GENERAL

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

1.1 EXPLANATION OF SCHEDULE SECTIONS

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

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

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

1.2 SCHEDULE SECTIONS

The following Schedule sections are contained within the specification:

1235S1 Schedule of Shop Drawings
1237S1 Schedule of Warranties
1278SR Schedule Of Slip Resistance Testing



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1235 SHOP DRAWINGS

1 GENERAL

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

1.1 SCHEDULE SECTION

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

1.2 SHOP DRAWING FORMAT

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

1.3 PROGRAMME FOR SHOP DRAWINGS

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

1.4 COMMUNICATION WITH SHOP DRAWING DETAILER

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

1.5 CONTRACTOR COORDINATION OF SHOP DRAWINGS

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

1.6 COORDINATION WITH SITE MEASURE

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

1.7 SHOP DRAWING REVIEW

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

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

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

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

1.8 RESPONSIBILITY

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

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1.9 RESUBMISSION OF SHOP DRAWINGS

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

1.10 WORK MAY PROCEED

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

1.11 BIM MODEL

BIM (Building Information Model) is being used for the construction of the works. Refer to SELECTIONS for details of the BIM model and the information required to be included.

2 SELECTIONS

2.1 SHOP DRAWING FORMAT

Submit the shop drawings in the following format

	Format/Size
Electronic copy	PDF
CAD file	IFC & DWG

2.2 BIM (BUILDING INFORMATION MODEL) FORMAT

IFC

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1235S1 SCHEDULE OF SHOP DRAWINGS

1 GENERAL

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

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

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

Shop drawings

1.2 SHOP DRAWINGS

Refer to the following sections:

4521AR APL Residential Aluminium Windows & Doors

1.3 SHOP DRAWINGS - ADDITIONAL ITEMS

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

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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 NZIA SCC CONTRACT

Refer to the contract conditions for any requirement relating to the time for submission for warranties and guarantees. Submit all warranties to the architect no later than the date of the contractor's advice of achieving practical completion.

1.9 WARRANTIES - SUBMISSION NZS 3902 CONTRACT

Refer to NZS 3902 Housing, alterations and small buildings contract. Submit warranties to the owner no later than the time the builder gives Notice of final completion to the owner.

1.10 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.

1.11 GUARANTEES - SUBMISSION NZS 3915 CONTRACT

Refer to NZS 3915 Conditions of contract for building and civil engineering construction (where no person is appointed to act as engineer to the contract), clause 11.5 for requirements relating to the time for submission for guarantees. Submit all guarantees to the principal before or at the time of the issue of the provisional defects liability certificate, after the end of the defects liability period.

1.12 WARRANTIES/GUARANTEES - SUBMISSION NZS 3916 CONTRACT

Refer to NZS 3916 Conditions of contract for building and civil engineering – Design and construct, clauses 11.5 and 11.6 for requirements relating to the time for submission of warranties and guarantees respectively. Submit all warranties/guarantees to the engineer no later than the date that the contractor notifies that it believes the contract works qualify for practical completion.



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2 SELECTIONS

Project warranties / guarantees

Guarantees - Contractor - Master Build Services Ltd

2.1 MASTER BUILD SERVICES LTD - 10 YEAR MULTI-UNIT GUARANTEE

Provide a 10 Year Multi-Unit Guarantee, include all costs of the building in the contract price. Complete the guarantee application form, obtaining all required signatures (registered master builder and owner/s). Send the completed form to Master Build Services for approval, along with a copy of the building contract and architectural drawings for approval prior to any work commencing. Obtain written confirmation from Master Build Services and provide this to the owner along with the guarantee document. On completion of the building work complete the notice of practical completion form, obtain all required signatures (registered master builder and owner/s) and send the form to Master Build Services.

Weathertightness and watertightness warranty

2.2 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:

3114E	Expol Underslab Insulation
4161PC	Pro Clima Wall and Roof Underlays, Tapes & Accessories
4252VV	Vulcan Ultraclad Vertical Weatherboards
4311D	Dimond Profiled Metal Roofing
4521AR	APL Residential Aluminium Windows & Doors
4610AG	AGP Glazing Residential
4710PR	Premier Thermal & Acoustic Insulation
4855JG	Juralco Glass Balustrade Systems
5171GI	GIB Intertenancy Barrier Systems
5313GS	GIB Rondo Metal Ceiling Batten Systems For GIB Plasterboards
6211AW	Ardex Wall Tiling
6221A	ARDEX Floor Tiling Solutions
6311	Timber Strip, Block & Plank Flooring
6511	Carpeting
6700D	Dulux Painting General
7120	Hot & Cold Water System
7411D	Dimond Rainwater Spouting Systems
7701	Electrical Basic

1.3 PROJECT WARRANTIES

Refer to section 1237 WARRANTIES for project warranties.

1.4 WARRANTIES - ADDITIONAL ITEMS

Refer to separate documentation for warranties not contained within this specification.



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1278SR SCHEDULE OF SLIP RESISTANCE TESTING

1 GENERAL

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

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

This section includes schedules identifying work sections with:

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

1.1 ASSOCIATED SECTIONS

Read in conjunction with:

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

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

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

Documents

1.3 DOCUMENTS

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

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

Slip resistance - surfaces not requiring testing

1.4 SLIP RESISTANCE - SURFACES EXEMPT FROM TESTING

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

6221A ARDEX Floor Tiling Solutions

1.5 SLIP RESISTANCE - PREVIOUSLY TESTED SURFACE

There are no work section requirements.

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	R~	Obtain classification from the oil-wet inclining platform test method of AS 4586, Appendix D

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

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

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

Minimum test value required (COF)	Maximum gradient	Maximum slope in degrees
0.433	1 in 39	1.5°
0.444	1 in 29	2.0°
0.455	1 in 23	2.5°
0.466	1 in 20	3.0°
0.477	1 in 17	3.5°
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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2210 PREPARATION & GROUNDWORK

1 GENERAL

This section relates to the clearance, excavation and backfilling of the site area in preparation for:

- footings and floor slabs
- backfilling behind basement retaining walls

Documents

1.1 DOCUMENTS

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

NZS 3604	Timber-framed buildings
WorkSafe	Good Practice Guidelines - Excavation Safety

1.2 SITE SAFETY

Provide adequate support for all excavations. Cover holes and fence off open trenches and banks.

1.3 ARCHAEOLOGICAL DISCOVERY

If fossils, antiquities and other items of value are found refer to the general section 1220 PROJECT for actions to be taken with archaeological discovery.

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2 PRODUCTS

2.1 EXCAVATED CLEAN FILL

Clean, free of contamination, mineral soil from other formations in the excavation which may be selected and approved as suitable for filling by having grading and moisture content properties that will allow recompaction to 95% of maximum density.

2.2 VOLCANIC TUFF FILL

Scoriaceous tuff of variable grading excluding excessive silt or clay material, capable of being placed and compacted as specified.

2.3 ROCK FILL

Hard material comprising rock, broken stone, hard brick, concrete, run of pit scoria, or other comparable inert material capable of being placed and compacted as specified.

2.4 SAND FILL

Clean sand of such grading in particle size to achieve mechanical compaction to 90% maximum density.

2.5 HARD FILL

Scoria or crushed rock to GAP (General All Passing) 40 grading.

2.6 GRANULAR FILL

Approved screened crushed gravel or scoria, graded in size from 20mm to 7mm, clean. When tested with a standard sieve of 4.75 opening no material is to pass.

2.7 DRESSING COURSE

Scoria to GAP 20 grading, or "dirty footpath scoria", or equivalent "all in" graded crushed metal aggregate.

2.8 FREE-DRAINING AGGREGATE

Scoria or crushed gravel graded 50 to 14 clean.

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3 EXECUTION

3.1 WASHOUT BAY FOR TRUCK

Provide a designated area for trucks to be washed down to avoid mud and dirt being carried off site.

3.2 EXCAVATION GENERALLY

Carry out excavation, using plant suitable for the purpose, to the guidelines set by the WorkSafe, Good Practice Guidelines - Excavation Safety.

3.3 BURNING OF MATERIALS

Burning of materials is not permitted on site.

3.4 PROTECT EXISTING WORK

Protect from damage existing buildings, structures, roads, paving and services nominated on the drawings as being retained.

3.5 EROSION CONTROL

Ensure measures are in place to contain silt dislodged as a result of water infiltration and to prevent it being carried off site with stormwater.

3.6 SURFACE PREPARATION

Comply with NZS 3604, section 3.5, **Site preparation**. Remove all turf, vegetation, trees, topsoil, stumps, uncontrolled fill and rubbish from the area to be built on.

3.7 STOCKPILE TOPSOIL

Stockpile excavated topsoil on site where directed. Keep separate from other excavated materials. Spread and level where directed before completion of the works.

3.8 SHORING AND UNDERPINNING

Carry out shoring and underpinning shown on the drawings and as necessary to prevent subsidence of adjoining public or private property and to ensure the safety of the public and site personnel. Maintain protection throughout the progress of the works, or until foundations and subgrade structures have been completed and the stability of adjoining public and private property secured.

3.9 GENERAL EXCAVATION

Trim ground to required profiles, batters, falls and levels. Remove loose material. Protect cut faces from collapse. Keep excavations free from water.

3.10 ROCK EXCAVATION

If rock is found at any level above the underside of the structural foundations, or above required base levels for site service trenches, immediately notify the owner. Obtain written instructions from the owner on the proposed approach to rock excavation, or consequent alterations to subgrade construction. Confirm any changes with the territorial authority.

3.11 FOUNDATION EXCAVATION

Take foundation excavations to depths shown. Keep trenches plumb and straight, bottoms level and free of soft spots, stepped as detailed and clean and free of water.

3.12 INADEQUATE BEARING

If localised bearing is not to NZS 3604, 3.1.2 **Foundations** and 3.1.3 **Determination of good ground**, then excavate further and backfill with material as follows:

- Below slabs on grade: Hardfill compacted in 150mm layers
- Below footings: 10 MPa concrete

If excavation exceeds the required depths, backfill and compact to the correct level with material as listed.
Confirm any changes with the territorial authority.
For inadequate bearing or over excavation of service trenches, use hardfill compacted in 150mm layers.

3.13 STANDARD OF COMPACTION

Place fill in layers of not more than 150mm and compact to achieve 95% of maximum dry density. For granular fill material, the fill shall be compacted to 80% of saturated dry density.

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3.14 GRANULAR BASE FOR SLABS

To conform to NZS 3604, section 7.5.3, **Granular base**. Consolidate with a vibrating roller. Blind the surface with 20mm of coarse sand or sand/cement and roll ready to receive a damp-proof membrane.

3.15 GENERAL BACKFILLING

Obtain written confirmation from the owner before using any excavated material. Compact approved backfilling in 150mm layers with the last 200mm in clean topsoil, lightly compacted and neatly finished off.

3.16 RETAINING WALLS

Backfill behind retaining walls with free draining granular material and compact in 200mm layers. Ensure any tanking membranes, protection sheets, drain coil and damp-proofing are not damaged.

3.17 SURPLUS MATERIAL

Remove surplus and excavated material from the site.



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3114E EXPOL UNDERSLAB INSULATION

1 GENERAL

This section relates to the supply and installation of Expol insulation foam boards for concrete slabs on ground.

It includes:

- EPS and XPS under slab insulation foam boards
- XPS slab edge insulation foam boards

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:

DPM	Damp proof membrane
EPS	Expanded polystyrene
XPS	Extruded polystyrene

Documents

1.2 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 1366.3	Rigid cellular plastic sheets for thermal insulation - Rigid cellular polystyrene - Moulded (RC/PS - M)
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 under slab / slab edge insulation brochures
Expol technical product guide
Expol technical data sheets
Expol ThermaSlab edge installation instructions
Expol BPIR

Company	Expol Ltd
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:

20 years	For EPS insulation products
15 years	For XPS insulation products

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

Refer to the general section 1237 WARRANTIES for additional requirements.

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1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 year For installation

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

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

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

2 PRODUCTS

Materials - under slab insulation

2.1 EXPOL SLABX200

Expol SlabX200, a 200kPa rated EPS under slab insulation sheets to AS 1366.3 and AS/NZS 4859.1. Available in 2400mm x 1200mm and in a range of thicknesses. 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 PROTECT

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

3.4 PRE-INSTALLATION REQUIREMENTS

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

Installation/application

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.6 INSTALLATION - GENERAL

Install under slab insulation to NZBC H1/AS1-AS2 and Expol Ltd installation requirements. Also install to NZS 4246 for all housing and buildings up to 300m².

3.7 INSTALL UNDERSLAB INSULATION

Install the polystyrene sheets once the polythene DPM has been laid. Place the polystyrene sheets on top of the polythene DPM and butt together. Do not place the polystyrene under any footings or slab thickenings. Cut holes in the polystyrene with a sharp knife to accommodate any services. Lay reinforcing steel mesh over the polystyrene on mesh chairs

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

Materials - under slab insulation

4.1 EXPOL SLABX200

Location:	Refer Details & Plans
Brand:	Expol SlabX200
Size:	2400mm x 1200mm
Thickness:	50
Compressive resistance at 10%:	200kPa
R value:	1.5

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3155 RAFT FLOOR SYSTEM

1 GENERAL

This section relates to a raft floor system, a non specific design reinforced concrete waffle raft floor slab-on-ground.

1.1 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:

ACRS	Australian Certification Authority for Reinforcing Steels - An independent certification scheme for reinforcing steel and structural steel, by product and manufacturer/processor. Certifies compliance with Australia/New Zealand Standards. ACRS Web site - www.steelcertification.com

1.2 DOCUMENTS

Documents referred to in this section are:

NZBC B1/AS1	Structural provisions for buildings
NZBC B1/VM1	Structural design of buildings
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
NZS 3104	Specification for concrete production
NZS 3109	Concrete construction
NZS 3114	Specification for concrete surface finishes
NZS 3604	Timber-framed buildings
NZS 3631	New Zealand timber grading rules
NZS 4229	Concrete masonry buildings not requiring specific engineering design
AS/NZS 4671	Steel reinforcing materials

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

Tradespeople to be competent, experienced and familiar with the raft floor system materials and techniques specified.

1.4 STEEL REINFORCING COMPLIANCE

Steel reinforcing materials for concrete to AS/NZS 4671. Steel to be manufactured in New Zealand, or by an overseas manufacturer holding a current valid (or equivalent) NZ S Mark or ACRS certificate for that type of steel. Confirm compliance and provide evidence if requested.

1.5 QUALITY RECORDS

Keep accurate records relating to strength and quality of materials used during construction. Include records of workmanship during construction and photographs of as-built details. Make the information available to the Building Consent Authority inspector on request.

Performance

1.6 INSPECTION NOTIFICATION REQUIREMENTS

Refer Structural PS1

1.7 INSPECTIONS BY CONSTRUCTION REVIEWER

Refer Structural PS1

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1.8 INSPECTIONS BY BUILDING CONSENT AUTHORITY
Refer Consent Conditions

2 PRODUCTS

Materials

2.1 BLINDING
50mm maximum compacted GAP 7.

2.2 TIMBER FORMWORK
No. 2 framing and dressing or merchantable grade radiata pine boards to NZS 3631.

2.3 DAMP-PROOF MEMBRANE
0.25mm minimum polyethylene to NZS 3604: clause 7.5.4, Damp-proof membrane (DPM). Refer to SELECTIONS.

2.4 POLYSTYRENE PODS
Proprietary purpose made polystyrene pods.

2.5 REINFORCEMENT
Bars to AS/NZS 4671. Grade 500E deformed, other than for ties, stirrups and spirals, unless shown otherwise on the drawings.

2.6 INTERNAL CORNER REINFORCEMENT
Minimum 2 x D10 bars Grade 300E to AS/NZS 4671.

2.7 MESH
Welded reinforcing mesh to AS/NZS 4671, generally, Class E, minimum to NZBC B1/AS1 - Grade 500E, 2.27kg/m2 (1.14kg/m2 in each direction). Minimum SE62 500E mesh or the equivalent.

2.8 TYING WIRE
Mild drawn steel wire not less than 1.2mm diameter.

2.9 CONCRETE - RAFT APPLICATIONS
20 MPa 100mm slump mix in either 13mm or 19mm nominal aggregate size.

Components

2.10 SPACERS
Proprietary spacers. Refer to SELECTIONS for size.

3 EXECUTION

Conditions

3.1 STORAGE
Take delivery of and accept all materials and accessories dry and undamaged. Store on timber fillets on hard ground protected from weather, contamination and damage in a secure area clear of any building operation.

Handle and store reinforcing steel and accessories without damage or contamination.
Ensure reinforcement is clean and remains clean so that at the time of placing concrete it is free of all loose mill scale, loose rust and any other contamination that may reduce bonding capacity. Store steel fabric flat.

3.2 HANDLING
Avoid distribution and contact with damaging substances. Do not drag sheets across each other and other materials. Protect edges and surface finishes from damage.

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Application - raft floor system

3.3 SITE CLEARANCE

Clear the slab area of any vegetation and topsoil down to the subgrade level.

3.4 BUILDING PLATFORM

Create a building platform to a level surface approximately 330mm below finished floor level. Cut and/or fill sloping sites. Confirm finished floor level.

3.5 POST-CUT INSPECTION

Inspect and confirm that the soil conditions are as anticipated by the geotechnical investigation and report and conform to the requirements of the raft system supplier manual.

3.6 TEMPORARY BUILDING PLATFORM DRAINAGE

Construct suitable drainage to keep excessive ground water off the building platform during and after construction as required.

3.7 HARDFILL

Place hardfill and ensure it is spread and compacted with mechanical compaction.

3.8 UNDERGROUND SERVICES

Ensure underfloor services are installed in the subsoil or hardfill in locations as shown on the drawings and according to the raft floor system manufacturer's requirements.

3.9 BLINDING LAYER

Spread GAP 7 blinding layer to a minimum 500mm past the outside edge of the slab, compact to a level layer no greater than 50mm thick and no higher than 305mm below finished floor level.

3.10 FORMWORK

Construct formwork as required, well braced and tied to remain in position, straight and plumb during construction. Ensure formwork will provide for the topping depth, including rebates and the required concrete finish.

3.11 INSTALL DAMP-PROOF MEMBRANE

Apply DPM to the prepared basecourse extending to the outside of all edge beams or fold and staple up the inside of the formwork. Overlap all joints in the DPM sheets a minimum 150mm. Tape laps and penetrations with 50mm wide pressure sensitive plastic tape. Ensure DPM is not damaged during the construction process. Repair all damage to DPM before proceeding with following procedures.

3.12 PLACE POLYSTYRENE PODS

Place polystyrene pods in a regular waffle pattern using the spacers in the specified grid pattern to fit the floor plan. Cut pods on site with a saw or suitable hot wire as required. Cut holes for services and trim around piles as required on site.

3.13 INSTALL SPACERS

Install spacers and locations to the raft floor system manufacturer's requirements.

Form standard ribs between pods using 100mm spacers. Place the spacers at a minimum of one spacer along each edge of each pod or part pod. The ribs in both directions form a waffle pattern throughout the slab.

Form the edge beam using 300mm spacers. Place the spacers at 1200mm centres maximum along the perimeter of the slab at least and one spacer per pod or part pod.

Form ribs to support load bearing walls using 300mm spacers. Place the spacers at a minimum of one spacer along the edge of each pod or part pod.

3.14 PLACE REINFORCING STEEL: RIB STEEL

Place rib reinforcing steel in the bottom of the internal ribs and supported in the correct position by spacers. Lap all steel 480mm minimum, and hook all plain bars. At the junction with the edge beam, each rib steel bar shall sit on top of the edge beam bars and extend to the outermost bar. Allow for 75mm cover to the edge of the beam. Place 1 x H12 bar in each 100mm wide rib and 2 x H12 bars in each 300mm wide rib.



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3.15 PLACE REINFORCING STEEL: EDGE BEAM STEEL

Place the two edge beam reinforcing bars in the bottom of the edge beam and supported in the correct position by the spacers. Tie one edge beam bar below the mesh at the perimeter of the area covered by the polystyrene pods. Lap all steel 480mm minimum, and hook all plain bars. At corners, the inner bottom bars and the top bars cross each other and extend to 75mm from the outside face of the edge beam. Tie these bars together where they cross. Tying of edge beam steel is only required at corners.

3.16 PLACE REINFORCING STEEL: RE-ENTRANT CORNER STEEL

Place two D10 bars, 1200mm in length across the corner. Tie to the top of the mesh at re-entrant corners at 200mm centres with 50mm side cover from the internal corner.

Install specified steel to raft floor system manufacturer's requirements. Ensure specified minimum cover requirements are maintained.

3.17 PLACE REINFORCING MESH AND CHAIRS

Place reinforcing mesh over the pods and support on the mesh chairs spaced at 1200mm centres minimum, with two mesh chairs minimum placed per pod and with one mesh chair minimum per part pod.

3.18 MESH LAPS

Welded reinforcing mesh to be lapped and tied, such that the outermost wires overlap by the greater of:

- the spacing of the cross wires plus 50mm
- 150mm or
- manufacturer's requirements

Do not count bar extensions beyond the outermost cross wire.

3.19 FORM SLAB AND OPENING REBATES

Form rebates, as detailed on drawings.

Form a minimum 50mm rebate in slab for masonry veneer construction with a width dependent on the veneer width, cavity width and overhang. Waterproof the rebate with a bituminous sealer on both the vertical and horizontal faces.

3.20 STARTERS FOR MASONRY WALL CONSTRUCTION

Install wall starter bars in the correct position for the masonry block series being used to NZS 4229.

3.21 TOPPING SLAB DEPTH

85mm minimum plus additional cover as required for infloor heating.

3.22 PRE-PLACEMENT INSPECTION

Arrange for excavations, formwork and reinforcement to be inspected and passed by the Building Consent Authority.

3.23 EQUIPOTENTIAL BONDING REINFORCING

Co-ordinate with electrician to provide for equipotential bonding of reinforcing as required by AS/NZS 3000, 5.6 Equipotential Bonding, before concrete placement.

3.24 CONCRETE PLACEMENT AND COMPACTION

Ensure the rib and edge beam canals are clean, free of debris. Pour the floor in a single pour ensuring that the pods remain in position during placing. Pour concrete onto the top of each pod prior to filling the ribs around the pod to help prevent them from floating and lifting.

Compact concrete using a suitable poker vibrator for the ribs and ground beams and into all corners of the formwork. Screed as required. Confirm levels with a laser level.

3.25 CONCRETE FINISHING

Float and trowel to provide a U3 finish to NZS 3114: table 2, Classes of floor, exterior pavement and invert finishes.

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3.26 CONCRETE CURING

Curing of the concrete slab must take place immediately after finishing the concrete to NZS 3109 by one of the following curing methods:

- ponding or continuous sprinkling of water
- placing a wet covering or plastic membrane over the slab
- the use of liquid membrane curing compounds

3.27 SHRINKAGE CONTROL JOINTS

Cut shrinkage control joints as shown on the plans after hardening to a minimum depth of 25mm within 24 hours in summer or 48 hours in winter.

Where shrinkage control joints have not been shown on the plans, position the shrinkage control joints to coincide with major changes in the floor plan. Agree position of shrinkage control joints with the designer.

Bay dimensions formed by the shrinkage control joints to be limited to a maximum ratio of length to width of 2 to 1 with a maximum dimension of 6 metres. Place the shrinkage control joints over the 100mm wide internal ribs wherever possible. Where a shrinkage control joint runs along the line of a 300mm wide loadbearing rib, locate the cut directly above one edge of the 300mm rib. Do not place supplementary reinforcing bars (including re-entrant corner steel) across any shrinkage control joints.

3.28 CLEAN OUT SHRINKAGE CONTROL JOINTS

Clean out control joints. If required fill with suitable flexible sealant.

Finishing

3.29 STRIKE FORMWORK

Strike formwork at least 12 hours after the slab has been finished without damaging or overloading structure.

3.30 SURFACE DEFECTS

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

Completion

3.31 LEAVE

Leave work to the standard required by following procedures.

3.32 CLEAN UP

Clean up surrounding areas following completion of the concrete placement.

3.33 REMOVE

Remove debris, unused materials and elements from the site.

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4 SELECTIONS

4.1 DAMP-PROOF MEMBRANE

Type: Min 100um to 3604

4.2 POLYSTYRENE PODS

Brand: TBC
Size: 1100mm x 1100mm x 230mm

4.3 SPACERS

Brand: By Suppplier
Size: Refer Structural

4.4 CONCRETE SURFACE FINISH

Location: Refer Plans
Finish class: U3 (interior)

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3320 CONCRETE MASONRY

1 GENERAL

This section relates to the supply and installation of hollow concrete masonry to NZS 4229, as modified by NZBC E2/AS3, including;

- concrete masonry, mortar, reinforcement and grouting
- self insulating concrete masonry

1.1 RELATED WORK

Refer to 2361 STRIP FOOTINGS for simple strip footings.

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:

ACRS	Australian Certification Authority for Reinforcing Steels - An independent certification scheme for reinforcing steel and structural steel, by product and manufacturer/processor. Certifies compliance with Australia/New Zealand Standards. ACRS Web site - www.steelcertification.com

1.3 DOCUMENTS

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

NZBC B1/AS1	Structural provisions for buildings
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZBC E2/AS3	External moisture provisions for concrete and concrete masonry buildings
AS/NZS 2699	Built-in components for masonry
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
NZS 3103	Sands for mortars and plasters
NZS 3109	Concrete construction
NZS 3121	Water and aggregate for concrete
NZS 3604	Timber-framed buildings
NZS 4210	Masonry construction: Materials and workmanship
NZS 4229	Concrete masonry buildings not requiring specific engineering design
NZS 4230	Design of reinforced concrete masonry structures
AS/NZS 4455.1	Masonry units, pavers, flags, and segmental retaining wall units - Masonry units
AS/NZS 4671	Steel reinforcing materials
AS/NZS 4858	Wet area membranes
CCANZ CP 01	Code of practice for weathertight concrete and concrete masonry construction
NZCMM	NZ Concrete Masonry Manual section 6.1 Masonry Retaining Walls

Requirements

1.4 QUALIFICATIONS – INDUSTRY QUALIFICATION REQUIREMENTS

Work to be carried out or under supervision of a Licensed Building Practitioner (LBP) with the relevant license class. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

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1.5 CONSTRUCTION CONTROL

Supervise masonry construction to NZS 4230: table 3.1, Observation type B, admissible use and nominal strengths. Keep records of materials to NZS 4210: 2.4.2.

1.6 CONSTRUCTION OBSERVATION BY ENGINEER

Inspections shall confirm compliance with the design and the required standards of construction.

Obtain from the engineer Producer Statements required relating to the masonry construction. Where required as a condition of the building consent, advise the engineer when inspections are required.

1.7 STEEL REINFORCING COMPLIANCE

Steel reinforcing materials for concrete to AS/NZS 4671. Steel to be manufactured in New Zealand, or by an overseas manufacturer holding a current valid (or equivalent) NZ S Mark or ACRS certificate for that type of steel. Confirm compliance and provide evidence if requested.

1.8 TESTS

Carry out all required tests in accordance with NZS 4210: appendix 2A, Compressive strength tests for mortar and grout.

1.9 QUALITY RECORDS

Keep accurate records relating to strength and quality of materials used in the construction, and make the information available to the Building Consent Authority inspector on request.

Do not place grout until all blockwork and reinforcing have been inspected and passed by the Building Consent Authority.
The registered mason is to certify in writing that the masonry observation and work has been carried out in accordance with the relevant NZ Standards. Provide a Producer Statement - Construction (PS3).

Performance

1.10 DURABILITY

To NZS 4210, Table 2.E1 - **Masonry durability requirements**. Refer to SELECTIONS.

EXPOSURE	**DURABILITY REQUIREMENT**		
NZS 3604 ZONES figure 4.2	MORTAR (Note 1)	BUILT IN COMPONENTS (Note 2)	MINIMUM COVER REINFORCEMENT (Note 3)
Zone D	M4	R4	30 (60)mm
Zone C	M4	R3	20 (50)mm
Zone B	M3	R3	15 (45)mm
Closed interiors	M2	R1	5 (35)mm
Walls against earth	M4	R4	30 (60)mm
Geothermal hotspots	M4	R5	Specific engineering design
Zone E (NZBC E2/AS1)	M4	R4	30 (60)mm

Notes

- 1. Mortar mixes to NZS 4210, 2.2.2.1.
- 2. Classifications to the three parts of AS/NZS 2699, R1 is light to heavy galvanised, R3 is heavy hot-dip galvanised, R4 is 316 stainless steel, R5 specific performance.
- 3. Cover is measured to NZS 4210 from the inside face of the block cell (or in brackets to the outside face of the block, assuming 30mm shell thickness).

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2 PRODUCTS

2.1 MASONRY UNITS

To AS/NZS 4455.1.

2.2 REINFORCEMENT

Grade 500E to AS/NZS 4671 deformed mild steel except for ties in plain round mild steel and as detailed.
Refer to the Concrete section for reinforcing and mesh for slabs.

2.3 MORTAR

Sand to NZS 3103. Chloride levels to not exceed 0.04% by dry weight of sand. Mortar to NZS 4210: section 2.2, Mortar. Compressive strength minimum 12.5 MPa at 28 days

2.4 GROUT

To NZS 4210: section 2.3, Grout, with minimum compressive strength of 17.5 MPa.

2.5 WATER

To NZS 3121. Water from a territorial authority/NUO water supply is acceptable.

Accessories

2.6 WATERPROOFING FOR EXTERIOR OPENINGS

Unreinforced wet area membrane to AS/NZS 4858 for waterproofing around openings for, windows, doors, meters and other services openings, at or above floor level, also parapets and ends of masonry walls abutting other claddings, to CCANZ CP 01. Refer to SELECTIONS.

Do not use bituminous coatings.



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3 EXECUTION

3.1 MASONRY CONSTRUCTION GENERALLY

To NZS 4210, NZS 4229 as modified by NZBC E2/AS3 (CCANZ CP 01).

3.2 STORAGE

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

3.3 MOISTURE CONTENT

Ensure masonry units are air dry prior to laying.

3.4 CHECK BASE CONCRETE

Ensure the base concrete is true to line and level, requiring a base mortar bed of 10mm (minimum) to 20mm (maximum). Ensure that all laitance, loose aggregate, or anything preventing bond is removed prior to laying masonry units.

3.5 STARTER POSITIONS

Before commencing laying masonry units, check the location of starter reinforcement by measure or by a dry trial lay up of the first course. Do not correct misplacement by cranking bars. Where misplacement exceeds the location tolerance, obtain written direction before proceeding.

3.6 REINFORCEMENT

Reinforcement to NZS 4229 and NZS 4210: 2.6, **Reinforcing details**.
Cut and bend bars using proper bending tools to avoid notching and to the requirements of NZS 3109. Do not rebend bars. Where rebending is approved, use a purpose built tool, proper preparation and preheating.

3.7 REINFORCEMENT LAPS

Tie all lapping bars to each other.

Minimum wall reinforcing laps schedule

BAR TYPE	LAP LENGTH
Deformed	40 diameters
Plain round (with hooks)	80 diameters

For shrinkage control joint reinforcing refer to clause VERTICAL CONTROL JOINTS.

3.8 COVER

Cover to NZS 4210, Table 2.E1 - **Masonry durability requirements**, refer to DURABILITY clause in SELECTIONS.

3.9 EQUIPOTENTIAL BONDING REINFORCING

Co-ordinate with electrician to provide for equipotential bonding of reinforcing as required by AS/NZS 3000, 5.6 Equipotential Bonding, before concrete placement.

3.10 TOLERANCES

Construct within the tolerances set out in NZS 4210: clause 2.6.5, **Tolerances**, and clause 2.7.1, **General**. Lay masonry units with bedding of consistent thickness throughout.
Reinforcement to NZS 3109: 3.9 **Tolerances for reinforcement**.

3.11 PROTECTION

Protect fair-faced masonry walls, keeping them clear of mortar droppings, grout splashes, or stains of any kind.

3.12 LAY MASONRY UNITS

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Ensure consistent, fully filled and tooled joints. Where walls are reinforced, prevent mortar droppings from entering the cells to be grouted. Provide clean out holes at base of wall, unless "low lift" (NZS 4210) grouting is used. Ensure reinforcement is accurately placed and tied. Lay in regular stretcher bond with all necessary special units and sill units. Cut masonry, if necessary, true and square without chipping.

3.13 MASONRY UNITS JOINTS

Not exceeding 10mm thick, or less than 8mm when the units are bedded in. Joints tooled concave, unless detailed otherwise.

3.14 VERTICAL CONTROL JOINTS

To NZS 4229 12.1 **Shrinkage control joints**.
Locate at major changes of wall height or thickness, at openings, at ground slab control joints, and at not more than 6m centres, or, as shown on the drawings. Where reinforcement passes through a control joint, provide for breaking bond using methods detailed on NZS 4229 fig. 12.2, **Control joint detail...**, unless specifically detailed otherwise.

3.15 BRACING

Provide sufficient temporary lateral bracing to ensure stability until the final supporting construction is in place.

3.16 PRE-GROUTING INSPECTION

Inspect walls prior to grouting. Ensure cells are clean and reinforcement is correctly placed. Where "high lift" (to NZS 4210) grouting is used, seal the clean out holes and brace to prevent blow outs.

3.17 GROUTING OF CELLS

Only grout masonry cells in the following locations:

- below finished grades
- in retaining walls
- where fixing devices occur
- all other cells containing reinforcing.

3.18 GROUT CELLS

Grout all masonry unit cells.

3.19 GROUTING PROCEDURE

Use procedures set out in NZS 4210. Methods acceptable on this project are:

- high lift grouting with expansive admixture
- high lift grouting without expansive admixtures
- low lift grouting.

3.20 CONSTRUCTION JOINTS

Form and treat construction joints between grout pours and between masonry walls and hardened concrete work to ensure bonding occurs. Comply with NZS 4210: 2.16, **Horizontal construction joints**.

3.21 MORTAR-IN COMPONENTS

Mortar-in components such as sills, copings, lintels, and steps, as work proceeds.

3.22 BUILD-IN

Build-in plugs, bolts, ties, metal flashings, dowels, fastenings and fixings as required by all trades and as shown on the drawings.

3.23 PROGRESSIVE CLEANING

Clean off mortar splashes and grout spills as they occur, making good any damage at the same time.

3.24 WATERPROOFING EXTERIOR OPENINGS

Apply waterproofing to the exposed face of openings for, windows, doors, meters etc, also if necessary the top of parapets/balustrades and ends of masonry walls abutting other claddings. To CCANZ CP 01, waterproofing manufacturer's requirements and as detailed.

Provide temporary protection from direct sunlight.

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3.25 FINAL CLEANING

Clean down masonry work and remove waste material from adjoining surfaces and floors at completion.

3.26 REMOVE

Remove from the site materials not used.

4 SELECTIONS

4.1 DURABILITY - PROJECT REQUIREMENTS

Refer to clause DURABILITY.

Location:	Lower Level
Exposure Zone:	B
Mortar mix:	Refer Structural
Components:	Refer Structural
Rebar cover:	Refer Structural

4.2 MASONRY UNITS

Brand:	Refer Structural
Width:	Refer Structural
Bond:	stretcher

4.3 GROUT

Design strength:	17.5 MPa at 28 days
Aggregate size:	13.2mm maximum

Note: if expansive agents are used the minimum strength must be 20 MPa or the design strength whichever is greater.

4.4 MORTAR JOINTS

Location:	Refer Structural
Joint profile:	Concave
Mortar colour:	

4.5 WATERPROOFING FOR EXTERNAL OPENINGS

Location:	All Openings
Brand/name:	Specialized Tankit Waterproofng
Type:	Quick curing elastomeric unreinforced waterproofing membrane to AS/NZS 4858

4.6 WEATHERTIGHTNESS SYSTEM

Specialized Tankit Waterproofing to Full Extents of Blockwork.

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3820 CARPENTRY

1 GENERAL

This section relates to the supply and erection of timber framing, as a framed structure, or as partitioning. It includes prefabricated timber and engineered wood.

1.1 RELATED WORK

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

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

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

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 1328.1	Glued laminated structural timber - Performance requirements and minimum production requirements
AS/NZS 1604.1	Preservative-treated wood-based products - Part 1: Products and treatment
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 3640	Chemical preservation of round and sawn timber
AS/NZS 4357.0	Structural laminated veneer lumber - Specification
FTMA CoP	Frame and Truss Manufacturers Association Code of Practice

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

1.4 QUALIFICATIONS

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

1.5 DIMENSIONS

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

2 PRODUCTS

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.

2.2 LAMINATED TIMBER

Radiata pine laminations to AS/NZS 1328.1; treated as required by NZS 3602, NZBC B2/AS1, to the requirements of NZBC B2/AS1, AS/NZS 1604.1, NZS 3640, with special attention to Appendix B "Specification advisory notes". Supply weather resistant sealed.

2.3 ENGINEERED WOOD

LVL members to AS/NZS 4357.0, to required sizes and lengths and the manufacturer design properties.

Treatment to NZS 3640 and AS/NZS 1604.1.

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2.4 TIMBER TRUSSES

To FTMA CoP. Moisture content 16% at supply.

2.5 WALL DWANGS, NOGS AND BLOCKING

If dwangs, nogs or blocking is required for exterior insulated walls, ensure they are not full depth of framing. Install flush with face of wall required, leaving a minimum 20mm or 45mm preferable gap to the other face to NZS 3604, 8.8. Dwangs and nogs if required to be at 1350mm centres maximum to NZS 3604, 8.8.

2.6 EXTERIOR CAVITY WALL BATTENS - TIMBER - NON-STRUCTURAL

H3.1 or H3.2 Radiata pine battens, minimum 20mm thickness, width and height to match timber framing studs. Temporary fix battens before being fixed into the framing with the cladding fixings. To NZS 3602, table 1, reference 1D.10, Requirements for wood-based building components to achieve a 50-year durability performance.

2.7 EXTERIOR CAVITY WALL BATTENS - PROPRIETARY - NON-STRUCTURAL

Extruded polypropylene battens, size approximately 45mm wide x 18mm thickness. Temporary fix battens before being fixed into the framing with the cladding fixings. To the scope limitations of NZBC E2/AS1, and NZS 3604 Building Wind Zones up to, and including "Extra High".

Components

2.8 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.

2.9 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.

2.10 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.

2.11 NAIL PLATES

Comply with the requirements of NZS 3604, section 4, **Durability**, and of the number and form required for each particular junction to NZS 3604, sections 6 - 10. Plates to the plate manufacturer's design for the particular locations as shown on the drawings.

2.12 CONNECTORS

Comply with the requirements of NZS 3604, section 4, **Durability**, and of the number and form required for each particular junction to NZS 3604, sections 6-10. Connectors and structural brackets to the connector manufacturer's design for particular locations shown on drawings.

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).

2.14 DPC

Refer to 4161 UNDERLAYS, FOIL AND DPC section

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3 EXECUTION

3.1 EXECUTION GENERALLY

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).

3.2 SEPARATION

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

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

3.3 ATTENDANCE

Provide and fix blocks, nogs, openings and other items as required by other trades.

3.4 MOISTURE CONTENT

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

Framing at erection:	24% maximum
Framing at enclosure:	20% maximum
Framing at lining:	16% maximum

3.5 SET-OUT

Set out framing in accordance with the requirements of NZS 3604 and as required to support sheet linings and claddings. When necessary provide framing to suit any required cladding/lining control joints and sheet joints.

3.6 FRAMING SUB-FLOOR

Frame up off foundation walls and piles, all fabricated, fastened and braced to NZS 3604, section 6.10, **Framed subfloor walls**.

3.7 FRAMING FLOORS

Framed and fastened to NZS 3604, section 7, **Floors**.

3.8 FRAMING WALLS

Frame to required loading and bracing complete with lintels, sills and nogs, all fabricated and fastened to NZS 3604, section 8, **Walls**.

3.9 FRAMING ROOFS

Frame to required loading and bracing complete with valley boards, ridge boards and purlins. Design and fit roof trusses complete with anchorage. All fabricated and fastened to NZS 3604, section 9, **Posts** and 10, **Roof framing**.

3.10 FRAMING CEILINGS

Frame to required loading and bracing complete with runners and battens set out to support ceiling lining. All fabricated and fastened to NZS 3604, section 13, **Ceilings**. Trim for openings in ceilings and hatches to NZS 3604 section 13.3, **Openings in ceilings**. Provide blocking for water tanks located in the ceiling space to NZS 3604, section 13.4, **Water tanks in roof space**.

3.11 INSTALLING WALL UNDERLAYS

Refer to 4161 UNDERLAYS, FOIL AND DPC section

3.12 FIT CAVITY BATTENS

Fit and fix 20mm cavity battens over wall underlay or rigid air barrier, fully nail to timber studs to the requirements of the manufacturer or to NZS 3604. Fit and fix related flashings. Make allowance for cladding control joints where required. Fit and fix cavity closers to base of walls, open horizontal (or raking) junctions and over openings (windows, meters etc.).

3.13 DPC TO LOSP TREATED TIMBER

Refer to 4161 UNDERLAYS, FOIL AND DPC section.

3.14 DPC TO TIMBER

Refer to 4161 UNDERLAYS, FOIL AND DPC section.

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4 SELECTIONS

4.1 SUB-FLOOR FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Bearers (protected):	Radiata pine	SG8	H1.2
Ground floor joists:	Radiata pine	SG8	H1.2

4.2 FLOOR FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Mid floor joists:	Radiata pine	SG8	H1.2
Boundary joists:	Radiata pine	SG8	H1.2

4.3 EXTERIOR WALL FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Exterior walls:	Radiata pine	SG8	H1.2
Parapets:	Radiata pine	SG8	H1.2
Enclosed decks and balconies:	Radiata pine	SG8	H1.2
Cantilevered joists enclosed decks and balconies:	Radiata pine	SG8	H3.2
Nogs	Radiata pine	SG8	H1.2
Wall battens (not cavity):	Radiata pine	Merch	H1.2
Jamb battens:	Radiata Pine	Merch	H3.1

4.4 CAVITY BATTENS

Cavity battens	Species	Grade	Treatment
Timber - Non Structural:	Radiata pine	Merchantable	H3.1
Proprietary - non structural:	Manufacturer ~	Type ~	Reference ~
Cavity closer:	Manufacturer ~	Type ~	Reference ~

4.5 ROOF FRAMING - RADIATA PINE

Member	Species	Grade	Treatment
Rafters:	Radiata pine	SG8	H1.2
Trusses:	Radiata pine	SG8	H1.2
Purlins:	Radiata pine	SG8	H1.2
Ceiling joists and battens:	Radiata pine	SG8	H1.2
Valley boards:	Radiata pine	Merchantable	H1.2
Sarking:	Radiata pine	Merchantable	H1.2
Skillion roof framing:	Radiata pine	SG8	H1.2
Enclosed flat roof framing:	Radiata pine	SG8	H1.2

4.6 INTERIOR FRAMING - RADIATA PINE

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

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

1 GENERAL

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

1.1 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

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

The following definitions apply specifically to this section:

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

Documents

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

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Pro Clima documents relating to work in this section are:

SOLITEX EXTASANA® Installation Guide
SOLITEX EXTASANA ADHERO® Mass Timber Application Guide
SOLITEX® ADHERO FC & SOLITEX EXTASANA ADHERO® Wall Application Guide Version 2.0 dated January 2026
SOLITEX EXTASANA ADHERO® Mass Timber Moisture Protection
SOLITEX MENTO® Application Guide 24.06.2025
BRANZ Appraisal 815 (2024) - TESCON EXTOSEAL Sill Tape
BRANZ Appraisal 838 (2024)- TESCON EXTORA Sealing Tape
BRANZ Appraisal 855 (2025)- SOLITEX MENTO 3000 Roof and Wall Underlay
BRANZ Appraisal 876 (2020) - SOLITEX MENTO 1000 Roofing Underlay
BRANZ Appraisal 953 (2024) - KAFLEX and ROFLEX Grommets
BRANZ Appraisal 989 (2023) - SOLITEX EXTASANA ADHERO® Self-adhesive Underlay - Amendment 1
BRANZ Appraisal 1163 (2021) - SOLITEX EXTASANA® Wall Underlay

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SOLITEX MENTO® 1000 CONNECT Roof Underlay Installation Guide
SOLITEX UM CONNECT Application Instructions
Specification Guidelines 30 January 2026
Early-Close-In with SOLITEX EXTASANA®
SOLITEX EXTASANA® Early Close-In Application Guide for Brick Cladding
SOLITEX EXTASANA® Early Close-In Application Guide for Horizontal Cladding
SOLITEX EXTASANA® Early Close-In Application Guide for Vertical Cladding

Manufacturer/supplier contact details

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

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For Pro Clima system

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

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

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer warranty:

2 years:	For installation

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Compliance

1.6 COMPLIANCE - CODEMARK CERTIFICATE

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

1.7 COMPLIANCE - BRANZ APPRAISAL 815

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

1.8 COMPLIANCE - BRANZ APPRAISAL 855

SOLITEX MENTO 3000 Roof and Wall Underlay has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 855.

1.9 COMPLIANCE - BRANZ APPRAISAL 876

SOLITEX MENTO 1000 Roofing Underlay has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 876.

1.10 COMPLIANCE - BRANZ APPRAISAL 953

KAFLEX and ROFLEX Grommets have been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of their BRANZ Appraisal 953.

1.11 COMPLIANCE - BRANZ APPRAISAL 1163

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

Requirements

1.12 NO SUBSTITUTIONS

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

1.13 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

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

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

2 PRODUCTS

Wall underlays

2.1 WALL PROTECTION MEMBRANE - MECHANICAL FIX

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

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

Roofing underlays

2.2 ROOF UNDERLAY - LIGHT WEIGHT, TYPE R4, HIGH EXPOSURE (30 DAYS)

SOLITEX MENTO® 1000, consists of a waterproof, non-porous diffusion open membrane laminated to two layers of polypropylene fleece. Has a flammability Index of ≤ 5, when tested to AS 1530.2. Refer to BRANZ Appraisal 876 for details. Supplied in rolls 1.5m or 3m wide x 50m long. Self-supporting to 1200mm.

SOLITEX MENTO® 1000 must be covered and protected against weather or ultraviolet light within 30 days.

2.3 ROOF UNDERLAY - MEDIUM WEIGHT, TYPE R4, VERY HIGH EXPOSURE (90 DAYS)

SOLITEX MENTO® 3000 consists of a waterproof, non-porous diffusion open membrane laminated to two layers of polypropylene fleece. Has a flammability Index of ≤ 5, when tested to AS 1530.2. Complies with NZBC C/AS2, paragraph 4.12.5.2 (b), for suspended flexible fabrics. Refer to BRANZ Appraisal 855 for details. Available in rolls 1.5m or 3m wide x 50m long. Self-supporting to 1200mm.

SOLITEX MENTO® 3000 must be covered and protected against weather or ultraviolet light within 90 days.

Components

2.4 8mm SEPARATION MESH

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

2.5 WINDOW AND DOOR WEATHERTIGHT CONNECTION STRIP

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

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2.6 WINDOW AND DOOR CONNECTION TAPE

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

2.7 MULTI-PURPOSE ADHESIVE

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

2.8 PRIMER

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

Tapes

2.9 WEATHERTIGHT SEALING TAPE

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

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

2.10 SILL TAPE

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

2.11 WEATHERTIGHT JOINERY SEALING TAPE

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

2.12 NAIL & SCREW SEALING TAPE

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

2.13 DOUBLE-SIDED TAPE

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

Accessories

2.14 SEALING GROMMETS FOR ROUND CABLES - SINGLE, 5-12MM DIAMETER

KAFLEX mono sealing grommets 145mm x 145mm, manufactured from special reinforced paper with EPDM. For single cables of diameter 5 - 12mm.

Suitable for sealing penetrations through roof and wall underlays. KAFLEX grommets can be exposed to weather or ultraviolet light for a period of up to 180 days.

2.15 SEALING PATCH FOR CABLES ALREADY INSTALLED, UP TO 20MM DIAMETER

KAFLEX post, cable sealing grommet, flexible and elastic for airtight seals around cables that are already in place.



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2.16 MULTIPLE CABLE GROMMET FOR UP TO 16 CABLES, 5-12MM DIAMETER

KAFLEX multi, cable sealing grommet manufactured from EPDM with an integrated adhesive flange. Suitable for sealing up to 16 cables of 4.8 - 12mm diameter each in facades and roof linings.

2.17 SEALING GROMMET - FOR PIPES, 15-30mm DIAMETER

ROFLEX 20 self-adhesive sealing grommet for pipes manufactured from PP fleece, solid acrylic glue and EPDM rubber, 140mm x 140mm in size. Sealing grommet for pipes of diameter 15mm-30mm.

Suitable for sealing penetrations through roof and wall underlays, for indoor and outdoor applications. ROLEX 20 grommets can be exposed to weather or ultraviolet light for a period of up to 180 days.

2.18 SEALING GROMMET - FOR PIPES, 30 - 320mm DIAMETER

ROFLEX 30/50/100/150/200/250/300 self-adhesive sealing grommet for pipes manufactured from PP fleece, solid acrylic glue and EPDM rubber, vary in size from 140mm x 140mm to 500mm x 500mm. Sealing grommet for pipes of diameter 30-50mm, 50-90mm, 100-120mm, 120-170mm, 170-220mm, 220-270mm and 270-320mm.

Suitable for sealing penetrations through roof and wall underlays, for indoor and outdoor applications. ROLEX 30/50/100/150/200/250/300 grommets can be exposed to weather or ultraviolet light for a period of up to 180 days.

2.19 SEALING GROMMET FOR UP TO 9 PIPES/CONDUITS, 15-30MM DIAMETER

ROFLEX 20 multi, a multiple cable sealing grommet manufactured from EPDM. Creates an airtight seal for up to 9 cables of 15 - 30mm diameter in façades and roof underlays. ROFLEX 20 multi can be exposed to ultraviolet light for up to 180 days

2.20 STUD STRAPS - POLYPROPYLENE

Stud straps, 19mm wide polypropylene straps.

2.21 WIRE NETTING

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

2.22 SAFETY MESH

Safety mesh, 2mm x 150 x 300mm galvanized or PVC coated safety mesh to AS/NZS 4389.

2.23 GUTTER AND UNDER FLASHINGS

SOLITEX MENTO® range roof underlay to NZS 2295, cut to width for use under valley, apron flashing and internal gutters.

2.24 CAVITY CLOSERS, EAVES FLASHINGS, RIDGE VENT FLASHINGS

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

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

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

3.3 GENERAL REQUIREMENTS

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

3.4 INSPECTION

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

Preparation

3.5 PREPARATION

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

Application - wall underlay - SOLITEX EXTASANA

3.6 SCOPE LIMITATIONS - TIMBER FRAMED BUILDINGS

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

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

3.7 SCOPE LIMITATIONS - STEEL FRAMED BUILDINGS

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

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

3.8 FIX WALL UNDERLAY - TIMBER FRAMING

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

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

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Application - wall underlay - generally

3.9 INSTALL STUD STRAPS

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

Application - roofing underlay

3.10 WIRE NETTING

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

3.11 SAFETY MESH

Lay safety mesh over exposed roof areas fixed in accordance with AS/NZS 4389 and NZMRM CoP.

3.12 FIX ROOF UNDERLAY - STANDARD METHOD

Fix roof underlay in accordance with SOLITEX MENTO® Application Guide and as follows:

- Fix roof underlay at maximum 150mm centres to all framing with large-head clouts 20mm long, 8mm-12mm stainless steel staples, self-drilling screws or proprietary underlay fixings.
- Pull membrane taut over framing before fixing.
- Run underlay vertically or horizontally at roof pitches greater than 8°, horizontally with roof pitches less than 8°.
- Underlay must extend from the ridge and overhang the fascia board by 20mm - 25mm. Vertical laps must be no less than 150mm wide. Horizontal laps must be no less than 150mm wide, with the direction of the lap ensuring that water is shed to the outer face of the underlay. End laps must be made over framing and be no less than 150mm wide.
- Repair damaged areas such as tears, holes or gaps around service penetrations by covering with new material lapping the damaged area by at least 150mm and taping with TESCON EXTORA® Sealing Tape.

3.13 GUTTER AND UNDER FLASHINGS

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

Application - tape systems

3.14 APPLY TESCON TAPE SYSTEMS

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

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

Application - grommet and detail solutions

3.15 INSTALL GROMMETS AND DETAIL SOLUTIONS

Install grommets and detail solutions in accordance with Pro Clima KAFLEX and ROFLEX Installation Guides.

Completion

3.16 COMPLETION MATTERS

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

4 SELECTIONS

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

Materials

4.1 PRO CLIMA SOLITEX EXTASANA® MEMBRANE - MECHANICAL FIX

Location:	Refer Plans
Manufacturer:	Pro Clima NZ Limited
Type:	SOLITEX EXTASANA® Wall Protection Membrane
Jointing & sealing tape:	TESCON EXTORA® weathertight sealing tape TESCON EXTOSEAL® sill tape
Adhesive:	ORCON® Classic multi-purpose adhesive
Accessories:	KAFLEX mono sealing grommets for cables ∅ 6-12mm KAFLEX multi-sealing grommet for multiple cables ∅ 6-12mm ROFLEX 20 sealing grommet for pipes and conduit ∅ 15-30mm ROFLEX 30 / 50 / 100 / 150 / 200 / 250 / 300 sealing grommets for pipes ∅ 30-320mm

4.2 PRO CLIMA SOLITEX MENTO 3000 ROOF & WALL UNDERLAY

Location:	
Manufacturer:	Pro Clima NZ Limited
Type:	SOLITEX MENTO® 3000 three layer underlay
Jointing & sealing tape:	TESCON EXTORA® weathertight sealing tape TESCON EXTOSEAL® sill tape
Adhesive:	ORCON® Classic multi-purpose adhesive
Accessories:	

Accessories

4.3 STUD STRAPS

Type:	19mm blue polypropylene tape



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4221JW JSC THERMALLY MODIFIED TIMBER VERTICAL WB

1 GENERAL

This section relates to the supply and fixing of JSC vertical cladding systems for **JSC-TMT®** Thermally Modified Timber product.
It includes;

- JSC-TMT® Vertical shiplap weatherboards
- JSC-TMT® Board and Batten weatherboards
- JSC Proprietary Coating
- Proprietary cavity battens
- Fascia
- Moulding

1.1 RELATED WORK

Refer to 4161 UNDERLAYS, FOIL AND DPC section.

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:

TMT®	Thermally Modified Timber
DF	Dressed face
BSF	Band sawn face

Documents

1.3 DOCUMENTS

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

NZBC B2/AS1	Durability provisions for building elements
NZBC C/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
NZS 1170.5	Structural Design Actions - Part 5: Earthquake actions
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings
NZS 3617	Profiles of weatherboards, fascia boards and flooring
NZS 3631	New Zealand timber grading rules
BRANZ BU 411	Recommended Timber Cladding Profiles
CodeMark™ CMNZ30083verJ	JSC Board & Batten Cladding System
CodeMark™ CMNZ30084verQ	JSC VertiClad Cladding System

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

- JSC VertiClad Vertical Shiplap Weatherboard Cladding Installation Guide v3.7
- JSC VertiClad Vertical Shiplap Weatherboard Cladding Design Guide v1.1
- JSC VertiClad Vertical Shiplap Weatherboard System Technical Drawings
- JSC Verticlad System Installation Checklist
- JSC Board & Batten Weatherboard Cladding Installation Guide v3.7
- JSC Board & Batten Weatherboard Cladding Design Guide v1.0
- JSC Board & Batten Weatherboard System Technical Drawings
- JSC Board & Batten System Installation Checklist
- JSC Profile Charts
- JSC Exterior Weatherboard Maintenance Guide

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- JSC Structural Cavity Batten Setout and Fixing Guide
- JSC 20mm Cavity Setout For Vertical Weatherboards
- JSC Coatings Exterior Wood Oil Range

Manufacturer/supplier contact details

Company:	J.Scott and Company Ltd.
Trading as:	JSC
Web:	www.jsc.co.nz
Email:	techhelp@jsc.co.nz
Telephone:	Auckland 09 412 2800 Christchurch 03 348 9726

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 NO SUBSTITUTIONS

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

1.7 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for the requirements for submission and review of operation and maintenance manuals.

Provide the following operation and maintenance manual(s) prior to Practical Completion:

- JSC Maintenance Guide

Compliance information

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:-

- Signed declaration that the JSC product has been installed in accordance with the installation conditions of the CodeMark certificate.
- Other information required by the BCA in the Building Consent Approval documents.

1.9 CODEMARK CERTIFICATE CMNZ30084

The JSC VertiClad cladding system meets the requirements of the NZBC when used within the Conditions and Limitations of its CodeMark Certificate of Conformity CMNZ30084.

1.10 PERFORMANCE - GENERAL

Accept responsibility for the weather-tight performance of the completed cladding system, including all penetrations. To NZBC B2/AS1, NZBC E2/AS1 and grading to NZS 3631. Refer to JSC Weatherboard Cladding Installation guides.

Ensure the relevant JSC Weatherboard Cladding System Installation Checklist has been signed off by the main contractor on completion.

Performance - wind

1.11 FIXINGS - WIND

Design and use the fixings appropriate for the wind zone (R) and topographical classification (T) of this site and building height; as required by NZS 3604. Refer to JSC Weatherboard Cladding Installation guides.

Performance - fire

1.12 EXTERNAL FIRE SPREAD - CLADDING EXEMPT FROM TESTING

To NZBC C/AS1, 5.3 External cladding Systems, 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.

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Performance - earthquake

1.13 FIXINGS, EARTHQUAKE

Use fixings and methods capable of sustaining the loads appropriate to the area as required by NZS 1170.5.

Quality control and assurance

1.14 INSPECTIONS

2 PRODUCTS

Materials

2.1 TMT® AMBA

JSC-TMT® Amba is a thermally modified timber with a consistent light golden brown colour; the thermo-modification entails the timber being heat treated. The process results in a timber with excellent resistance to swelling and shrinkage in extremes of temperature and humidity.

Components

2.2 VERTICAL SHIPLAP WEATHERBOARDS

Selected timber weatherboards machined to JSC-TMT® profiles, lap and rebate details to BRANZ BU 411, and general design to NZS 3617.

2.3 ASSOCIATED MOULDING

To JSC-TMT® profiles as detailed. Refer to SELECTIONS and JSC Weatherboard Cladding System Technical Drawings.

2.4 FASCIA BOARDS

To JSC-TMT® profiles as detailed. Refer to SELECTIONS and JSC Weatherboard Cladding System Technical Drawings.

2.5 CAVITY BATTEN - STRUCTURAL

JSC-H, JSC-V and JSC; CCA 3.2 treated Radiata Pine timber structural battens, used horizontally, are castellated on both faces with 18 degree slope to provide drainage and ventilation. Sizes: JSC-H: 45mm x 45mm, JSC-V: 45mm x 45mm and JSC: 45mm x 70mm

Treatment to NZBC B2/AS1 and NZS 3602, table 1, reference 1D.10.

2.6 CAVITY BATTENS - NON-STRUCTURAL

JSC-U; CCA 3.2 treated Radiata Pine timber non-structural battens are castellated on both faces with 18 degree slope to provide drainage and ventilation. Sizes: 45mm x 20mm

Treatment to NZBC B2/AS1 and NZS 3602, table 1, reference 1D.10.

2.7 WALL UNDERLAY

To NZBC E2/AS1, Table C.2.1.1 Properties of roof underlays and wall underlays. For flexible wall underlays and DPC refer to the appropriate separate section(s).

2.8 CAVITY CLOSER/VERMIN-PROOFING

Perforated UPVC, aluminium or stainless steel trays with upstands. Flashing to NZBC B2/AS1, Table C.1.1.1, NZBC E2/AS1, 4.0 Flashings, PBS vermin closure to NZBC E2/AS1, paragraphs 9.1.7.5 - 9.1.7.7.

2.9 NAILS

Stainless steel or silicon bronze annular grooved nails with flat, rose or pentagon head, refer to JSC Weatherboard Cladding Installation Guides for fixing details.
NOTE: Select appropriate nail size / length to achieve the minimum required embedment into the framing as per installation guide.

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2.10 CLINCH NAILS

40mm x 2.0mm Clinch Nail, annular grooved shank grade 316 stainless steel or silicon bronze. Used to retain hidden lap tongues of rebated weatherboard profiles such as vertical shiplap. Refer to JSC Weatherboard Cladding Installation Guides for fixing details.

2.11 FLASHING

To NZBC E2/AS1, 4.0 Flashings. Material, grade and colour as detailed and scheduled and to NZBC E2/AS1, Table C.1.1.1B: Compatibility of materials in contact, and Table C.1.1.1C: Compatibility of materials subject to run-off. Ensure materials used for flashing are compatible with the exterior joinery materials, fixings and cladding materials.

Finishes

2.12 JSC-TMT® WEATHERBOARD SYSTEM COATING REQUIREMENTS

All JSC weatherboards including mouldings must be coated on all sides before installation and finished with topcoats of suitable exterior grade stain to the coating manufacturer's specification.

2.13 JSC FACTORY COATING

JSC In-house factory coating system involves applying the first coat of selected coating using vacuum coating machines under controlled conditions.

2.14 SITE-APPLIED COATING

During installation all end grain, bare surfaces and cut edges must be minimum double coated. Additional coating/s to be applied on-site to coating manufacturer's specifications.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

3.2 ROUTINE MATTERS

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

3.3 PRE-INSTALLATION REQUIREMENTS

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

Moisture content:	Timber framing 14 - 18% maximum at fixing

Installation/application

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 GENERALLY

Execution to NZBC E2/AS1, 3.0 Weather-tightness risk factors, NZBC E2/AS1, 9.1.7 Drained cavities and 9.4 Timber weatherboards.

3.6 SUBSTRATE

Before starting cladding fixing ensure that the substrate conforms to NZS 3604 and NZS 3604:6 Foundation and sub-floor framing and NZBC E2/AS1, 9.4 Timber weatherboards.

Application - preparation/general

3.7 JSC FACTORY COATING - STAIN / OIL

JSC In-house factory applied coating system ensures the selected coating is applied on all 4x sides of weatherboard profiles within a controlled environment delivering a full envelope seal and a premium finish. Additional coatings may need to be applied on site as per the coating manufacturer's recommendations.



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3.8 SITE-STAINING OR PRIMING AND SEALING

All JSC uncoated thermally modified timber weatherboards must be coated with one coat of suitable stain to JSC specification on all four sides prior to installation.

Open stack each board to dry with the back facing down, ensuring the surfaces remain well finished, untouched and unblemished. Once dry, place boards in fillet stack, laid flat and true, until fixed. All end grain, bare surfaces and cut edges must be coated twice prior to installation.

3.9 CAVITY CLOSER/VERMIN-PROOFING

Install cavity closer/vermin-proofing at base of walls, open horizontal (or raking) junctions, over openings (windows, meters, etc.) to JSC Weatherboards Cladding Installation Guides.

Fix 75mm upstand to framing one side and 10mm upstand to cladding the other. Length and width to suit cavity.
Ensure openings in cavity closer/vermin-proofing are kept clear and unobstructed in order to maintain draining and venting of the cavity.

3.10 PENETRATIONS

Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding to JSC Weatherboards Cladding Installation Guides.

Required preparatory work includes the following:

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

Application - cavity battens

3.11 INSTALLATION - HORIZONTAL NON-STRUCTURAL CAVITY BATTENS

Install JSC-U 45mm x 20mm cavity battens horizontally over the nogs and vertically at corners and around openings. When installed horizontally, JSC-U cavity battens to be installed sloping away from the wall underlay towards the back of weatherboards ensuring water is shed away from the framing. Install to JSC 20mm Cavity Setout For Vertical Weatherboards instructions.

The non-structural battens to be fixed temporarily using 50mm stainless steel clouts over the wall underlay and then firmly fixed by cladding fixings.

Seal the top of the cavity and install cavity closer/vermin proofing at the base of walls, open horizontal (or raking) junctions, over openings (windows, meters, etc.)

3.12 INSTALLATION - HORIZONTAL STRUCTURAL CAVITY BATTENS

Install to JSC Structural Cavity Batten Setout and Fixing Guide instructions.

Horizontal structural battens to be fixed permanently to studs using stainless steel fastenings with minimum fixing tension per lineal meter of batten to transfer all applied load back to the framing.

All accessory components including vermin proofing, cavity closures, back flashing and head flashing to be custom designed to accommodate the cavity.

Application - weatherboards

3.13 SET-OUT

Using laser or mechanical devices set-out the overlap boards to ensure dimension to exposed face in line of weather is constant and that boards remain true. Use a string line to set out all nailing that will be visible in the finished work. Align all nailing accurately in straight lines.

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3.14 FIXING - OILED / STAINED TIMBER FINISH

Install to NZBC E2/AS1, 9.4 Timber weatherboards. Coat all cut edges before fixing with JSC specified oil/stain product. Pre-drill all fixings 1mm smaller than nail gauge to ensure a snug fit and to minimise risk of moisture entry. Finish the nail heads flush onto and not into the board surface. Do not 'over drive' the nail head and crush the timber surface beneath and surrounding the nail.

Refer to JSC Weatherboards Cladding Installation Guides for fixing sizes and details.

3.15 FIXING JSC® VERTICAL SHIPLAP WEATHERBOARDS

Install to JSC® VertiClad Vertical Shiplap Weatherboards Cladding Installation Guide.

Using laser or mechanical devices, set out all nailing accurately in straight lines. Align weather grooves to ensure there is a 2mm expansion gap between lapped boards.

JSC TMT® Vertical Shiplap Weatherboards must be pre-drilled with a slight (0-2°) upward slope, 1mm smaller than the nail shank to reduce moisture entry. Single-fix each weatherboard at 35mm from the overlapping edge of the weatherboard. Refer to installation guide for minimum embedment of nails into the framing.

Note: Where vertical weatherboards have an exposed bottom edge such as at the bottom plate, window head, inter storey junction, overhead soffit junction, etc., the bottom edge of the weatherboards to be cut with a 15° degree slope to form a drip edge. From the bottom edge, the back of the weatherboards to be coated up to 75-150mm prior to installation.

All corners to be weatherproofed using corrosion resistant back flashing behind the weatherboards at all external corners to JSC VertiClad Vertical Shiplap Weatherboard Cladding Installation Guide.

Ensure all cut edges are double sealed and manufacturer's coating schedules adhered to prior to installation.

Application - Ancillary

3.16 WINDOW FIXING

Fix windows to JSC Weatherboards Cladding Installation Guides.

3.17 FLASHING

Fix to JSC Weatherboard Cladding Installation Guide. Material compatibility to NZBC E2/AS1, Table C.1.1.1B: Compatibility of materials in contact, and Table C.1.1.1C: Compatibility of materials subject to run-off.

3.18 SCRIBERS

Scribers are to be wet-sealed in place and fixed in accordance with JSC Weatherboard Cladding Installation Guide.

Completion & Commissioning

3.19 COMPLETION MATTERS

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

4 SELECTIONS

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

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Materials - specific timber weatherboards

4.1 JSC-TMT® AMBA - VERTICAL SHIPLAP WEATHERBOARDS

Location:	Refer Elevations
Type:	JSC-TMT® Amba
Profile number:	TBC
Dimensions:	TBC
Surface finish:	Bandsawn

Materials - generic mouldings

4.2 JSC TMT® ASSOCIATED MOULDINGS

Refer Details

4.3 JSC TMT® FASCIA

Refer Details

Materials - cavity battens

4.4 JSC CAVITY BATTENS - NON STRUCTURAL

Profiles:	JSC-U
Timber species:	Pinus Radiata
Timber grade:	Merchant
Treatment:	H3.2
Size:	45mm x 20mm

4.5 JSC CAVITY BATTENS - STRUCTURAL

Profiles:	JSC-H - 45mm x 45mm
Timber species:	Pinus Radiata
Timber grade:	Merchant
Treatment:	H3.2
Size:	45x45

Materials - accessories

4.6 NAILS

Type:	stainless steel

4.7 CAVITY CLOSER/VERMIN-PROOFING

Brand/type:	PBS Vermin closure to NZBC E2/AS1, paragraphs 9.1.7.5 - 9.1.7.7
Material:	UPVC

4.8 INTERNAL AND EXTERNAL CORNER BACK FLASHING

Material:	to NZBC E2/AS1, Table C.1.1.1B: Compatibility of materials in contact
Size:	Un-hemmed 75mm x 75mm x 90° angle

Materials - finishes

4.9 JSC FACTORY-APPLIED FINISH

TBC

4.10 SITE-APPLIED FINISH

TBC

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4252VV VULCAN ULTRACLAD VERTICAL WEATHERBOARDS

1 GENERAL

This section relates to the supply and fixing of Vulcan Ultraclad® vertical inter-locking weatherboards.

It includes:

- Aluminium weatherboards
- Timber battens
- Corner mouldings
- Starter strips
- Jointers
- Board locators
- Flashings and accessories.

1.1 RELATED WORK

Refer to 4161 UNDERLAYS, FOIL AND DPC for wall underlays.

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 C/AS1	Protection from fire for buildings with sleeping (residential) and outbuildings (risk group SH)
NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZBC E2/VM1	Cladding systems of buildings up to 10 m in height – including junctions with windows, doors and other penetrations

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
UltraClad® Cladding - Aluminium Weatherboards Brochure
UltraClad® Profiled Metal Cladding - Specification
UltraClad® Technical Statement for Steel Framing Specification and Installation
UltraClad® Technical Statement for Vertical Cavity System
UltraClad® Aluminium Weatherboards - Installation Details
BRANZ Appraisal 796 [2024]- Ultraclad® Vertical Weatherboard Cavity System
BRANZ TR0454#1 Weathertightness Test to E2/VM1 of Ullrich Ultraclad® 205mm Shadoline and 140mm Teeboard Weatherboards.

Manufacturer/supplier contact details

Company:	Vulcan Steel Ltd
Web:	buildingsystems.vulcan.co
Email:	buildingsystems@vulcan.co
Telephone:	0800 500 338

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

25 years	For durability of Ultraclad® aluminium weatherboards
20 years	For film and colour integrity of powder coating

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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:

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

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

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

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the cleaning and maintenance information as electronic PDF format documents.

1.10 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Vulcan Ultraclad® product warranty
- Installer / applicator warranty
- Other information required by the BCA in the Building Consent Approval documents.

Performance - Fire

1.11 EXTERNAL FIRE SPREAD - NON-COMBUSTIBLE MATERIAL

Vulcan Ultraclad® weatherboards are aluminium, meeting the requirements of NZBC C/AS1, 5.3 External cladding systems, and NZBC C/AS2, 5.5 External cladding systems, for non-combustible material.

2 PRODUCTS

Materials

2.1 VULCAN ULTRACLAD VERTICAL WEATHERBOARDS

Vulcan Ultraclad® weatherboards are manufactured from 6060-T5 grade extruded aluminium to AS/NZS 1866. Weatherboard profiles are 15mm thick and available in a range of lengths, heights, profiles and finishes. Refer to SELECTIONS.

Components

2.2 ULTRACLAD WEATHERBOARD FIXINGS

8 gauge, grade 304 Stainless Steel screw fixings via locator clips to achieve min. 30mm embedment into timber framing. Refer to SELECTIONS.

2.3 CAVITY VENT STRIP

Folded aluminium profile punched with 5mm holes to base for ventilation and vermin proofing in accordance with NZBC E2/AS1, available in 2.4m lengths.

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2.4 BOARD STARTER STRIP

Powder coated extruded aluminium profile starter strip, with holes punched for drainage. Available in 5m lengths.

2.5 BOARD LOCATOR CLIP

Powder coated extruded aluminium board locator clip pre-drilled for fixing.

2.6 CORNER MOULDING

Powder coated extruded aluminium 90° two-piece internal and external corner mould, available in 5.1m and 6.1m lengths.

2.7 TWO PIECE BOARD JOINTER

Powder coated extruded aluminium two piece jointer for jointing lengths of Ultraclad® weatherboard, available in 5m lengths.

2.8 HEAD STARTER

Powder coated extruded aluminium head starter available in 5m lengths.

2.9 VERTICAL TRACK FLASHING

Dynex Dynaflash polypropylene track flashing.

2.10 INTER-STOREY JOINT FLASHING

Powder coated extruded aluminium inter-storey joint flashing, available in 5m lengths.

2.11 FLEXIBLE WALL UNDERLAY

Refer to 4161 UNDERLAYS, FOIL AND DPC.

2.12 CAVITY BATTENS

Minimum 45mm wide x 18mm thick, H3.1 treated radiata pine cavity battens with 15° slope to top edge.

2.13 CAVITY BATTEN FIXINGS

Refer to SELECTIONS.

2.14 SEPARATION STRIP

50 mm wide strip of roof underlay complying with NZBC E2/AS1, Table C.2.1.1 Properties of roof underlays and wall underlays, for use between treated timber and aluminium.

2.15 INSEAL TAPE

Inseal® 3109, 19mm thick black compressible low density PVC foam tape with adhesive to one side.

2.16 FLEXIBLE SEALANT

To NZBC E2/AS1 for use as a weather sealant for exterior use.

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.

Timber framing moisture content:	24% maximum at the time of cladding application.

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Installation

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 CAVITY BATTENS

Install cavity battens horizontally over wall underlay and nogs at 600mm maximum centres. 15° sloped top edge of battens to fall away from building, fix battens at 800mm maximum centres into timber framing to form a drained cavity to manufacturers details. Plan locations of fixings for battens to avoid locator clips positions.

3.6 SEPARATION

Staple separation strip to face of cavity battens to isolate aluminium weatherboards from treated cavity batten.

3.7 BOARD STARTERS

Determine the lowest point of cladding and position the starter strip between 50mm min. and 105mm max below the bottom plate. Mark precise level of weatherboard base around building and fix board starters through cavity battens to framing as per manufacturers details.

3.8 BASE CHANNEL

Use UltraClad® vertical starter as a base channel to start base of any angled cut boards.

3.9 CORNER FLASHING

Fix two-part corner flashing to cavity battens at 600mm centres. Clip second part of two-part corner flashing into place once Ultraclad® weatherboards have been installed. Where possible allow for continuous length from the lowest point of cladding to the soffit, top of the wall or inter-storey joint.

3.10 VERTICAL BACK FLASHING

Install 0.9mm folded (hemmed) aluminium back flashings vertically between cladding and cavity battens, located behind cladding joints, door and window jambs, and below penetrations as per manufacturer's details.

3.11 VENT STRIP

Install vent (vermin barrier) strip as per manufacturers details, to base of weatherboards, horizontal open junctions and over openings (windows, meter boards, etc).

3.12 ULTRACLAD WEATHERBOARD INSTALLATION

Cut UltraClad® weatherboards to length allowing for a 1mm gap each end of board for expansion. Install level, true to line and face. Lock first course of weatherboards into starter strip. Secure edge of board with locator clips screw fixed through the cavity battens to framing. Clip fixing to engage with fixing channel of board firmly with no excessive downward pressure. Lock subsequent courses of weatherboards into the channel of the previous board.

3.13 INTER-STOREY JUNCTIONS

Install inter-storey drained joints.

3.14 END CAPS

Proprietary end cap profiles to be installed at ends of weatherboards at jambs and sills. Window and door joinery to cover cladding by 10mm min. Install inseal tape between joinery and cladding as per manufacturers details.

3.15 PENETRATIONS

Cut UltraClad® weatherboards and install over penetration with 5mm equal gap all round and install sealant in accordance manufacturer's instructions.

3.16 FINISHING

Touch up of scratches to be completed in accordance with maintenance instructions.

Completion

3.17 COMPLETION MATTERS

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



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4 SELECTIONS

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

Materials

4.1 TIMBER CAVITY BATTENS

ReTimber species:	Radiata Pine
Treatment:	H3.1
Grade:	Dressed and finger jointed
Size:	45mm x 18mm
Fixings:	Refer Details

4.2 VULCAN ULTRACLAD VERTICAL WEATHERBOARDS

Location:	Refer Drawings
Type/brand:	Vulcan Ultraclad® horizontal aluminium weatherboards
Profile:	TBC
Fixings:	50mm 6g stainless steel c/s screws.
Finish:	Dulux Duratec powder coat
Colour:	TBC

Components

4.3 SEPARATION STRIP

DPC As per Details

4.4 FLEXIBLE SEALANT

Sika MS

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4311D DIMOND PROFILED METAL ROOFING

1 GENERAL

This section relates to the supply and fixing of Dimond Roofing profiled metal roofing complete with associated accessories and components.

1.1 RELATED WORK

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

Refer to ~ for ~

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

BMT	Base metal thickness
LBP	Licenced Building Practitioner
NZMRM	New Zealand Metal Roofing Manufacturers Inc
MS	Modified silicone

Documents

1.3 DOCUMENTS

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

BPS	Building Product Specifications
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZBC G12/AS1	Water Supplies
AS/NZS 2728	Prefinished / prepainted sheet metal products for interior / exterior building applications
NZS 3604	Timber-framed buidings
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS 3566	Self-drilling screws for the building and construction industries
ISO 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)
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Dimond Roofing and Cladding Systems Manual (January 2021)
Dimond Roofing Profile BPIR
Dimond Roofing UniCote® LUX Brochure
UniCote® LUX Data Sheet
AWTA Product Testing Reports for UniCote® Lux

Manufacturer/supplier contact details:

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

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Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:.

~ years:	for failure of coating adhesion
~ years:	for weatherproofing by material penetration

- 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:

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

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

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

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

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

Provide this information prior to practical completion.

Compliance information

1.10 COMPLIANCE - PROPOSED ALTERNATIVE SOLUTION

Dimond various metal roofing profiles, are presented as an alternative solution for:

Clause:	E2-External moisture
Performance:	E2.3.1 Roofs must shed precipitated moisture. In location subject to snow, roofs must also shed melted snow. E2.3.2 Roofs and exterior walls must prevent the penetration of water that could cause undue dampness, damage to building elements, or both.

Profiles:

Trapezoidal profile:	Dimond DP955, Solar Rib, Steelspan 900 & Topspan
Clip fixed, trough:	Dimondek 630

Proposed alternative solution is supported by:

- In-service history
- NZMRM CoP
- Dimond standard details and installation guidelines

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Performance - General

1.11 DRINKING WATER
Roofing for collecting potable water to NZBC G12/AS1.

Quality control and assurance

1.12 INSPECTIONS
~

2 PRODUCTS

Materials

2.1 STEEL - TYPE AZ COATING (ALUMINIUM/ZINC ALLOY), PREPAINTED
Formability steel sheet, G550 for roll forming or G300 for flashings, coated to AS 1397.

Fixings

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

2.3 FIXING SCREWS
To AS 3566. Screws appropriate to the roofing material and the supporting structure, as required by Dimond Roofing and with a minimum Class 4 or 5 durability and not less than the material being fixed.

Screw into timber to penetrate by minimum 30mm and into steel to penetrate by minimum 3 threads. Screw fasteners to be head stamped identifying the manufacturer and class. Refer to SELECTIONS

2.4 RIVETS - ALUMINIUM
Sealed aluminium, minimum diameter 4mm, for use with zinc coated, zinc/aluminium coated or aluminium roofing.

Components

2.5 FLASHINGS GENERALLY
To NZBC E2/AS1, 4.0 Flashings.
Formable grade 0.55 BMT for galvanized, Type AZ or AM - coated and pre-painted steel, 0.5mm BMT for Copper 0.7mm and 0.90 for aluminium (or 0.7mm for small aluminium flashings) to the same standards as the profiled sheets, notched where across profile or provided with a soft edge.

2.6 BOOT FLASHINGS
Generally to NZBC E2/AS1, 8.4.12 Roof penetrations
EPDM proprietary pipe flashing laid on 45° bias to roofing, with over-flashing (soaker flashing) if required.
A boot flashing should be positioned so that it dams a roofing pan no more than 50%, if this cannot be avoided use an over-flashing back to the ridge and fix the boot flashing to that.

Accessories

2.7 WIRE NETTING AND SAFETY MESH
Refer to 4161 UNDERLAYS, FOIL AND DPC.

2.8 UNDERLAY AND REFLECTIVE FOIL
Refer to 4161 UNDERLAYS, FOIL AND DPC

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2.9 SEALANT

Neutral curing MS sealant or polymer sealant as required by the roofing manufacturer and used as directed.

2.10 CLOSURE STRIPS

Non-bituminous compressible, profiled foam strips to fit the sheet profile.

2.11 LAP SEALING TAPE

Closed cell self adhesive nitrile tape.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

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

3.3 PRE-INSTALLATION REQUIREMENTS

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

Inspect the roof framing and supporting structure to ensure that it is complete and fully braced ready for roofing and free from any misalignments or protrusions that could damage the roofing. Provide a fall for roof drainage minimum as required by selected profile.

Ensure moisture content is:

Timber framing:	18% maximum (16% or preferably less for under transverse flashings)

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

3.4 SEPARATION

Isolate dissimilar materials in close proximity as necessary by painting the surfaces or fitting separator strips of compatible or inert materials. Place isolators such as flashing tapes or drainage mat between metals and CCA treated timber, cement based materials, and mixing aluminium sheet and steel mesh.

3.5 INSTALLATION DAMAGE

Take care to avoid damaging pre-finished roofing both during and after fixing. Wear only soft-soled shoes on the finished surface.

Installation/application

3.6 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.7 INSTALLATION GENERALLY

Install Dimond profile metal roofing in accordance with Dimond Roofing requirements and NZMRM CoP and to form a complete water tight roofing system, including all flashings, cappings and penetrations.

3.8 SET-OUT

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

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3.9 END LAPS

End laps should be avoided, except where specifically detailed. Where end laps are necessary, seal both ends of the lap with lap sealing tape or sealant and 4mm sealed pop rivets at maximum 50mm centres, to detail in NZMRM CoP.

3.10 SEAL CUT EDGES

In very severe marine environments seal cut edges of pre-coated steel sheet with edge protection lacquer before fixing to the cladding manufacturer's requirements.

3.11 THERMAL MOVEMENT

For sheet lengths more than 18 metres, make provision for thermal expansion where required

3.12 FIXING GENERALLY

Install and fix in accordance with NZBC E2/AS1, the NZMRM CoP and the Dimond Roofing required fixing patterns and details to suit project wind loadings stated in the general section 1220 PROJECT or in accordance with specific design in accordance with project engineer's requirement.

Use only screws and clips as required by Dimond Roofing. Paint colour matched fixings and accessories before installation.

When a load spreading washer is required, pre-drill a 10mm oversized hole to accommodate the EPDM washer.

3.13 MARKING AND CUTTING

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

3.14 STOP ENDS AND DOWNTURNS

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

Application - Flashings

3.15 FLASHINGS

Flash roof to parapets, walls and penetrations to detail. Flashings to be installed on timber framing with moisture content of less than 18%. Where no detail is provided flash to NZMRM CoP recommendations and Dimond requirements. Cut accurately and fix using sealant and rivets to detail and to Dimond requirements to form a weatherproof cover. For highly visible flashings, plan joints/junction to take account of the aesthetic requirements.

3.16 USE OF SEALANTS

Select and use sealants only as recommended by Dimond. Remove any swarf and clean down, apply sealant in two narrow beads transversely across flashing intersections, close to the two edges. Avoid exposing sealant on outside surfaces. Do not use sealant on Copper material, these materials are required to be soldered to complete any joint.

3.17 FLASHING PENETRATIONS

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

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

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Roofing

4.1 DIMOND ROOFING - VEEDEK ROOFING

Location:	~
Profile:	Veedek
BMT/material:	~
Coating system:	~
Colour:	~
Protective film:	~
Effective cover:	755mm
Profile height:	28mm
Purlin material:	~
Fixing:	~
Fixing pattern:	Refer to Dimond Roofing Veedek literature for details

Accessories

4.2 FLASHINGS - GENERALLY

Profile:	Refer Details
BMT/material:	0.55
Coating system:	To match roofing
Paint colour:	To match roofing

4.3 FLASHINGS - INACCESSIBLE

Material/thickness:

4.4 CLOSURE STRIPS

Brand:



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4521AR APL RESIDENTIAL ALUMINIUM WINDOWS & DOORS

1 GENERAL

This section relates to the fabrication, supply, and installation of APL Window Solutions residential window and door systems.

1.1 RELATED WORK

Refer to appropriate AGP glazing sections for glass types.

~

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:

WGANZ	Window & Glass Association NZ
PQAS	Powder Coating Quality Assurance System

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 F4/AS1	Safety from falling
NZBC G4/AS1	Ventilation of buildings
NZBC H1/AS1	Energy efficiency for all housing and buildings up to 300m²
NZBC H1/AS2	Energy efficiency for buildings greater than 300m²
NZBC H1/VM1	Energy efficiency for all housing and buildings up to 300m²
NZBC H1/VM2	Energy efficiency for buildings greater than 300m²
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
NZS 4211	Specification for performance of windows
NZS 4223.3	Glazing in buildings - Human impact safety requirements
AS/NZS 4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
BS EN 673	Glass in building - Determination of thermal transmittance (U-value) - Calculation method
AAMA 2603	Voluntary specification, performance requirements, and test procedures for pigmented organic coatings on aluminium extrusions and panels (with coil coating appendix)
AAMA 2604	Voluntary specification, performance requirements and test procedures for high performance organic coatings on aluminium extrusions and panels
AAMA 2605	Voluntary specification, performance requirements and test procedures for superior performing organic coatings 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

Window & Glass Association NZ (WGANZ) documents:

Window Installation Guide	Guide to Window Installation as described in E2/AS1

SFA 3503-03	Anodic Oxide coatings on wrought aluminium for external architectural application (2005)

US Federal Specification:

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)

CodeMark™ CMNZ10033 ver2	APL Metro Series ThermalHEART® with Centrafix™ Windows and Doors.

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

APL Window Solutions	Specifier Guide
APL Window Solutions	Metro Series ThermalHEART® with Centrafix™ System Guide (Version 08/23a)
APL Window Solutions	Windows and Doors for Residential Purposes BPIR
APL Window Solutions	Windows and Doors for Residential Purposes - Thermally Insulated BPIR
APL Window Solutions	Entrance Door Overview
APL Window Solutions	Testing of APL new window and installation to EM9 test method

BRANZ Appraisal 1188 (2023) - APL Metro Series ThermalHEART® with Centrafix™ Windows and Doors - Amended 2 May 2024
BRANZ Appraisal 1259 (2024) - APL ThermalHEART+® Window and Door Systems - Amended 2 May 2024

Manufacturer/supplier contact details

Company:	Architectural Profiles Ltd.
Trading as:	APL Window Solutions
Web:	www.altherm.co.nz www.firstwindows.co.nz www.vantage.co.nz www.aplnz.co.nz
Email:	apl.techinfo@aplnz.co.nz altherm.techinfo@aplnz.co.nz firstwindows.techinfo@aplnz.co.nz vantage.techinfo@aplnz.co.nz
Telephone::	07 849 8888

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years:	For materials including hardware and componentry
12 years:	For AGP glass

- 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:

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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

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

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

1.9 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.

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
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 claddings and linings
- Flashing details
- Sealants and air seals
- Non standard fixing details including bracketing

If requested provide the following additional information:

- Design calculations
- Producer Statement in the form PS1 Producer Statement Design
- Rebate sizes
- Dimensions of all typical elements and of any special sizes and shapes
- Provision for the exclusion and/or drainage of moisture
- Provision for adjustment of fixings to ensure true alignment of windows and doors
- Sealant types and full size sections of all sealants and backing rods
- Provision for thermal movement
- Provision for seismic movement and movement under wind loads
- Sequence of installation
- Glazing specification and details
- Information of Professional Indemnity Insurance held by the person providing the calculations and shop drawings

Submit shop drawings for review to ~.

- ~ working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication and/or installation.

1.11 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:
APL Window Solutions Specifier Guide

Provide this information prior to practical completion.

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1.12 MARKING - EXTERNAL WINDOWS / DOORS

Each window claimed by the manufacturer to be complaint with NZS 4211 to be labelled on the frame to NZS 4211.

Compliance Information

1.13 COMPLIANCE - BRANZ APPRAISAL

APL ThermalHEART+® Window and Door Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 1259.

Performance

1.14 EXTERNAL WINDOW PERFORMANCE

APL Window Solutions windows and doors have been tested to NZS 4211 and the requirements of BPS, 4.4.1 Structural and weathertightness provisions.

1.15 THERMAL PERFORMANCE - WINDOWS & GLAZED DOORS, HOUSING ONLY

Thermal performance of windows & doors to NZBC H1/AS1. The construction R-Value of windows & doors determined by Appendix D, Table D1.1.1: Construction R-values (R window) of selected generic windows and doors. Refer to SELECTIONS for construction R-values.

2 PRODUCTS

2.1 WINDOWS

Refer to SELECTIONS.

2.2 DOORS

Refer to SELECTIONS.

Materials

2.3 ALUMINIUM EXTRUSIONS

Alloy designation to comply with AS/NZS 1866. Branded and extruded for anodising or powder coating.

2.4 ALUMINIUM SHEET AND STRIP

Complying with AS/NZS 1734 of suitable thickness. Rolled for anodising or powder coating.

Alloy designation: 5251 - H16 or 5005 - H16

2.5 STAINLESS STEEL SHEET AND STRIP

Type: 316 austenitic steel
Finish grade: 2B (satin lustre)

2.6 GLASS

Refer to the glazing section for glass types and installation.

Reveals

2.7 REVEALS - TIMBER PAINTED

Timber reveals for paint finish with all sides primed grooved for wall linings or flush finished for architraves.

Flashings

2.8 FLASHINGS GENERALLY

To NZBC E2/AS1, 9.1.9 Windows and doors. Material, grade and colour of head flashings to match the window frames. Ensure that materials used for head, jamb and sill flashings are compatible with the window frame materials and fixings and cladding materials.

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Components for installation - cavity systems

2.9 STANDARD CAVITY CLOSER

A device constructed from either aluminium or PVC to close the cavity above the window or door unit, between the cladding and head flashing, to provide ventilation in accordance with NZBC E2/AS1 to the spaces above the window or door.

2.10 SUPPORT BAR

WGANZ extruded aluminium support bar with built in drainage and ventilation to NZBC E2/AS1, and support bar location bracket, to provide continuous support to the window unit. Size to suit cladding type.

Components

2.11 GLAZING GASKETS

PPL Thermoplastic rubber. Do not stretch glazing gaskets during installation. Measure and cut gaskets 5-10% over length before installation.

2.12 HARDWARE AND FURNITURE

Hinges, stays, catches, fasteners, latches, locks and furniture as offered by the window and door manufacturer. Refer to SELECTIONS for type and finish. Key alike all lockable window hardware able to be keyed alike.

2.13 SAFETY STAYS

Stainless steel non releasable restrictors to limit window opening to NZBC F4/AS1, Section 2.0, Opening windows.

2.14 FIXING BRACKETS

Designed by manufacturer to specific design.

2.15 WEATHERING/INSTALLATION SEALANT

Building sealant used in accordance with manufacturer's instructions for weather sealing aluminium frames to the cladding, complying with US Federal Specification TT-S-001543A, or a one-part polyurethane moisture curing, elastic joint sealant of medium modulus (± 25% movement) to US Federal Specification TT-S-00230C.

Finishes

2.16 DURALLOY +PLUS POWDER COATED ALUMINIUM

Polyester powder organic coating in accordance with WGANZ PQAS and AAMA 2603. 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

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

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3.5 INSTALLATION GENERALLY

Install in accordance with manufacturer's shop drawings and installation instructions.

Fabrication

3.6 FABRICATION

Fabricate frames as detailed on shop drawings. Install glazing, hinges, stays and running gear as scheduled. Provide temporary bracing and protection. Temporarily secure all opening elements for transportation.

3.7 TIMBER REVEALS

Before fixing to aluminium frames, ensure that timber reveals which are being painted have been primed on all surfaces. Securely fix reveals through aluminium fin.

3.8 HARDWARE GENERALLY

Factory fit all required and scheduled hardware. Account for all keys and deliver separately to the site manager.

3.9 SAFETY STAYS

Factory fit safety stays to all windows scheduled for safety stays and to all windows where safety stays are required to comply with NZBC F4/AS1 4.0, Opening windows.

3.10 PASSIVE VENTILATION

Factory fit all required and scheduled passive ventilation systems to NZBC G4/AS1, paragraph 2.2.2.5, NZS 4303 and manufacturer's requirements.

Installation - windows and doors

3.11 SUPPLY OF FIXINGS

Use only fixings and fastenings recommended by the manufacturer of the component being fixed.

3.12 EXPOSED FIXINGS AND FASTENINGS

Fixings and fastenings exposed to the weather to be aluminium, or Type 304 stainless steel.

3.13 PROTECTED FIXINGS AND FASTENINGS

Fixings and fastenings not exposed to the weather may be hot-dip galvanized steel with a coating weight of 610 g/m² complying with AS/NZS 4680.

3.14 CORROSION PROTECTION

Before fixing, apply suitable barriers of bituminous coatings, stops or underlays between dissimilar metals in contact, or between aluminium in contact with concrete.

3.15 INSTALLATION FIXING

To NZBC E2/AS1, paragraph 9.1.9.10. Fix windows/doors through reveal to frame with a pair of 75 x 3.15mm minimum galvanised jolt head nails or a pair of 8 gauge x 65mm minimum stainless steel screws. Fix at a maximum of 450 centres along all reveals and a maximum of 150mm from reveal ends. Ensure fixings do not penetrate metal flashings.

Install packers between reveals and framing at fixing points, except at the head.

3.16 INSTALLATION CAVITY CONSTRUCTION

Install to WGANZ Window Installation Guide details and drawings including WGANZ sill support bars.

For thresholds with support bars fixed through membranes, pre-fill support bar screw holes with silicone sealant to NZBC E2/AS1, Figure 8.5.6.1D: Junctions with walls for membrane.

3.17 INSTALL FLASHINGS

Install flashings to heads, jambs and sills of frames as supplied and required by the window manufacturer and as detailed on the drawings. Finish head flashings to match window finish.

Place all flashings so that the head flashing weathers the jamb flashings, which in turn weathers over the upstand of the sill flashing. Ensure that sill flashings drain to the outside air.



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Except where window/door frames are recessed, ensure that head flashings over-sail unit by 20mm plus any jamb scriber width at each end.

3.18 COMPLETE AIR SEAL

To NZBC E2/AS1, 9.1.5 Air seals. Form an air-tight seal by means of proprietary expanding foam or sealants used with PEF backing rods, applied between the window / door reveal and structural framing to a depth of 10 - 20mm, to provide a continuous air tight seal to the perimeter of the window or door.

3.19 FIX HARDWARE

Fix all sash and door hardware and furniture as scheduled.

Application - jointing and sealing

3.20 SEAL FRAMES ON SITE

Seal frames to each other and to adjoining structure and finishes, all as required by the window and sealant manufacturer and to make the installation weathertight.. In very high and extra high or greater wind zones, seal between the window head and the head flashing. Do not seal the junction between the sill member and the cladding or sill flashing which must remain open.

3.21 PREPARE JOINTS

Ensure joints are dry. Remove loose material, dust and grease. Prepare joints in accordance with the sealant manufacturer's requirements, using required solvents and primers where necessary. Mask adjoining surfaces which would be difficult to clean if smeared with sealant.

3.22 BACK UP

When using back-up materials do not reduce depth of joint for sealant to less than the minimum required by the manufacturer of the sealant. Insert polyethylene rod or tape back-up behind joints being pointed with sealant.

3.23 SEALANT FINISH

Tool sealant to form a smooth fillet with a profile and dimensions required by the sealant manufacturer. Remove excess sealant from adjoining surfaces, using the cleaning materials nominated by the sealant manufacturer and leave clean.

3.24 IN-SITU TOUCH-UP TO POWDER COATED ALUMINIUM

In situ touch-up of polyester or fluoropolymer coated aluminium is only permitted to minor surface scratching. Otherwise replace all damaged material.

3.25 SAFETY

Indicate the presence of transparent glasses for the remainder of the contract period, with whiting, tape or signs compatible with the glass type. Indicators other than whiting must not be applied to the glass surface. Masking tape must not be used for this purpose.

Completion & Commissioning

3.26 COMPLETION MATTERS

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

4 SELECTIONS

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

4.1 SUPPLY AND INSTALLATION

Supply and installation of the specified APL aluminium joinery.

Supply:	By fabricator
Installation:	TBC

Performance

4.2 THERMAL PERFORMANCE - WINDOWS & DOORS

As Per H1/AS1 A5



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4.3 AIR INFILTRATION

For NZS 4211, table 3 Air infiltration.

Finishes - Powder Coating

4.4 DURALLOY +PLUS - POWDER COATING FINISH

Type:	Polyester organic powder coating
System integrity:	Extra-durable powder coating (AAMA 2603)
Colour:	TBC
Finish:	

Glazing

4.5 GLASS

Type/thickness:	Refer to 4610AG AGP GLAZING RESIDENTIAL for type and thickness.

Hardware

4.6 WINDOW HARDWARE

Window fastener:	TBC

4.7 DOOR HARDWARE

Locks & handles:	~

4.8 HARDWARE FINISH

Finish:	Powder coat
Colour:	Black

Flashings and Sealant

4.9 FLASHINGS

Material/type:	Aluminium
Pattern:	Formed to suit details provided

4.10 WEATHERING SEALANT

Type:	1-part polyurethane moisture curing, elastic joint sealant
Colour:	MS sealant (high performance multi-purpose modified silicone sealant to manufacturers specifications).

Reveals

4.11 TIMBER JAMB REVEALS

Timber species:	Radiata Pine
Grade/treatment:	LOSP / H3.1
Thickness:	19mm
Reveals:	Grooved

Window and door system - RESIDENTIAL SERIES - THERMALHEART+®

4.12 APL RESIDENTIAL THERMALHEART+ FIXED WINDOW

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved

4.13 APL RESIDENTIAL THERMALHEART+ AWNING WINDOW

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved
Fastener range:	Urbo Helix



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4.14 APL RESIDENTIAL THERMALHEART+ SLIDING DOOR

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved
Rail type:	Small rail option (78mm)

4.15 APL RESIDENTIAL THERMALHEART+ HINGED DOOR

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved

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4610AG AGP® GLAZING RESIDENTIAL

1 GENERAL

This section relates to the supply and fixing of **AGP®** glass products for use with APL Window Solutions external and internal joinery in residential type buildings and includes:

- Window and door glazing

This **AGP** section is to be read in conjunction with **APL Window Solutions** branded sections

1.1 RELATED WORK

Refer to 4521AR APL RESIDENTIAL ALUMINIUM WINDOWS & DOORS for aluminium joinery

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:

IGU	Insulating Glass Units
PVB	Polyvinyl Butyral
uPVC	Unplasticised polyvinyl chloride

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 F2/AS1	Hazardous building materials
NZBC H1/AS1	Energy efficiency for all housing, and buildings up to 300m²
NZBC H1/VM1	Energy efficiency for buildings greater than 300m²
AS/NZS 1170.2:2011	Structural design actions - Wind actions
AS/NZS 2208	Safety glazing materials in buildings
AS/NZS 4667	Quality requirements for cut and processed glass
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
BPS	Building Product Specifications

1.4 MANUFACTURER'S DOCUMENTS

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

- Product notes and manufacturing limitations
- Care and maintenance of your AGP glass
- Condensation guide
- AGP Glass handling, storage & transportation guide
- Guide to visual quality of residential glass and insulating glass units (IGUs)
- Insulating glass unit (IGU) warranty

Manufacturer/supplier contact details

Company:	AGP
Web:	www.agpl.co.nz
Email:	technical@agpl.co.nz
Telephone:	07 849 8880

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Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

12 years:	For insulating glass units (IGUs)
12 years:	For float glass
12 years:	For toughened glass
12 years:	For laminated glass

- 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 supply.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 NO SUBSTITUTIONS

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

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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:

- Care and maintenance of your AGP glass
- Condensation guide

Provide this information prior to practical completion.

Compliance information

1.9 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

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

Performance

1.10 THERMAL STRESS ANALYSIS

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

1.11 THERMAL PERFORMANCE - EXTERNAL GLAZING

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

Refer to RELATED WORK sections for Construction R-values for complete windows / glazed doors / curtain walls and/or skylights including glazing.

Performance – Wind (design by contractor)

1.12 DESIGN PARAMETERS WIND - DESIGN BY CONTRACTOR

Design the installation to the manufacturer requirements and as appropriate for the project wind design parameters. Refer to SELECTIONS.

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Quality control and assurance

2 PRODUCTS

Materials, windows and doors

2.1 CLEAR FLOAT GLASS

Clear ordinary transparent float glass for general window/door glazing application. Thickness to NZS 4223.1, NZS 4223.Supp1, NZS 4223.3 and NZS 4223.4.

2.2 OBSCURE GLASS

Translucent rolled glass, sand-blasted or acid etched on one surface for a decorative finish.

2.3 LAMINATED GLASS

Grade A safety glass to AS/NZS 2208 with PVB interlayer.

2.4 TOUGHENED GLASS

Grade A safety glass to NZBC F2/AS1 and AS/NZS 2208.

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

2.5 TINTED FLOAT GLASS

Body tinted float glass. Thickness to NZS 4223.1 and NZS 4223.Supp 1, NZS 4223.3 and NZS 4223.4.

2.6 REFLECTIVE AND COATED FLOAT GLASS

Coated float glass incorporating both solar and thermal insulation properties, or coated float glass with thermal insulation properties only.

2.7 INSULATING GLASS UNITS (IGU'S)

To the performance requirements of NZS 4223.2.
Marking to NZS 4223.2 as modified by NZBC B2/AS1, 3.4.3 Insulating glass units.
Refer to SELECTIONS for specified surfaces of the IGU.
Surface numbering order for glass panes in an IGU are #1, #2, #3, and #4 as follows:

- Surface #1 - outer face of exterior pane
- Surface #2 - cavity face of the exterior pane
- Surface #3 - cavity face of the interior pane
- Surface #4 - outer face of the interior pane

Components, aluminium and uPVC glazing

2.8 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.

2.9 SETTING BLOCKS

APL Window and Door Systems setting blocks consisting of PE, PP or PA material selected to suit the frame and panel type.

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.
Interface between external glazing and other elements 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, and to the AGP Glass handling, storage & transportation guide.

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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 PRE-INSTALLATION REQUIREMENTS

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

3.5 GLASS CONDITION

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

3.6 GLASS THICKNESS

Whether stated in a glazing schedule or not, confirm glass thicknesses to NZS 4223.1, NZS 4223.3, NZS 4223.4. For windows tested to NZS 4211, ensure glass meets the requirements of the window testing.

Determine the final glass thickness based on whether wind loading, or human impact considerations govern.

3.7 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

3.8 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 safety glass.

3.9 SAFETY GLAZING MATERIAL

Use only safety glazing materials defined in NZS 4223.3, that also comply with the relevant requirements of AS/NZS 2208. Ensure material is permanently marked and if cut by the distributor or installer mark each piece to NZS 4223.3, 2.8 Identification.

3.10 CONTAINMENT

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

Assembly

3.11 WORKING OF GLASS

All working of glass as required in NZS 4223.1.

3.12 EDGE WORK

Edge work other than a clean cut. Refer to SELECTIONS/drawings for type.

Installation/application

3.13 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.
Refer to AS/NZS 4667 and NZS 4223.1 for glass and glazing.

3.14 INSTALL SAFETY GLASS

To NZS 4223.3.

3.15 INSTALLING INSULATING GLASS UNITS

Refer to the APL branded window manufacturer's requirements and before glazing ensure that the materials forming the opening are strong enough to accept the weight, the rebates are the correct size and prepared to receive the units to the manufacturers requirements. Fit setting and location blocks and bead glaze units using a compatible sealant.

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3.16 INSTALLING REFLECTIVE AND COATED GLASS

In addition to the type of glazing specified refer to the requirements of the glass manufacturer and ensure that the rebate dimensions, clearances and edge cover are sufficient to allow for the movement created by the particular solar control glass being used. Check thermal stability for the particular location and ensure any sealant or compound is compatible with the coating.

Application aluminium

3.17 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.

Application uPVC

3.18 INSTALL GLASS TO uPVC 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.

Finishing

3.19 SAFETY

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

3.20 MANIFESTATIONS

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

Completion & Commissioning

3.21 COMPLETION MATTERS

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

3.22 COMPLETION - TESTS & CERTIFICATION

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

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4 SELECTIONS

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

Performance - wind

4.1 WIND ZONE - NON-SPECIFIC DESIGN

Refer to general section 1220 PROJECT for design wind pressures.

Glass by type

4.2 AGP GLASS

Refer H1 Report For Glass Requirements

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4710PR PREMIER THERMAL & ACOUSTIC INSULATION

1 GENERAL

This section relates to **Premier Insulation** Glasswool and polyester insulation installed, laid, hung or fitted as thermal and/or acoustic insulation.
It includes:
Premier Glasswool Insulation:

- Premier Glasswool 90mm wall, mid-floor and High Density (HD) ceiling blankets
- Premier Glasswool 140mm wall, mid-floor and skillion roof insulation
- Premier Glasswool ceiling blankets
- Premier Glasswool ceiling segments
- Premier Glasswool masonry wall & service cavity blankets

Premier 100% Polyester Insulation:

- Premier 100% polyester High Density (HD) wall thermal insulation
- Premier 100% polyester acoustic wall and mid-floor insulation
- Premier 100% polyester thermal ceiling blankets
- Premier 100% polyester mid-floor / skillion roof segments
- Premier 100% polyester masonry wall & service cavity blankets
- Premier 100% polyester suspended floor thermal insulation

1.1 RELATED WORK

Refer to 4711PI PREMIER INSULATION - THERMAL for thermal insulation

Refer to 4161 UNDERLAYS, FOILS & DPC for underlays, foil 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:

GSM	Grams per square metre
HD	High Density

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 G6/VM1	Airborne and impact sound
NZBC H1/AS1	Energy efficiency for all housing, and buildings up to 300m²
NZBC H1/AS2	Energy efficiency for buildings greater than 300m²
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 60695.11.5	Fire hazard testing - Test flames - Needle-flame test method - Apparatus, conformity test arrangement and guidance
ISO 140	Acoustics Part 4: Field measurements of airborne sound insulation between rooms
ISO 9705:1993	Fire tests — Full-scale room test for surface products

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

Premier Insulation documents relating to work in this section are:

Premier Insulation Glasswool Data Sheet
Premier Insulation Glasswool Installation Instructions

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BRANZ Appraisal 509 (2024) - Premier Glasswool Insulation
Premier Insulation 100% Polyester Data Sheet
Premier Insulation 100% Polyester Installation Instructions
BRANZ Appraisal 1097 (2024) - Premier Polyester Insulation
Premier Insulation 100% Polyester Suspended Floor Insulation Data Sheet
Premier Insulation 100% Polyester Underfloor Installation Instructions
BRANZ Appraisal 1098 (2024) - Premier Polyester Underfloor Insulation

Manufacturer/supplier contact details:

Company:	Premier Insulation Limited
Web:	www.premierinsulation.co.nz
Email:	projects@premierinsulation.co.nz
Telephone:	0800 467 855

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

- 50 year product durability warranty for **Premier Insulation** products
- Provide this warranty on the **Premier Insulation** Certificate of Warranty standard form (if not available, 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 a material installer/applicator warranty:

- 5 years product installation warranty for **Premier Insulation** products
- Provide this warranty on the **Premier Insulation** Certificate of Warranty standard form (if not available, 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 premierinsulation.co.nz/specifications for a copy of the installation conditions

Requirements

1.7 QUALIFICATIONS GENERALLY

Installers to be experienced in the application and installation of Premier Insulation materials and techniques specified.

For a list of accredited installers contact Premier Insulation.

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 Premier Insulation systems, components or associated products listed in this section.

Products have been selected on specific criteria, including product thicknesses and densities to meet H1 requirements in designed construction systems. No substitutions allowed.

Performance

1.10 NZBC H1 COMPLIANCE CERTIFICATE

Provide H1 Energy Efficiency Compliance Certificate as required - Performance H1.3.1(a) and H1.3.2E. Premier Insulation product will contribute to meeting these requirements.

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1.11 SOUND CONTROL SITE TEST

Site test each sound rated element in accordance with NZBC G6/VM1 to ensure that the specified sound transmission loss has been achieved; using a nominated acoustic consultant. Carry out sound tests wall by wall to ISO 140, part 4 to certify compliance. Rectify any element that does not meet the specified Rw figure.

1.12 SOUND RATING REQUIREMENTS

Provide sound rated wall, floor and ceiling systems as scheduled.

Quality control and assurance

1.13 INSPECTIONS

Compliance information

1.14 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Manufacturer warranty
- Installer 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.

2 PRODUCTS

Materials - Premier Glass Wool Insulation

2.1 PREMIER GLASSWOOL 90mm WALL, MID-FLOOR AND HD CEILING BLANKETS

Made from 90% recycled glass wool bonded with a phenolic resin to form a flexible insulation blanket for installation in wall and mid-floor cavities, and as the bottom layer in double-layer ceiling installations. Available in 1,200mm widths.

Refer to SELECTIONS for R-value, thickness and length options.

2.2 PREMIER GLASSWOOL CEILING SEGMENTS AND BLANKETS

Made from 90% recycled glass wool bonded with a phenolic resin to form a flexible insulation blanket in a roll, or flexible rectangular insulation pieces. Refer to SELECTIONS.

2.3 PREMIER GLASSWOOL 140mm WALL, MID-FLOOR AND SKILLION ROOF

Made from 90% recycled glass wool bonded with a phenolic resin to form a flexible insulation material. Refer SELECTIONS for R-value and thickness options.

2.4 PREMIER GLASSWOOL MASONRY WALL AND SERVICE CAVITY BLANKETS

Made from 90% recycled glass wool bonded with a phenolic resin to form a flexible insulation blanket. Refer to SELECTIONS for R-value and thickness options.

Accessories

2.5 STAPLES/GUN STAPLER

Gun stapler and staples (standard or stainless steel as appropriate) for fixing Premier 100% Polyester Underfloor and Masonry Wall Insulation in place.

2.6 WIRE NETTING

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

2.7 PLASTIC STRAPPING TAPES

Proprietary plastic strapping tape, stapled over framing to retain insulation in unlined wall, ceiling and underfloor locations.

For drained cavities where stud spaces are greater than 450mm and only flexible underlay is used, strapping required to NZBC E2/AS1, paragraph 9.1.1.5.

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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

Before starting installation of **Premier** I**nsulation** materials, check that the location and framing are free from moisture, that the cavities are not interconnected and that mesh, wall and roofing underlays and vapour barriers are in place. Release insulation from packaging and allow to re-loft prior to installation.

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

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Installation/Application

3.5 INSTALL INSULATION - GENERAL

Lay, install, fit and fix insulation without gaps, tucks, folds 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 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 FITTINGS - RESIDENTIAL

Residential recessed light fittings to AS/NZS 3000, 4.5.2.3.5;

- Existing fittings or retrofit situations, fittings may be unmarked
- New fittings can only be labelled - CA 80, CA 90, CA 135, IC, IC-F & IC-4

Refer to clause INSULATION CLEARANCES GENERALLY for clearances.

3.7 INSULATION CLEARANCES GENERALLY

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 **Energy efficiency** 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 larger than the required gap.

The following tables are subject to:

- The requirements of NZS 4246 **Energy efficiency.** 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 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 **Energy efficiency** to maintain gaps.

LIGHT FITTINGS

		Comments

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Type of fitting	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 & 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.

IN-BUILT RECESSED HOT APPLIANCES

Appliance	Minimum insulation clearance	Comments
Electrical heaters	100mm	Clearance may be reduced with non-combustible insulation. Secure insulation.
Gas appliance exposed flame	200mm	Clearance may be reduced with non-combustible insulation or with specific details from the appliance manufacturer. Excludes uncommon appliances, refer NZS 4246 **Energy efficiency.**
Gas appliance flues	75mm	Clearance may be reduced with non-combustible insulation. Secure insulation. Excludes uncommon appliances, refer NZS 4246 **Energy efficiency**.
Oil-fired appliances and flues	230mm	Clearance may be reduced with non-combustible insulation or with specific details from the appliance manufacturer. Secure insulation.
Open fireplace opening	200mm	Clearance may be reduced with non-combustible insulation. Secure insulation.
Brick masonry chimneys	50mm	Clearance may be reduced with non-combustible insulation. Secure insulation.
Metal chimneys & flues	75mm	Clearance may be reduced with non-combustible insulation or with specific details from the appliance manufacturer. Secure insulation.
Solid fuel appliance	600mm	Clearance may be reduced with non-combustible insulation or with specific details from the appliance manufacturer. Secure insulation.
Solid fuel appliance flue	600mm	Clearance may be reduced with non-combustible insulation or with specific details from the appliance manufacturer. Secure insulation.

EXTRACTS, VENTS, PIPES & ROOF UNDERLAY

Application	Minimum insulation clearance	Comments
Ducted fan motors	50mm	Includes ducted range hoods, extractors, etc. Applies to the motor unit and electrical enclosures (not the ducts)
Ducted fan ducts	Abut	Excludes motor unit and electrical enclosures.
Un-ducted fan motors usually discharging to ceiling space	200mm	Includes un-ducted, range hoods, extractors, etc., discharging into roof space. To prevent debris falling into motor. Clearance may be reduced by providing a fixed barrier around the vent.
Passive vents (still in use)	200mm	To prevent debris falling through. Clearance may be reduced, with more cohesive insulation, such as some of the rigid plastic types, or by providing a fixed barrier around the vent.
Plumbing penetrations through floors	100mm	Maintain a 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 CHECK FOILS

Ensure foils are dry, clean, bright, undamaged and free of debris before installing insulation.

3.9 CHECK WALL AND ROOF UNDERLAYS

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

3.10 CHECK VAPOUR BARRIERS

Ensure vapour barriers form a homogeneous sheet vapour barrier before installing insulation.

3.11 LAY WIRE NETTING - UNDER JOISTS / PURLINS

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

3.12 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.

Application - Premier Insulation

3.13 FIT PREMIER INSULATION - WALL

Friction fit **Premier Insulation** segments in place. Carefully scribe cut insulation slightly oversize to maintain friction fit to each other, to smaller spaces and around penetrations. Leave no gaps between, and maintain full thickness of the insulation over the whole of the installation. Do not cover vents and ensure metal flues are cut around to the safety requirements of the fireplace manufacturer. Lift up electrical wires and lay the insulation behind where possible. Refer Premier Insulation product Installation Instructions.

3.14 FIT PREMIER INSULATION - MID-FLOOR

Friction fit Premier Insulation blanket in place between mid-floor joists. Carefully cut insulation slightly oversize to maintain friction fit. Leave no gaps, and maintain full thickness of the insulation over the whole of the installation.

Refer Premier Insulation product Installation Instructions.



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3.15 FIT PREMIER INSULATION - SINGLE LAYER CEILING

Lay **Premier Insulation** blanket over the truss chords/ceiling joists and tightly fit around any truss members, ensuring no gaps. Leave no gaps between and maintain full thickness of the insulation over the whole of the installation. Do not cover vents and ensure metal flues are cut around to the safety requirements of the fireplace manufacturer. Lift up electrical wires and lay the insulation underneath where possible. Maintain a 25mm ventilation gap between roofing underlay and the insulation at all times. Refer to plans and specifications for insulating to the outer perimeter of the roof where space restrictions may not allow the full thickness of insulation to be installed. Refer Premier Insulation product Installation Instructions.

3.16 FIT PREMIER INSULATION - MASONRY WALL

Friction fit Premier Insulation blanket between the strapping to completely fill the whole space between. Slightly oversize lengths for friction fit and tear by hand or cut across the width of the roll. Leave no gaps and maintain full thickness over the whole of the installation. Staple insulation to the strapping each side at the top of each drop to hold the insulation until wall linings are in place. Refer Premier Insulation product Installation Instructions.

Completion

3.17 COMPLETION MATTERS

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

4 SELECTIONS

For further details on selections go to www.premierinsulation.co.nz.
Substitutions are not permitted to the following **Premier Insulation** products, unless stated otherwise.

Premier Glasswool Insulation

4.1 PREMIER GLASSWOOL 90mm WALL, MID-FLOOR AND HD CEILING BLANKETS

Brand:	Premier GlassWool Insulation
Product:	R3.2 140mm Premier Glasswool Midfloor Insulation

4.2 PREMIER GLASSWOOL CEILING SEGMENTS

Brand:	Premier GlassWool Insulation
Product:	R6.3 260mm Premier Glasswool Ceiling Insulation

4.3 PREMIER GLASSWOOL - MASONRY WALL AND SERVICE CAVITY BLANKET

Brand:	Premier GlassWool Insulation
Product:	R1.3 50mm Premier Glasswool Masonry Wall Insulation

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4855JG JURALCO GLASS BALUSTRADE SYSTEMS

1 GENERAL

This section relates to the fabrication, supply and installation of Juralco's range of frameless glass balustrade systems.

It includes:

- Balustrade glazing
- Balustrade mounting system
- Associated components to complete the installation

1.1 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

PFC	Parallel flange channel
SS	Stainless steel

Documents

1.2 DOCUMENTS

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

NZBC B1/VM1	Structural design of buildings
NZBC B2/AS1	Durability provisions for building elements
NZBC F2/AS1	Hazardous Building Materials
NZBC F4/AS1	Safety from falling
NZBC F9/AS1	Means of restricting access to residential pools
AS/NZS 2208	Safety glazing materials in buildings
NZS 4223.3	Glazing in buildings - Human impact safety requirements

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Juralco's Technical Manuals:

- Juralco Edgetec Mini Post Balustrade and Pool Fencing System - Issue 10-24 v1
- Juralco Edgetec Infinity Balustrade System - Issue 3-22 v1
- Juralco Edgetec JH Clamp Balustrade System - Issue 12-23 v1
- Juralco Edgetec Single Disc Anchor Balustrade System - Issue 5-24 v2
- Juralco Edgetec Double Disc Anchor Balustrade System - Issue 7-24 v1
- Juralco Edgetec Matador® Mini Post Balustrade System - Issue 9-23 v1
- Juralco Edgetec PosiGlaze Balustrade System - Issue 11-23 v1
- Juralco Edgetec MegaGrip Balustrade System - Issue 7-24v1
- Juralco Interlinking Rail Systems - Issue 1-24 v1
- Juralco's BPIR documentation for Edgetec Balustrade Systems

Manufacturer/supplier contact details

Company:	Juralco Aluminium Building Products Ltd
Web:	www.juralco.co.nz
Email:	specify@juralco.co.nz
Telephone:	09 478 8018

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

5 years:	For Juralco Edgetec frameless glass balustrade systems

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Powder coat warranty as offered by the powder coat system supplier.

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

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 year: For installation of Juralco balustrade system

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be approved by manufacturer / supplier. If requested provide evidence of qualification / experience prior to commencing work. 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 powder coating care, glass care, stainless steel care and maintenance information as electronic PDF format documents.

Provide this information prior to practical completion.

Compliance information

1.10 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.

Performance - Wind

1.11 DESIGN PARAMETERS WIND

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

Quality control and assurance

1.12 INSPECTIONS



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2 PRODUCTS

Balustrade system

2.1 JURALCO EDGETEC GLASS BALUSTRADE SYSTEM

To NZBC B1/VM1, NZBC B2/AS1, NZBC F2/AS1, NZBC F4/AS1, NZBC F9/AS1, NZS 4223.3. Juralco Edgetec Glass Balustrade System comprises frameless glazing secured by proprietary mounting clamps/anchors. Completed with top rails, handrails, stiffener brackets where required or selected. Refer to SELECTIONS.

Balustrade mounting

2.2 JURALCO EDGETEC INFINITY CLAMP

Infinity clamps, supplied as kit, comprising 6060 T5 grade aluminium extrusion clamps, aluminium extrusion gaskets, rubber gaskets and packers, aluminium extrusion bottom channel where required for top fixing and fasteners required for the clamp assembly. Clamps are completed with powder coated 6060 T5 grade aluminium extrusion cover panel, cover panel end plates and glass bulb seal strips. Refer to SELECTIONS.

Balustrade glazing

2.3 TOUGHENED GLASS

Toughened Grade A Safety glass to AS/NZS 2208.

Components

2.4 ALUMINIUM INTERLINKING TOP RAIL

Interlinking top rail manufactured from powder coated 6060 T5 grade aluminium extrusion, available in 38mm rectangular and 50mm round profile. Components to complete installation, such as end caps, end plate brackets, infill clips, joiners, connectors, gaskets and seals available. Refer to SELECTIONS.

2.5 PVC TAPE / SPACER

General purpose PVC tape made from flexible polyvinyl chloride (PVC) adhesive coated film or similar material spacer for separating powder coated aluminium components from steel and concrete surfaces and interlinking rail fixing brackets from the building structure.

2.6 CONSTRUCTION SEALANT

Bostik Rhodorsil V60 one component neutral cure, high modulus, clear silicone construction sealant.

2.7 FIXINGS

Refer to SELECTIONS. Stainless steel fixings to be of type 316.

Finishes

2.8 FINISHES

Dulux polyester powder coating for aluminium, satin or polished finish for stainless steel. 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 GLAZING SUPPLY

Organise for the supply of glazing by nominated glazing supplier. Refer to SELECTIONS.

3.3 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.

3.4 PRE-INSTALLATION REQUIREMENTS

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

Installation/application

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.6 DRILL FIXING HOLES

Mark out clamp/anchor and fixing locations and drill fixing holes to diameter and depth required by Juralco's Technical Manuals for the specified fastener type.

3.7 INSTALL PVC TAPE / SPACER

Install general purpose PVC tape or similar material spacer to manufacturer's instructions between clamps/anchors and steel or concrete surfaces.

3.8 APPLY SEALANT/ADHESIVE

Apply sealant/adhesive where required by Juralco's Technical Manuals, apply to the sealant/adhesive manufacturer's instructions.

3.9 INSTALL CLAMPS/ANCHORS

Assemble and install clamps/anchors to Juralco's Technical Manuals. Install plumb, level and true to line and face.

3.10 INSTALL GLASS

Install glass panels to Juralco's Technical Manuals plumb, level and true to line. Ensure secure fit of glass panels to clamps/anchors.

3.11 INSTALL INTERLINKING RAILS

Assemble and install interlinking rails to Juralco's Technical Manuals. Attach interlinking rail ends to building structure using end wall plates and to posts using post end brackets.

Completion

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

4.1 GLAZING SUPPLIER



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Juralco Edgetec Infinity balustrade system

4.2 JURALCO EDGETEC INFINITY BALUSTRADE

Location:	Refer Plans
Supplier:	Juralco Aluminium Building Products Ltd
Brand/type:	Juralco Balustrade System
System:	Edgetec Infinity
Glass type:	12mm Toughened
Glass strength:	Minimum 100Mpa
Glass edges:	Polished
Clamp kit:	Refer PS1
Cover:	Refer Details
Corner:	Refer Details
Seal:	Glass bulb seal (JET/IB/CVRBLB250)
Cover finish:	To Match Aluminium Joinery

4.3 INFINITY CLAMP FIXINGS - TIMBER JOIST

Structure:	Timber joist / ~
Fixing method:	Top Fix
Spacer:	Refer Details
Rear cover attach:	Refer Details
Fastener:	Refer Details
Washer:	Refer Details
Nut:	Refer Details

4.4 INFINITY CLAMP FIXINGS - STEEL PFC

Structure:	Steel PFC / Refer Details
Fixing method:	Top Fix
Spacer:	Refer Details
Rear cover attach:	Refer Details
Fastener:	Refer Details
Washer:	24mm∅ x 2.5mm SS (head)
Nut:	M12 SS

Components

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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
- superior finish quality systems
- bracing systems
- fire rated garage boundary wall systems
- wet area systems
- GIBFix® Framing systems
- curved plasterboard 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

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

Requirements

1.4 NO SUBSTITUTIONS

Substitutions are not permitted to any specified GIB® systems, GIB® system components, GIB® plasterboard, associated GIB® products or GIB® accessories.

1.5 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 INSPECTIONS AND ACCEPTANCE

Allow for inspection of the finished plasterboard surface:

- before applying sealer and
- before applying finish coatings or decorative papers,

so that after assessment of the type and/or angle of illumination and its effect on the completed decorative treatment, group approval and acceptance of the surface can be given.

1.7 FIRE RATING REQUIREMENTS

Provide the GIB® fire resistant rated garage boundary wall systems. Refer to SELECTIONS for system/FRR.

Compliance

1.8 COMPLIANCE - BRANZ APPRAISAL 289

GIB® Fire Rated Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 289.

1.9 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.

1.10 COMPLIANCE - BRANZ APPRAISAL 928

GIB EzyBrace® Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 928.

Performance

1.11 BRACING REQUIREMENTS

Braced wall systems to NZS 3604 when tested to BRANZ Technical Paper P21, using:

- GIB Ezybrace® Systems and/or GIB Ezybrace® Bracing Design Software
- GIB Ezybrace® Bracing Supplement Document
- GIB Ezybrace® for Steel Frame Housing (NASH) Software (to NASH Residential and Low-Rise Steel Framing Part 1 2010 Design Criteria)

Refer to drawings for location and type.

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

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GIB Ultraline® high quality surface plasterboard
GIB Fyreline® fire resistant plasterboard
GIB Braceline® & GIB® Noiseline® dual purpose wall bracing & noise control plasterboard
GIB Aqualine® wet area plasterboard
GIB Toughline®
GIB Toughline® Aqua
GIB Curveline® plasterboard for forming tight curves.

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

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
Cove:	GIB-Cove® Bond

2.9 JOINTING TAPE

GIB® jointing tape.

2.10 FIRE/ACOUSTIC SEALANT

GIB Fire Soundseal® ultra low VOC, mulit use acoustic sealant that resists passage of smoke and fire.

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2.11 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 (8-12% recommended for fixing plasterboard to timber framing if air conditioning and/or central heating are to be installed)

If GIB EzyBrace® systems are used in conjunction with GIBFix® Framing System, ensure that the positioning of the GIB HandiBrac® panel hold-down brackets are to the manufacturers recommended placements for the GIBFix® Framing System.

3.5 PRE-INSTALLATION REQUIREMENTS - STEEL FRAMING

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

Framing substrates shall be in accordance to AS/NZS 2589, GIB® Site Guide and GIB X-Block® Radiation Shielding Systems requirement. Refer to GIB® Site Guide.

3.6 CONFIRM LEVELS OF PLASTERBOARD FINISH ACCEPTANCE

Before commencing work, agree in writing upon the surface finish assessment procedure towards ensuring that the quality of finish expectations are reasonable and are subsequently obtained and acceptable.

Do not apply decorative treatment until it is agreed in writing by the contractor, subcontractors and decorator that the specified plasterboard Level of Finish has been achieved.

"Levels of plasterboard finish" is a tool for specifying the required quality of finish when installing and flush stopping GIB® plasterboard **prior** to the application of a range of decorative finishes under various lighting conditions. Refer to **AS/NZS** 2589.

3.7 PROTECTION

Protect surfaces; cabinetwork, fittings, equipment and finishes already in place from the possibility of water staining and stopping damage. Refer to GIB® Site Guide.



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Application

3.8 INSTALL CEILING BATTENS

Install to GIB® Rondo® Ceiling Batten Systems requirements.

3.9 LINING WALLS AND CEILINGS GENERALLY

Form to GIB® Site Guide. Ensure bulk insulation thickness shall not exceed that of the wall framing.

3.10 BOARD ORIENTATION

Minimise joints by careful sheet layout using the largest sheet sizes possible, and generally fixing horizontally. Where part sheets are required for various stud heights they should be positioned so the cut sheet is as low as possible to keep joints below eye level.

3.11 FORM FIRE RATED SYSTEMS

Form to GIB® Fire Rated Systems requirements.

3.12 FORM WET AREA SYSTEMS

Form to GIB Aqualine® Wet Area Systems requirements.

3.13 FORM BRACING SYSTEMS

Form bracing systems to:

- GIB Ezybrace® Systems.

3.14 FORM CONTROL JOINTS

Form control joints to GIB® Site Guide requirements.

3.15 INSTALL TAPE-ON TRIMS

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

Finishing

3.16 FINISHING GENERALLY

To GIB® Site Guide and AS/NZS 2589.

Completion & Commissioning

3.17 COMPLETION MATTERS

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

4 SELECTIONS

Plasterboard

4.1 GIB® STANDARD SYSTEMS WALLS

Plasterboard type / Lining requirements	Thickness	Finish Level
GIB® Standard plasterboard	10mm	~
GIB® Standard plasterboard	13mm	~
GIB Ultraline® plasterboard	10mm	~
GIB Ultraline® plasterboard	13mm	~

4.2 GIB® STANDARD SYSTEMS CEILINGS

Plasterboard type / Lining requirements	Thickness	Finish Level
GIB® Standard plasterboard	13mm	~
GIB Ultraline® plasterboard	13mm	~

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4.3 GIB® WATER RESISTANT SYSTEMS CEILINGS

Plasterboard type / Lining requirements	Thickness	Finish Level
GIB Aqualine® plasterboard	13mm	~
GIB Toughline® Aqua	13mm	~

4.4 GIB® FIRE RATED SYSTEMS

Refer to GIB® Residential Garage Boundary Walls.

Location / Type	Plasterboard type / Lining requirements	FRR / System specification	Finish Level
Refer Details	Refer Details	Refer Details	Refer Details

4.5 GIB® BRACING SYSTEMS

Refer to:

- GIB Ezybrace® Systems

For bracing element location refer to drawn documentation.

Accessories

4.6 GIB® RONDO® CEILING BATTENS

Location: Refer Details
Brand/type: GIB® Rondo® Ceiling battens
Batten type: Gib Rondo GR ~
Clip type: Refer Details

4.7 GIB® TAPE ON EDGE OR CORNER TRIMS

Brand/type: Refer Details

4.8 GIB® EDGE PROFILES

Brand/type: Refer Details



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5171GI GIB® INTERTENANCY BARRIER SYSTEMS

1 GENERAL

This section relates to the supply and installation of GIB® Intertenancy Barrier Systems for Terraced Homes. An intertenancy acoustic and fire rated wall system for timber framed or steel framed buildings consisting of 2x plasterboard lined, timber or steel framed walls incorporating a 25mm thick fire-resistant proprietary central barrier between the framed walls.
It includes:

- GIB® plasterboard linings.
- GIB Barrierline® central barrier.
- Associated components and accessories necessary to complete the system

Winstone Wallboards provides a full suite of technical literature, available at www.gib.co.nz . The main technical literature pertaining to this specification is 'GIB® Intertenancy Barrier System for Terraced Homes - Specification and Installation Manual, dated December 2022.

1.1 RELATED WORK

Refer to 5113G GIB® PLASTERBOARD LININGS for standard plasterboard linings.

Refer to 5174G GIB® PLASTERBOARD IMPACT RESISTING LININGS for high impact linings.
Refer to 5171G GIB® PLASTERBOARD FIRE & SOUND LININGS for fire rated and acoustic linings.

1.2 ABBREVIATIONS

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

The following abbreviations apply specifically to this section:

AWCINZ	Association of Wall and Ceiling Industries New Zealand
FRR	Fire resistance rating
STC	Sound transmission class
IIC	Impact insulation class

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS.

The following documents are specifically referred to in this section:

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 2588	Gypsum plasterboard
AS/NZS 2589	Gypsum linings - Application and finishing
ISO 5660.1	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 1: Heat release rate (cone calorimeter method)
ISO 5660.2	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 2: Smoke production rate (dynamic measurement)

1.4 MANUFACTURER/ SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents 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 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)

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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 (Nov 2014)
GIB® Intertenancy Barrier Systems for Terraced Homes Specification & Installation Manual (December 2022)
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
BRANZ Appraisal 940 (2022) GIB® Intertenancy Barrier Systems for Terraced Homes

Manufacturer/supplier contact details

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

1.5 INFORMATION FOR OPERATION AND MAINTENANCE

Provide the following general operation and maintenance information in electronic PDF format documents:

- completed GIB® Installation Sign-Off sheet
- GIB® Plasterboard Lining Systems Care and Maintenance bulletin.

Warranties

1.6 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	for all GIB® products and systems installed

- Provide the GIB® Product & System Warranty on the manufacturer's standard warranty form.
- Commence the warranty from the date of purchase.

Requirements

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any specified GIB® systems, GIB® system components, GIB® plasterboard, associated GIB® products or GIB® accessories.

1.8 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.9 INSPECTIONS AND ACCEPTANCE

Refer to 5113G GIB® PLASTERBOARD LININGS section for inspection criteria of the finished plasterboard surface:

- before applying sealer
- before applying finish coatings or decorative papers

1.10 SOUND INSULATION REQUIREMENTS

GIB® Intertenancy Barrier Systems for Terrace Homes provide STC options of 61-68 for separating walls. Refer to SELECTIONS for system details and STC ratings. Penetrations through the linings are permitted within limitations. Refer to the GIB® Intertenancy Barrier Systems for Terrace Homes literature to ensure correct forming and treating of penetrations to ensure the specified performance is met. Ensure absence of adjoining flanking paths.

1.11 FIRE RATING REQUIREMENTS

GIB® Intertenancy Barrier Systems for Terrace Homes literature provides an FRR of 60/60/60. Refer to SELECTIONS for system details.

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1.12 BRACING REQUIREMENTS

Refer to 5113G GIB® PLASTERBOARD LININGS section and GIB EzyBrace® Systems literature for bracing requirements of plasterboard linings.

Compliance

1.13 COMPLIANCE - BRANZ APPRAISAL 289

GIB® Fire Rated Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 289.

1.14 COMPLIANCE - BRANZ APPRAISAL 394

GIB® Noise Control Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 394.

1.15 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.

1.16 COMPLIANCE - BRANZ APPRAISAL 928

GIB EzyBrace® Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 928.

1.17 COMPLIANCE - BRANZ APPRAISAL 940

GIB® Intertenancy Barrier Systems for Terraced Homes has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 940.

2 PRODUCTS

Materials: general

2.1 GIB® PLASTERBOARD

Gypsum plaster core encased in a face and backing paper formed for standard and water resistance use, exceeding the requirements of AS/NZS 2588. Refer to SELECTIONS for location, type, thickness and finish.

Central barrier:
GIB Barrierline® - 25mm glass-fibre reinforced core plasterboard encased in heavy-duty liner

Roof space lamination boards:
GIB Weatherline 10mm or 13mm; or GIB Fyreline® 13mm over lining laminate in a ceiling space

Linings to framed walls:
GIB® Standard plasterboard - 10mm and 13mm
GIB Ultraline® - 10mm and GIB Ultraline® Plus 13mm
GIB Braceline/Noiseline® - 10mm and 13mm
GIB Aqualine® - 10mm and 13mm

Components: central barrier

2.2 GIB H STUD

GIB® metal framing comprising GIB® H-Stud, 34mm wide x 25mm folded steel sections from 0.55mm BMT G275 galvanised steel in 3000mm lengths.

To the following limitations;

- NASH Standard Part 2, Paragraph 1.1 and a maximum building height of 10.0m from the lowest ground level to the highest point of the roof when designed in accordance with NASH Standard Part 2.

or;

- with a maximum Gib Barrierline® wall height of 12.0m when used with light steel framing subject to a specific engineering design.

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2.3 PERIMETER CHANNEL

GIB Rondo® P140 Perimeter Channel; 28mm wide folded steel channel section and channel joiners from 0.55mm BMT G275 galvanised steel in 3000mm lengths.

2.4 GIB® WALL CLIP

40mm high x 90mm long x 50mm wide, unequal angle bracket, from 2.0mm extruded aluminium provides lateral support for the central barrier.Install GIB® Wall Clip as a component of the central barrier in accordance with the GIB® Intertenancy Barrier Systems for Terrace Homes literature.

2.5 GIB® WALL STRAP

30mm wide x 110mm long from 3.0mm extruded aluminium provides lateral support for the ends of the central barrier.

Install GIB® Wall Strap as a component of the central barrier in accordance with the GIB® Intertenancy Barrier Systems for Terrace Homes literature.

2.6 FIRE RESISTANT MINERAL WOOL PACKING

Installed to fire-stop at the top of the GIB Barrierline® wall below roofing. Thickness to match cavity. Minimum density 40kg/m3. Refer to relevant insulation section.

Components: framed walls

2.7 METAL ANGLE TRIMS

GIB® galvanized steel slim angle trims.

2.8 TAPE ON TRIMS AND EDGES

Refer to 5113G GIB® PLASTERBOARD LININGS section for tape on trims and edges to plasterboard linings.

2.9 WALL CAVITY INSULATION

Pink Batts R2.2 (90mm) glass wool insulation installed between the studs and nogs in both wall frames. Refer to appropriate PINK BATTS® section. Glass-wool thermal insulation segments for use in framed walls.

Components: general

2.10 FASTENERS

Fastener durability shall be appropriate for the application and environment; be no less than the durability of the material being fixed and be compatible with the material to which it is fixed.

2.11 SCREWS

Type	Size	Purpose
GIB® Grabber® high thread needle point screw	25mm x 6g	Fixing plasterboard to timber Fixing metal components to timber
GIB® Grabber® self tapping drywall screw	25mm x 6g	Fixing plasterboard to steel stud.
GIB® Laminator	38mm x 10g	Fixing 16mm GIB Fyreline® to 25mm GIB Barrierline®
Drill-tip wafer-head screw	16mm x 10g	Joining metal components
Drill-tip wafer-head screw	30mm x 10g	Fixing GIB® Wall Clip to GIB® H-Stud through 16mm GIB Fyreline®
Expansion anchor	40mm x 6mm	Fixing metal components to concrete

Refer to 5113G GIB® PLASTERBOARD LININGS section and GIB® Site Guide for fixing of plasterboard linings.

2.12 JOINTING COMPOUND

System-match bedding compound and finishing compound. Follow the manufacturers' requirements on the appropriate compounds to use with each accessory, specific to each location, to achieve the required level of finish.

Bedding compound:	

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	GIB Tradeset®, GIB Lite Blue®, GIB MaxSet®, GIB ProMix® All Purpose, GIB Plus 4®, GIB Trade Finish® Multi
Finishing compound:	GIB ProMix® All Purpose, GIB ProMix® Lite, GIB Trade Finish®, GIB Trade Finish® Lite, GIB Trade Finish® Multi, GIB Plus 4®
Cove:	GIB-Cove® Bond

2.13 JOINTING TAPE

GIB® jointing tape.

2.14 GENERAL GAP FILLER

GIB® Gap Filler ultra- low VOC multi-purpose acrylic flexible filler.

Finishes: framed walls

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.

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 - 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 and GIB® Intertenancy Barrier Systems for Terrace Homes requirements. Refer to GIB® Site Guide.

Check timber framing moisture content is in accordance with requirements of AS/NZS 2589. Refer to NZBC E2/AS1 and GIB® Site Guide.

Timber framing:	18% maximum for fixing plasterboard to timber (8-12% recommended for fixing plasterboard to timber framing if air conditioning and/or central heating are to be installed)

3.4 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 priorto the application of a range of decorative finishes under various lighting conditions. Refer to AS/NZS 2589.

3.5 FIRE REQUIREMENTS

To maintain fire rating and integrity of the areas noted as 'fire rated' on the drawings between residential units, comply with all relevant aspects of the GIB® Intertenancy Barrier Systems for Terrace Homes literature according to the fire resistance rating (FRR), BRANZ Appraisal 940 and other relevant product manufacturers' recommendations.

Piped and cabled services within GIB® Intertenancy Barrier System timber framing cavities shall be securely fastened to the timber framing, and must not be in contact with, or pass through, the GIB Barrierline® central barrier. Minimum 10mm clearance must be provided between any plumbing or electrical services and the GIB Barrierline® central barrier.

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3.6 ACOUSTIC REQUIREMENTS

To maintain acoustic integrity of the areas noted as 'sound rated' on the drawings, comply with all relevant aspects of the GIB® Intertenancy Barrier Systems for Terrace Homes publication according to the specified sound transmission class (STC) rating, BRANZ Appraisal 940 and other relevant product manufacturers' recommendations.

3.7 BRACING REQUIREMENTS

To maintain bracing integrity of the areas noted as 'bracing' on the drawings, comply with all relevant aspects of the latest GIB Ezybrace® Systems literature and GIB Ezybrace® Systems Software according to the specified bracing unit rating, BRANZ Appraisal 928 and other relevant product manufacturers' recommendations. Refer to 5113G GIB® PLASTERBOARD LININGS section.

3.8 WET AREA REQUIREMENTS

To the areas noted as 'wet area' on the drawings, comply with all relevant aspects of the latest GIB Aqualine® Wet Area Systems publication, BRANZ Appraisal 427 and other relevant product manufacturers' recommendations.

Installation - general

3.9 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.10 INSTALLATION - GENERALLY

Install GIB® Intertenancy Barrier Systems to the GIB® Intertenancy Barrier Systems for Terraced Homes literature to the locations and details shown on the drawings, complete with all system components and accessories, including timber or steel wall framing, cavity insulation, plasterboard wall linings, GIB Barrierline® central barrier, mineral wool packing and fire resistant sealant.

Installation: central barrier - metal framing

3.11 GIB® H-STUD METAL FRAMING

Install GIB® H-Stud as a component of the central barrier, within the specified GIB® Intertenancy Barrier System, to the GIB® Intertenancy Barrier Systems for Terrace Homes.

3.12 INSTALL PERIMETER CHANNEL

All GIB Barrierline®; plasterboard panel-ends, except where jointed with GIB® H-Stud, must be capped with GIB Rondo® 140 Perimeter Channel. Fix GIB Rondo® 140 Perimeter Channel to supporting concrete slab floors with steel anchors spaced at maximum 600mm centres and maximum 150mm from the end of each section.

Installation: central barrier - plasterboard

3.13 INSTALL GIB BARRIERLINE®

Install 25mm GIB Barrierline® plasterboard between GIB® H-Stud metal framing and GIB Rondo® 140 Perimeter Channel to the GIB® Intertenancy Barrier Systems for Terraced Homes.

Installation: framed walls - plasterboard

3.14 INSTALL FIRE RATED SYSTEMS

Install GIB® plasterboard types to selected GIB Barrierline® system specification and GIB® Intertenancy Barrier Systems for Terraced Homes recommendations.

3.15 INSTALL SOUND CONTROL SYSTEMS

Install GIB® plasterboard linings and frame types to GIB Barrierline® system specification and GIB® Intertenancy Barrier Systems for Terraced Homes recommendations.

3.16 INSTALL BRACING SYSTEMS

Refer to 5113G GIB® PLASTERBOARD LININGS section.

3.17 INSTALLATION IN WET AREAS

Refer to 5113G GIB® PLASTERBOARD LININGS section.

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In areas classified as 'Wet Areas' the following linings should be used in lieu of specified internal linings in order to achieve required fire and acoustic ratings:

Specified internal lining	Equivalent Wet area lining
10mm GIB® Standard plasterboard	10mm Aqualine® plasterboard
2x 10mm GIB® Standard plasterboard	2x 10mm Aqualine® plasterboard
10mm Noiseline® plasterboard	13mm Aqualine® plasterboard
13mm Noiseline® plasterboard	13mm Aqualine® plasterboard

Finishing: general

3.18 FINISHING GENERALLY

To GIB® Plasterboard Installation Manual and AS/NZS 2589.

Finishing: framed walls - sections and trim

3.19 FIX FINISHING SECTIONS AND TRIM

Refer to 5113G GIB® PLASTERBOARD LININGS section for fixing of finishing sections and trim.

3.20 FIX COVER MOULDS, CORNICES, SQUARE STOP CORNERS, TAPE ON TRIMS & EDGES

Refer to section 5113G GIB® PLASTERBOARD LININGS section for fixing of cover moulds, cornices, square stop cornices, tape on trims and edges.

Finishing: framed walls - stopping

3.21 FINISHING AND STOPPING

Refer to 5113G GIB® PLASTERBOARD LININGS section for finishing and stopping of plasterboard linings.

Completion

3.22 DOCUMENTS

Ensure that the GIB® Installation Sign-Off Certificate has been completed and signed by the plasterer/stopper. Issue to the owner a copy of the GIB® Plasterboard Lining System Care and Maintenance Bulletin and a copy of the completed GIB® Product and System Warranty.

3.23 COMPLETION MATTERS

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

4 SELECTIONS

To maintain the Winstone Wallboards warranty, substitutions of alternative brands are not permitted to any specified GIB® System, GIB® System components, GIB® plasterboard linings, associated GIB® product or accessories.

For further details on selections go to www.gib.co.nz.

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GIB® Intertenancy Barrier Systems for Terraced Homes

4.1 GIB® INTERTENANCY BARRIER SYSTEM TYPE GBT(L)AB 60b - TWO-WAY FRR 60/60/60

Location:	Refer Details
System:	GBT(L)AB 60b - load bearing
FRR:	60/60/60
Acoustics:	STC 64, Rw 63
Partition width:	Refer Details
Framing:	Double timber framing
Spacing:	~mm between framing
Acoustic Insulation:	Pink Batts® R2.2
Central barrier:	25mm thick fire-resistant GIB Barrierline® central barrier panel between GIB® H-Studs at 600mm centres
Lining:	1x 10mm GIB Noiseline®/GIB Braceline® plasterboard - one side
	1x 10mm GIB Noiseline®/GIB Braceline® plasterboard - other side
Finish level:	Refer Details

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5230 INTERIOR DOORS

1 GENERAL

This section relates to the supply and installation of interior doors.

1.1 RELATED SECTIONS

Refer to glazing section/s for glass type and thickness.

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

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 3610	Specification form profiles of mouldings and joinery

2 PRODUCTS

2.1 TIMBER

To NZS 3602.

2.2 PROFILES, FACINGS, SCRIBERS AND ARCHITRAVES

Traditional profiles to NZS 3610. Proprietary profiles and special profiles as detailed. Pencil radius corners of profiled schedules for paint finish.

2.3 DOORS, PAINTED

Doors as scheduled (without clashing strips).

2.4 CAVITY SLIDERS

Doors hung within a proprietary cavity slider frame and complete with brand-matched sliding door gear.

3 EXECUTION

3.1 SITE MEASURE

Confirm framed openings on site for dimension, plumb and straightness prior to fabrication or ordering of timber joinery. Confirm lintel head and sill deflection for sliding or bi-fold door systems is within the manufacturer's specified tolerances. Provide not less than 10mm unless otherwise required.

3.2 EXECUTION GENERALLY

Manufacture to the 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).

3.3 FACTORY FIT HARDWARE

Factory fit the following where specified: -

- Hinges

3.4 FACTORY FINISHING

Before delivery to site: -

- Brace square and provide protection to assemblies during delivery to site. Where factory glazed, indicate the presence of transparent glasses with whiting, tape or signs compatible with the glass type.

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Internal doors

3.5 CAVITY SLIDERS

Install in accordance with the door manufacturer's requirements, allowing for removal of top trim for maintenance.

Completion

3.6 CHECK

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

3.7 TEMPORARY PROTECTION

On completion remove any temporary protection and leave ready for following work.

4 SELECTIONS

4.1 HOLLOW CORE DOOR, PAINT FINISH

Brand/type: ~
Door facing: ~
Glazing: ~
Finish: ~
Hardware: ~

4.2 CAVITY SLIDER DOOR

Brand/type: ~
Door size: ~
Finish: ~
Hardware: ~

Accessories

4.3 MISCELLANEOUS HARDWARE

Description	Location	Brand/model
Rolling gear:	~	~
Sliding folding gear:	~	~
Louvre sets:	~	~

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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 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

1.2 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

1.3 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

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For materials

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 NO SUBSTITUTIONS

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

Compliance information

1.7 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.

Quality control and assurance

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 PERIMETER CHANNELS

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

2.4 PERIMETER ANGLES

G2 Z275 hot-dipped galvanized perimeter angles 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.



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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.

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 PERIMETER ANGLES

Establish a datum line for the ceiling and fix perimeter angles 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.

3.11 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.

3.12 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.

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.

Materials - GIB Rondo direct fix ceiling batten system

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

Location:	Refer Details
System:	GIB RONDO 310 DIRECT FIX (DF) SYSTEM
Coding:	GR310-DF
Batten type:	310
Batten size:	35mm x 40mm
Batten fixing:	32mm x 7g GIB® Grabber® Dual Thread Screws
Batten spacing:	600Crs
Batten jointer type:	312
Batten jointer size:	55mm x 21mm
Drop height:	35mm

Components

4.2 GIB RONDO 340 PERIMETER CHANNEL

Location:	
Type/Brand:	GIB Rondo 340 perimeter channel
Channel size:	35mm x 24mm x 36mm
Channel to wall fixing:	32mm x 7g GIB Grabber Dual Thread Screws
Batten to channel fixing:	13mm x 7g GIB Grabber Pancake Head Drill Tip Screw

4.3 GIB RONDO GIBFIX PERIMETER ANGLE

Location:	
Type/Brand:	GIB Rondo GIBFIX perimeter angle
Angle size:	45mm x 45mm
Angle to wall fixing:	32mm x 7g GIB Grabber Dual Thread Screws
Batten to angle fixing:	13mm x 7g GIB Grabber Pancake Head Drill Tip Screw

5431S STRANDFLOOR TIMBER FLOORS BY LAMINEX

1 GENERAL

This section relates to the supply and fixing of Laminex® New Zealand Strandfloor® flooring in interior applications.
It includes:

- Strandfloor Square Edge
- Strandfloor Tongue & Groove
- StrandfloorH3.1 Square Edge
- StrandfloorH3.1 Tongue & Groove

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
pMDI	Polymeric methyl diphenyl diisocyanate
VOC	Volatile organic compounds

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
AS/NZS 1860.1	Particleboard flooring - Specification
NZS 3604	Timber-framed buildings
NASH Standard Part 2	May 2019 Light Steel Framed Buildings

CodeMark Certificate CMNZ10003 ver2 - Strandfloor® Flooring
CodeMark Certificate CMNZ10004 ver2 - StrandfloorH3.1® Flooring

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Strandfloor Technical Manual, Edition 11 May 2024
Strandfloor Product Warranty
Strandfloor Strandboard Fire Test Report
Strandfloor and Strandboard Safety Data Sheet
StrandfloorH3.1 and Strandsarking Safety Data Sheet
Strandfloor VOC Certificate
Strandfloor Formaldehyde Emissions Report
BRANZ Appraisal 676 (2021) - Strandfloor Flooring - Amended 09 July 2025
BRANZ Appraisal 677 (2021) - StrandfloorH3.1 Flooring - Amended 09 July 2025

Manufacturer/supplier contact details

Company:	Fletcher Building Ltd
Trading as:	Laminex New Zealand
Web:	www.laminex.co.nz
Email:	info@laminex.co.nz
Telephone:	0800 303 606

Requirements

1.4 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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1.5 NO SUBSTITUTIONS

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

Compliance information

1.6 COMPLIANCE - CODEMARK CERTIFICATE CMNZ10004

StrandfloorH3.1 meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CMNZ10004.

1.7 COMPLIANCE - BRANZ APPRAISAL 677

StrandfloorH3.1 has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 677.

Performance - fire

1.8 SURFACE FIRE PERFORMANCE - UNFINISHED FLOORING

Unfinished Laminex Strandfloor / StrandfloorH3.1 has a critical radiant flux 2.2kW/m2 as defined by BPS, Table 8.1.2.1: Generic critical radiant flux values for some substrate and coating combinations.

Performance - bracing

1.9 BRACING REQUIREMENTS

Floor diaphragms on timber joists as part of a structural bracing system to meet the requirements of NZS 3604, Section 5 Bracing Design. Floor diaphragms on steel joists as part of a structural bracing system to meet the requirements of NASH Standard Part 2, Section 5 Bracing.

2 PRODUCTS

Materials

2.1 LAMINEX STRANDFLOORH3.1 TONGUE AND GROOVE FLOORING

StrandfloorH3.1 Tongue and Groove 20mm thick high density wood-base sheet flooring to AS/NZS 1860.1. Manufactured from pMDI resin bonded reconstituted wood strands. Sheets contain a wax emulsion for additional moisture resistance. Available in 2400mm x 1200mm and 3600mm x 1200mm sheets with 4.5mm wide x 9.5mm deep groove to one long edge and rigid polypropylene tongue to the opposite long edge. FSC-COC and PEFC-COC certified. Refer to SELECTIONS.

Components

2.2 MECHANICAL FIXING

Refer to SELECTIONS.

2.3 ADHESIVE

Elastomeric construction adhesive or polyurethane paste adhesive. Refer to SELECTIONS.

Accessories

2.4 WOOD FILLER

Wood dough type filler, tinted to match.

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 WEATHER EXPOSURE

Laminex Strandfloor flooring not to be exposed to weather for more than 8 weeks.

Laminex StrandfloorH3.1 flooring not to be exposed to weather for more than 12 weeks.

3.4 PRE-INSTALLATION REQUIREMENTS

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

Moisture content:	18% maximum for timber floor structure
Moisture content:	15% maximum for timber substrate flooring
Moisture content:	70% maximum relative humidity at concrete surface

Installation/application general

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.6 LAYING PATTERN

Lay flooring sheets printed face down and closely butted in a staggered layout with an 8mm sheet edge clearance to fixed objects including columns and bottom plates.

3.7 INSTALLATION GENERAL - EXISTING TIMBER SUBSTRATE FLOORING

Re-fix, re-punch and coarse sand existing timber substrate flooring to a flat surface. Clean dust and debris.

3.8 INSTALLATION GENERAL - CONCRETE FLOOR

Concrete surface to be clean, sound, dry and dust free with a maximum allowable deviation of 5mm over 3m. Vacuum concrete surface and use damp cloth/sponge/mop to remove loose particles.

3.9 SUPPORT SHEET EDGES AND JOINTS - TONGUE & GROOVE

Fully support short edges and joints. No support is required to long edges (i.e. tongue and groove joints).

Application adhesive

3.10 APPLY ADHESIVE TO JOISTS

Prior to laying flooring sheets, apply adhesive in 5mm beads to top of floor joists and nogs

3.11 APPLY ADHESIVE TO SHEET EDGES

Following fixing of flooring sheets, apply adhesive in 5mm beads to the sheet edge adjacent to the next sheet laid.

3.12 APPLY ADHESIVE TO SHEET GROOVES

Prior to inserting tongues into grooves, apply adhesive in 2mm beads to grooves.

Installation/application - Laminex Strandfloor Tongue & Groove - timber/steel joist floors

3.13 INSTALL FIRST ROW TONGUE & GROOVE FLOORING

Place each sheet of first row over adhesive with long edge spanning across at least 3 joists and sheet edges centred over joists. Mechanically fix along boundary joist long edge only.

3.14 INSTALL ADDITIONAL ROWS TONGUE & GROOVE FLOORING

Install second row sheets repeating the process for first row and driving tongue into groove using a timber block and heavy hammer as per manufacturer's instructions. With second row laid down, first row can be fully fixed. Install additional rows repeating the process for first and second row.

3.15 NAIL FIXING - TONGUE & GROOVE

Nail fix at maximum 150mm centres around sheet perimeter with 15mm clearance to tongue and groove sheet edge and 10mm clearance to short sheet edge. Nail fix at maximum 200mm centres along intermediate supports. Fix nails down slightly skewed in alternating directions, except for corner vertical nails. Finish nails flush with sheet surface.



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3.16 SCREW FIXING - TONGUE & GROOVE

Screw fix at maximum 150mm centres around sheet perimeter with 15mm clearance to tongue and groove sheet edge and 10mm clearance to short sheet edge. Screw fix at maximum 200mm centres along intermediate supports. Finish screws flush with sheet surface.

Surface preparation for floor finishes

3.17 PREPARE SURFACE FOR FINISHES

For floor coverings: tighten fixings, punch nails/tighten screws prior to sanding.

Carpet:	Single cut with a drum or belt sander:	60 - 100 grit
Sheet vinyl:	Single cut with a drum or belt sander:	60 - 100 grit

Installation of vinyl floor covering requires the application of a flexible or sheet underlayment. Refer to vinyl manufacturer technical installation data.

For clear finishes: tighten fixings, punch nails/tighten screws, and fill nail holes with wood filler prior to sanding.

Clear coating:	1st cut with a drum sander:	40 - 80 grit
	2nd cut with a disc sander:	100 grit
	3rd cut with disc sander:	120 - 150 grit

Follow coating manufacturers' instructions.

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

4.1 LAMINEX STRANDFLOORH3.1 TONGUE & GROOVE WOOD FLOORING

Location:	Refer Plans
Supplier:	Laminex New Zealand
Brand:	StrandfloorH3.1 Tongue & Groove
Sheet thickness:	20mm
Sheet size:	To Suit Layout

Fixings

4.2 FIXINGS TO TIMBER JOIST FLOOR

Adhesive:	Sika Nailbond Premium, Bostik Alpha Grip, Gorilla Grip, HB Fuller Sturdi Bond
Mechanical fixing:	Galvanized, 45mm x 8g self-drilling screws

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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:

~ 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.

2.3 ARDEX WPM 300 MOISTURE BARRIER
Two-component, water-based, epoxy polyamide primer/barrier hydrostatic resistant coating.

Materials - waterproofing

2.4 ARDEX WPM 002
Two component, fibre reinforced, acrylic polymer, liquid waterproofing membrane.

2.5 ARDEX WPM 155 RAPID
One component, polyurethane-acrylic, fast drying, liquid waterproofing membrane.

2.6 ARDEX WPM 750
Fleece-lined, synthetic rubber sheet membrane, 0.75mm thick, 1.4m wide x 20m long rolls.

Materials - adhesives

2.7 ARDEX X 17
Flexible, polymer modified, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.8 ARDEX X 18
Flexible, polymer fortified, fibre reinforced, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.9 ARDEX X 77
Fibre reinforced, polymer modified adhesive. Classified C2FTES1 to ISO 13007.1.

Materials - grout

2.10 ARDEX FG 8
Fine sanded, cement-based, standard grout for joints 1mm to 8mm wide. Classified CG2W to ISO 13007.3.

2.11 ARDEX FS-DD
Non-sanded, cement-based grout for joints 1mm to 4mm wide. Classified CG1 to ISO 13007.3.

2.12 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

2.13 ARDEX E 90
Synthetic dispersion additive for use with ARDEX cement-based adhesives, to increase bond strength, elasticity and water resistance.

2.14 ARDEX ABALASTIC
Liquid polymer additive for use with cement-based adhesive to improve adhesion, water resistance and flexibility.

2.15 ARDEX GROUT BOOSTER
Water-based synthetic polymer grout additive for use with cement-based grouts to improve adhesion strength, flexibility and abrasion resistance.

Components

2.16 ARDEX ST TAPE
Uncured, self-adhesive butyl tape, fleece lined one side.

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2.17 ARDEX CA 750 CONTACT ADHESIVE
Water-based contact adhesive.

2.18 ARDEX CA 20 P PLUS CONSTRUCTION ADHESIVE
One part, flexible, silane modified polymer adhesive.

2.19 TRIMS
Tile trims and edge strips. Available in aluminium, brass and stainless steel. Refer to SELECTIONS.

2.20 MOVEMENT JOINT - ANGLE
Metal or PVC angle. Refer to SELECTIONS.

2.21 MOVEMENT JOINT - INSERT
Polyurethane or neoprene insert. Refer to SELECTIONS.

2.22 MOVEMENT JOINT - SEALANT
One part, flexible acetic or neutral cure silicone sealant for joints 1mm to 30mm. Refer to SELECTIONS.

2.23 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 MOISTURE BARRIER
Spray fine mist of water over substrate. Roll moisture barrier liberally over entire substrate. Apply two coats.

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3.8 APPLY PRIMER

Sponge, brush or roll primer liberally over entire substrate.

Installation - waterproofing

3.9 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.

3.10 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

3.11 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.

3.12 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.

3.13 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.

3.14 APPLY ADHESIVE

Mix adhesive to ARDEX instructions. Spread adhesive over prepared substrate with a notched trowel to ARDEX recommended bed thickness.

3.15 INSTALL TRIM

Press trim into wet adhesive.

3.16 INSTALL MOVEMENT JOINT ANGLE

Press angle into wet adhesive.

3.17 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.



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Installation - grout

3.18 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.

Installation - movement joint

3.19 INSTALL MOVEMENT JOINT INSERT

Place insert between movement joint angles.

3.20 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

3.21 COMPLETION MATTERS

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

4 SELECTIONS

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

4.1 TILES

Refer Interior Design Package

4.2 ARDEX MOISTURE BARRIER

Location:	
Substrate:	Concrete
Moisture barrier:	ARDEX WPM 300

ARDEX Tiled Internal Walls

4.3 ARDEX INTERNAL WET AREA WALL TILING SYSTEM OVER PLASTERBOARD

Location:	
Substrate:	Plasterboard
Primer:	ARDEX Multiprime
WPM:	ARDEX WPM 155 Rapid
Adhesive:	ARDEX X 17 (sui
Grout:	ARDEX FS-DD with ARDEX Grout Booster (for tile joints 1mm to 4mm wide)
Grout colour:	Refer Interior Design Package

Components

4.4 TRIMS

Refer Interior Design Package

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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:

- Acoustic underlays
- 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)

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BRANZ Appraisal 925 (2024) - ARDEX WPM 1000 External Deck Membrane

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:

~ 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:

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 - Slip resistance

1.12 SLIP RESISTANCE - SURFACES EXEMPT FROM TESTING
Walking surfaces comply with NZBC D1/AS1, Table 2 for slip resistance requirements and are exempt from testing.

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.

2.12 ARDEX WPM 300 MOISTURE BARRIER
Two-component, water-based, epoxy polyamide membrane/barrier hydrostatic pressure resistant coating.

Materials - waterproofing

2.13 ARDEX WPM 001
One component, fibre reinforced, acrylic polymer, liquid waterproofing membrane.

2.14 ARDEX WPM 002
Two component, fibre reinforced, acrylic polymer, liquid waterproofing membrane.

2.15 ARDEX WPM 155 RAPID
One component, polyurethane-acrylic, fast drying, liquid waterproofing membrane.

2.16 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

2.17 ARDEX X 17

Flexible, polymer modified, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.18 ARDEX X 18

Flexible, polymer fortified, fibre reinforced, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1

2.19 ARDEX X 77

Fibre reinforced, polymer modified adhesive. Classified C2FTES1 to ISO 13007.1.

2.20 ARDEX X 56

Highly-flexible and fast setting polymer modified adhesive. Classified C1ES2 to ISO 13007.1.

2.21 ARDEX OPTIMA

Highly-flexible, two part adhesive with high initial grab qualities. Classified C2TS2 to ISO 13007.1.

2.22 ARDEX X 10 GREY

Flexible, polymer fortified, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C1TES1 to ISO 13007.1.

2.23 ARDEX S28 NEU

Fibre reinforced, rapid hardening, cement-based adhesive. Classified C2FTES1 to ISO 13007.1.

2.24 ARDEX QUICKBOND

Quick setting polymer modified adhesive. Classified C2FT to ISO 13007.1.

2.25 ARDEX WA 100

Two part epoxy adhesive. Classified R2T to ISO 13007.1.

Materials - grouts

2.26 ARDEX FG 8

Fine sanded, cement-based standard grout for joints 1mm to 8mm wide. Classified CG2W to ISO 13007.3.

2.27 ARDEX FS-DD

Non-sanded, cement-based grout for joints 1mm to 4mm wide. Classified CG1 to ISO 13007.3.

2.28 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

2.29 ARDEX ABALASTIC

Liquid polymer additive for use with cement-based adhesive to improve adhesion, water resistance and flexibility.

2.30 ARDEX GROUT BOOSTER

Water-based, synthetic polymer grout additive for use with cement-based grouts to improve adhesion strength, flexibility and abrasion resistance.

Undertile heating

2.31 UNDERTILE HEATING

Refer to appropriate underfloor heating section for electric heating systems under tiles.

Components

2.32 ARDEX ST TAPE

Uncured, self-adhesive butyl tape, fleece lined one side.



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2.33 ARDEX CA 750 CONTACT ADHESIVE

Water-based contact adhesive.

2.34 TRIMS

Tile trim, edge strips, floor finish divider strips and weather bars. Available in aluminium, brass and stainless steel. Refer to SELECTIONS.

2.35 MOVEMENT JOINT - SEALANT

One part, flexible acetic or neutral cure silicone sealant. Refer to SELECTIONS.

2.36 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 ARDEX WPM 300 MOISTURE BARRIER

Spray fine mist of water over substrate. Spread barrier evenly over entire substrate with a stiff nylon broom. Apply second coat with a long nap roller.

3.8 APPLY PRIMER

Sponge, brush or roll primer liberally over entire substrate.

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3.9 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.

3.10 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.

3.11 INSTALL UNDERTILE HEATING

Refer to appropriate underfloor heating section for electric heating system under tiles.

3.12 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.

3.13 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.

3.14 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.

3.15 APPLY ADHESIVE

Mix adhesive to ARDEX instructions. Spread adhesive over prepared surface with a notched trowel to ARDEX recommended bed thickness.

3.16 INSTALL TRIM

Press trim into wet adhesive.

3.17 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.

3.18 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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3.19 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

3.20 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

Refer Interior Design Package

4.2 ARDEX MOISTURE BARRIER

Location:	
Substrate:	Concrete
Type:	ARDEX WPM 300

ARDEX Tiled Internal Floors

4.3 ARDEX INTERNAL TILING SYSTEM OVER CONCRETE FLOOR - WET AREA

Location:	
Substrate:	Concrete
Primer:	ARDEX Multiprime
WPM:	WPM155
Adhesive:	ARDEX X 17 (suitable for large format tiles)
Grout:	Refer Interior Design Package
Grout colour:	ARDEX FS-DD with ARDEX Grout Booster (for tile joints 1mm to 4mm wide)

4.4 ARDEX INTERNAL TILING SYSTEM OVER CONCRETE FLOOR - HEATED WET AREA

Location:	
Substrate:	Concrete
Heating system:	Refer Undertile Heating section
Primer:	ARDEX Multiprime
WPM:	ARDEX WPM 155 Rapid
Adhesive:	ARDEX X 17
Grout:	ARDEX X 17
Grout colour:	Refer Interior Design Package

4.5 ARDEX INTERNAL TILING SYSTEM OVER TIMBER SHEET FLOORING - WET AREA

Location:	
Substrate:	Plywood
Levelling:	
Primer:	ARDEX P 9
WPM:	ARDEX WPM 155 RAPID
Adhesive:	
Grout:	~
Grout colour:	~

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4.6 ARDEX INTERNAL TILING SYSTEM OVER TIMBER SHEET FLOORING - HEATED WET AREA

Location:	~
Substrate:	Plywood
Heating system:	Refer Undertile Heating section
Levelling:	ARDEX K 65
Primer:	ARDEX P 9
WPM:	~
Adhesive:	~
Grout:	~
Grout colour:	~

4.7 ARDEX INTERNAL TILING SYSTEM OVER CFC FLOORING OVERLAY - HEATED WET AREA

Location:	~
Substrate:	Compressed fibre cement sheet overlay
Heating system:	Refer Undertile Heating section
Levelling:	ARDEX K 65
Primer:	~
WPM:	~
Adhesive:	~
Grout:	~
Grout colour:	~

Components

4.8 TRIMS

Location:	~
Supplier:	~
Type:	~
Material:	~

4.9 MOVEMENT JOINT - BACKING ROD & SEALANT

Location:	~
Backing rod:	~
Diameter:	~
Sealant:	~
Sealant colour:	~

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6311 TIMBER STRIP, BLOCK & PLANK FLOORING

1 GENERAL

This section relates to the supply, laying and finishing of timber flooring as an overlay, including underlays over the existing substrate.
It includes:

- laminated timber
- solid timber

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

The following definitions apply specifically to this section:
~

Documents

1.2 DOCUMENTS

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

NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC D1/AS1	Access routes
AS/NZS 1859.4	Reconstituted wood-based panels - Specifications - Wet-processed fibreboard
AS/NZS 1860.1	Particleboard flooring - Specifications
AS/NZS 2269.0	Plywood - Structural - Specifications

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Manufacturer/supplier contact details

Company:	~
Web:	~
Email:	~
Telephone:	~

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

~ years:	For ~

- 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:

1 years:	For ~

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 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.

Performance

1.8 TESTING MOISTURE CONTENT

Sample and test the substrate to ensure that moisture content is within the limits specified. Provide a written record.

1.9 SURFACE FIRE PERFORMANCE

Flooring to be non-combustible or have a Critical Radiant Flux to NZBC C/AS2, Table 4.12.3.1: Critical radiant flux requirements for flooring (kW/m2). Refer to SELECTIONS.

2 PRODUCTS

Materials

2.1 FOAM UNDERLAY

2mm Thick, closed cell foam underlay to provide a moisture membrane.

2.2 TIMBER STRIP, BLOCK AND PLANK FLOORING

Refer to SELECTIONS for product selection.

2.3 TIMBER TRIM

Skirting, edge strip, reducer strip and nosing as detailed and to match overlay flooring.

Accessories

2.4 FOAM UNDERLAY TAPE

Moisture resistant tape, 48mm wide.

2.5 CONCRETE SEALER

Two part water based epoxy coating.

2.6 EXPANSION STRIPS

Coloured silicone flexible expansion sealant.

2.7 EXPANSION COVERS

Selected expansion covers as supplied.

2.8 ADHESIVE, FLOATING

PVA or aliphatic resin, as recommended by the overlay flooring supplier.

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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Accept packs of timber and accessories undamaged and dry. Store on level, dry surfaces in non-traffic, non-work areas that are enclosed and dry. Avoid damage to timber.

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. Carry out such additional preparatory work as required in bringing the substrate to suitable condition.

Check for moisture content by hygrometer. Do not commence laying flooring until readings for the whole area are within acceptable levels as follows:

Moisture content:	Timber substrate - 8 -12% for air conditioned buildings - 10 -14% for intermittently heated buildings - 12 -16% for unheated buildings
	Concrete substrate 60-70%RH

3.4 BEFORE COMMENCING WORK

Ensure that the building is enclosed, wet work complete, doors hung and lockable, finishes and trim complete, and good lighting available, and in the case of air-conditioned buildings the air-conditioning operating for 6 weeks, before starting work.

3.5 PREPARATION

Check that the timber supplied is as specified, of a consistent colour and grain and sufficient to complete the work. Reject timber that varies widely in colour or grain. Reject timber that is damaged. Check the moisture content of the timber to ensure it is at the required level for the installation environment.

Check laminated strip and plank flooring to ensure it has been supplied at the moisture content recommended by the suppliers for the proposed location. Do not remove planks from packs until just prior to installation.

3.6 CARRY OUT THE WORK

Carry out the work to conform with this specification and in accordance with the timber floor supplier's technical requirements.

3.7 PROTECTION

Protect adjoining work surfaces and finishes during the installation.

3.8 LAYOUT

Before beginning the installation, confirm the proposed layout of the timber, grain direction, any other visual considerations of the finished work and specified expansion requirements relating to the specified product. Minimise in number with no cut planks less than half width and only at the perimeter of the work.

3.9 SURFACE TOLERANCES, FLOATING

Substrate to have no deviations greater than 5mm over a 3 metre straightedge in any given direction and no abrupt variations greater than 2mm over 250mm.

Application - general

3.10 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.



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Application - surface preparation - new

3.11 PREPARATION NEW CONCRETE

Clear substrate of debris, then vacuum to remove dust. Refer to allowable surface tolerances. Check for moisture content by hygrometer. Do not commence installation until the hygrometer readings show 60-70%. Apply concrete sealer if required before commencing flooring installation.

3.12 PREPARATION, NEW PLYWOOD OR PARTICLEBOARD

Clear substrate of debris, machine sand to make level, then vacuum to remove dust. Refer to allowable surface tolerances.

Application - installation

3.13 LAYING, FLOATING

Install 2mm foam underlay to the total floor area, in long, continuous runs, allowing to cove up walls by 50mm. Tape joints using moisture resistant tape, to create an impervious membrane. Install the timber floor strictly in accordance with the flooring supplier's stated requirements. Ensure the required expansion gap is left at perimeters and around fixed obstacles.

3.14 EXPANSION GAPS, PERIMETERS

Calculate expansion gaps strictly to manufacturer's requirements, to suit the environment, size of the installation and product type.

3.15 EXPANSION STRIPS

Apply coloured silicone flexible expansion sealant supplied by the flooring manufacturer to match the dimensions of the expansion gap flush with the finished flooring. Apply to flooring manufacturer's directions.

3.16 EXPANSION COVERS

Cover expansion joints using matching expansion joint covers supplied by flooring manufacturer.

Finishing

3.17 SURFACE FINISHING, UNFINISHED FLOORS

Allow the adhesive to cure fully and then finish the timber surface with five fine sandings.

3.18 CLEAN TIMBER FLOORING

Leave timber flooring surfaces free of adhesive, dirt and debris. Vacuum off, damp mop with a low-foam neutral detergent and allow to dry.

Completion

3.19 PROTECTION

Provide the following temporary protection of the finished work:

~

3.20 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.

Performance – Fire Surface Properties

Materials

4.1 TIMBER TONGUE AND GROOVE FLOORING

Refer Interior Design Package

4.2 TIMBER TRIM

Refer Interior Design Package



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6511 CARPETING

1 GENERAL

This section relates to the supply and installation of carpet laid conventionally (stretched), direct stuck or double bonded (double direct stuck).
It includes:

- carpet underlay
- woven sheet carpet

1.1 RELATED WORK

Refer to ~ for ~

Documents

1.2 DOCUMENTS

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

NZBC C/AS2	Protection from fire for buildings other than risk group SH
AS/NZS 2270	Plywood and blockboard for interior use
AS/NZS 2455.1	Textile floor coverings - Installation practice - General
BPS	Building Product Specifications

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

~

Manufacturer/supplier contact details

Company:	~
Web:	~
Email:	~
Telephone:	~

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

1 year:	For materials

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

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

1 year:	For execution

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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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.

2 PRODUCTS

Materials

2.1 UNDERLAY

To AS/NZS 2455.1 Soft underlay and underlays manufacturer's requirements.

Refer to SELECTIONS for product selection.

2.2 CARPET

To AS/NZS 2455.1 Textile floor coverings.

Refer to SELECTIONS for product selection.

Components

2.3 BINDER BARS

Anodised aluminium section with fluted face.

2.4 DIVIDER STRIPS

Hardwood strips 20mm x 15mm or as specified. Refer to SELECTIONS for type and size.

2.5 EDGE GRIPPER

Timber/plywood to AS/NZS 2270 with steel grippers to carpet manufacturer's requirements, constructed of sufficient pins and nails so as to withstand a minimum stretching force of 6580N over a 1220 mm length.

Accessories

2.6 TAPE

To carpet manufacturer's requirements.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

Handle carpet on flat dollies using carpet cradles, with probes on fork- lifts and without sharp bending or folding. Store carpet in flat bins with a maximum height of three rows. Keep dry. Protect from damage.

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 all fittings and fixtures around which the carpet is to be scribed are in place. Carry out such additional preparatory work as required in bringing the substrate to suitable condition.

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Confirm moisture content of substrate in accordance with AS/NZS 2455.1. Appendix B Do not commence laying carpet until readings for the whole area are within acceptable levels as follows:

Moisture Content:	Timber substrate - 8 -12% for air conditioned buildings - 10 -14% for intermittently heated buildings - 12 -16% for unheated buildings
	Concrete substrate 75%RH

3.4 BEFORE COMMENCING WORK

Ensure that the building is enclosed, wet work complete, doors hung and lockable, finishes and trim complete, and good lighting available, before starting work.

3.5 TEMPERATURE

Acclimatise carpet to a room temperature above 15°C through the whole of the installation.

3.6 PROTECTION

Protect adjoining work surfaces and finishes during the carpet installation.

3.7 TAPE

Tape for binding and seaming using type and width required by the carpet manufacturer to suit the specified carpet and the standard of performance required.

3.8 LAYING GENERALLY

Carry out the whole of the work to AS/NZS 2455.1 and to the flooring manufacturer's requirements.

3.9 LAYOUT

Plan the general layout so that:

- seams run lengthways
- traffic runs along the seam
- light from windows is not across the seam
- pile faces away from the light source.

Application - general / substrate preparation

3.10 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.11 PREPARING NEW WOOD PRODUCT FLOOR

To be level, sanded smooth and dry with loose material and dust removed.

3.12 PREPARING EXISTING CONCRETE FLOOR

Remove existing coverings completely including adhesives, bituminous materials and paints. Patch cracks and depressions with compatible latex patching compound to the carpet manufacturer's requirements. Seal large areas of patching. Leave surface level, smooth and clean with loose material and dust removed. Seal powdery surfaces.

Application - carpet laying

3.13 INSTALLATION, UNDERLAY

Installation to underlay manufacturer's requirements. Lay at right angles to the carpet direction.

3.14 INSTALLATION, CONVENTIONAL SYSTEM

Tape carpet joints, fix grippers to floor and install underlay and carpet to AS/NZS 2455.1, section 3. Stretch carpet tight in both width and length evenly without bowing, square with walls.

3.15 LAYING TO STAIRS

Install on stairs in accordance with AS/NZS 2455.1.

3.16 FIXING TRIMS

Fix binder bars, carpet to carpet bars, and trims to all junctions with other materials and to carpet edges, to the carpet manufacturer's requirements. Ensure that junctions with other materials are neatly formed, with bars and trim securely fastened to the substrate, 20mm from each end and at a maximum of 100mm centres.

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Completion

3.17 PROTECTION

Provide the following temporary protection of the finished work:

~

3.18 SPECIAL PROTECTION

Self Adhesive carpet protective film: ~

3.19 COMPLETION MATTERS

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

4 SELECTIONS

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

Materials

4.1 UNDERLAY

Location	Brand	Type/thickness/weight
~		

4.2 CARPET

Location	Brand/type/weight/code	Installation method
~		

4.3 STAIR CARPET TO AS/NZS 2455.1

Location	Brand/type/weight/code	Installation method
~		

Accessories

4.4 BINDER BARS

Brand: ~
Colour: ~

4.5 DIVIDER STRIPS

Brand/material: ~
Dimension: ~mm x ~mm
Finish: ~

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6700D DULUX PAINTING GENERAL

1 GENERAL

This section relates to the general matters related to painting work using **Dulux** paint.

1.1 RELATED WORK

Refer to 6711D DULUX PAINTING EXTERIOR for exterior paint systems.

Refer to 6721D DULUX PAINTING INTERIOR for interior paint systems.
Refer to 6711DE DULUX ENVIRONMENTAL PAINTING EXTERIOR for environmental exterior paint systems.
Refer to 6721DE DULUX ENVIRONMENTAL PAINTING INTERIOR for environmental interior paint systems.
Refer to 6744D DULUX PROTECTIVE COATINGS for protective coating systems.

1.2 ABBREVIATIONS

The following abbreviations are used throughout this part of the specification:

APAS	Australian Paint Approval Scheme
MPNZA	Master Painters New Zealand Association Inc.
VOC	Volatile organic compound

Documents

1.3 DOCUMENTS

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

AS/NZS 2311	Guide to the painting of buildings
AS/NZS 5131	Structural steelwork - Fabrication and erection
AS/NZS ISO 9001	Quality management systems - Requirements
BPS	Building Product Specifications
WorkSafe	Guidelines for the provision of facilities and general safety in the construction industry
WorkSafe	Guidelines for the management of lead-based paint
MPNZA	Health and Safety Programme

Health and Safety at Work Act 2015

1.4 MANUFACTURER'S DOCUMENTS

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

Dulux DuSpec specification sheets and product data sheets

Copies of relevant literature are available from **Dulux**

Web:	www.dulux.co.nz/specifier or www.duspec.co.nz
Email:	specifier@dulux.co.nz
Telephone:	0800 800 424
Facsimile:	0800 801 424

Warranties

1.5 WARRANTY

Warrant this work under normal environmental and use conditions against failure of materials and execution.

Product warranty: Products must be applied in accordance with application and preparation procedures according to **DuluxDuSpec** Specifications and Product Data Sheets. Contact a **Dulux** Trade Representative for project specific warranties.

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

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Requirements

1.6 NO SUBSTITUTIONS

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

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.

1.7 QUALIFICATIONS

Painters to be experienced competent workers, familiar with Dulux products and the required application techniques specified and may be a member of the Master Painters New Zealand Association Inc. or hold a recognised painter/decorator qualification.

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 Dulux Accredited Painter programme, which recognises painters in the industry who demonstrate high levels of workmanship and pride themselves on their professionalism, customer service and reliability.
Refer to https://www.dulux.co.nz/services/find-a-painter-nz for a list of Dulux Accredited Painters in the local area.

1.8 HEALTH AND SAFETY

Refer to the Health and Safety at Work Act 2015 and WorkSafe: Guidelines for the provision of facilities and general safety in the construction industry. If the elimination or isolation of potential hazards is not possible then minimise hazards 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. Inform employees and others on site of the hazards and put in place procedures for dealing with emergencies.

Refer to WorkSafe: Guidelines for the management of lead-based paint for the required procedures and precautions when:

- treating/removing lead-based paint
- burning off paint
- sanding off paint
- using solvent based paint removers.

1.9 PRIOR TO WORK COMMENCING

Before any work commences painters should verify with architect or specifying authority, that their paint matches a previously supplied standard card or panel. Differently coloured paints will vary in price, opacity and durability. **Dulux** normally only specify two coats of colour but with certain colours such as bold, brights and some corporate colours, three coats may be needed.

1.10 SAFETY DATA SHEETS

Refer to **Dulux** for the safety data sheets for every applicable product and comply with the safety procedures listed. Keep sheets on the site. Refer to www.dulux.co.nz/specifier.

Performance

1.11 DULUX INSPECTION

Permit representatives of **Dulux** to inspect the work in progress and take samples of their products from site if requested.

1.12 INSPECTION OF THE WORK

Inspection of the whole of the work at each of the stages set out in SELECTIONS may be made. Agree a programme that will facilitate such inspection, including notification when each part and stage of the work is ready for inspection.

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2 PRODUCTS

Materials

2.1 PAINT TYPES

Use the manufacturer's complete system and only the product specified.

2.2 MATERIALS GENERALLY

Use only **Dulux** product which are guaranteed for their consistency and performance under AS/NZS ISO 9001 and APAS approval, prepared, mixed and applied as directed in the **Dulux** DuSpec specification sheets, specification manuals and product data sheets.

2.3 THINNERS/ADDITIVES

Use only if and when expressly directed by **Dulux** for their particular product in a particular application.

Accessories

2.4 FILLERS

For recommendations on; fillers, stopping, paint strippers, cleaning agents, etching solutions, mould inhibitors, rust inhibitors, knotting and other commodities used for the surface preparation, refer to the manufacturer of the specified preparation system.

2.5 GYPSUM FILLER - INTERIOR

Finishing compound to match the plasterboard stopping system and finishing grade gypsum plaster to match the fibrous plaster system. For interior surfaces such as paper faced plasterboard use **Dulux** Professional Ultra 5 Surface Prep & Finish as an aid to achieving a Level 5 finish.

3 EXECUTION

Conditions

3.1 EXECUTION

To conform to manufacturer's requirements and those methods, practices and techniques contained in AS/NZS 2311 and WorkSafe: Guidelines for the provision of facilities and general safety in the construction industry.

3.2 PREPARE

Prepare surfaces to **Dulux** requirements.

3.3 COATED SURFACES

Ensure that substrate surfaces are able to achieve the specified finish.

3.4 PRE-PRIMED SURFACES

Sand down any breakdown or damage of the primer to a sound surface and immediately re-prime.

3.5 BRUSH DOWN

Brush down surfaces immediately before application, to remove dust, dirt and loose material.

3.6 COMPATIBILITY

Check that materials are as required by the paint manufacturers for the particular surface and conditions of exposure, and that they are compatible with each other. Use paint from the same manufacturer for each paint system. If not compatible, obtain instructions before proceeding.

3.7 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.

3.8 BACK PAINTING

Co-ordinate with cladding and/or lining installer as to who will do the work and timing.

Exterior



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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 2x coats or 1x coat if pre-primed.
Refer to appropriate exterior paint sections SELECTION clauses for claddings to be back painted.

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 2x coats or 1x 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.

3.9 ANCILLARY SURFACES

The coatings listed 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 instructions before proceeding.

3.10 LEAD-BASED PAINT, ASBESTOS

Handle cautiously lead-based paint and asbestos, if present, as required in the MPNZA Health and Safety Programme and WorkSafe: Guidelines for the management of lead-based paint.

3.11 HARDWARE

Do not paint hinges or hardware that cannot be removed. If items can be removed, carefully remove hardware, fixtures and fittings before commencing work. Set aside where they cannot be damaged or misplaced and replace on completion.

3.12 PROTECTION

Use dropsheets, coverings and masking necessary to protect adjoining fixtures, fittings and spaces from paint drops, spots, spray and damage.

Preparation

3.13 PREPARATION

Refer to the **DuSpec** specification sheets for detailed substrate preparation notes relating to SELECTIONS contained in:

- 6711D DULUX PAINTING EXTERIOR,
- 6721D DULUX PAINTING INTERIOR,
- 6711DE DULUX ENVIRONMENTAL PAINTING EXTERIOR,
- 6721DE DULUX ENVIRONMENTAL PAINTING INTERIOR, and
- www.duspec.co.nz.

Application - before applying final coatings

3.14 OFF-SITE WORK

Carry out off-site preparation and coating under cover, in a suitable environment and with adequate 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 permit air circulation and to prevent sticking of surfaces.

3.15 PRIMING JOINERY

Before priming preservative treated timber ensure that any cut surfaces have been retreated. Liberally coat end grain, allow to soak in and then recoat. Ensure LOSP treated joinery has dried sufficiently to lose odour.

3.16 CONCEALED JOINERY SURFACES

Apply off-site coatings to all surfaces including those which will be concealed when incorporated into the building.

3.17 CONCEALED METAL SURFACES

Apply primer to suit the coating system to all metal surfaces which will be concealed when incorporated into the building.

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3.18 DOORS

Prime or seal and paint all six faces of doors before hanging.

3.19 PUTTY FRONTING

According to the putty manufacturer's instructions allow putty to set, then prime with an appropriate Dulux primer, either **Dulux** 1 Step Acrylic Primer Sealer & Undercoat, or **Dulux** 1 Step Oil Based Primer, Sealer & Undercoat. Fully protect the putty by completing the **Dulux** coating system as soon as it is sufficiently firm.

Application - generally

3.20 PAINTING GENERALLY

Comply with the **Dulux** DuSpec specification sheets, product data sheets and the additional requirements of this work section.

3.21 MIXING

Thoroughly mix paints. Lift any settled pigment and ensure the paint is homogenous.

3.22 ENVIRONMENT

Paint exterior surfaces only in favourable weather conditions:

- 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
- do not paint if temperatures fall outside the range of 10°C and 35°C unless paints with the necessary temperature tolerance have been specified
- do not apply solvent borne paint if moisture is present on the surface

3.23 SEQUENCE OF OPERATIONS

Painting work to generally the following sequence:

- 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 **Dulux**
- Allow the full drying times between coats laid down by **Dulux**
- Do not expose primers, sealers and undercoats beyond a few days 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.

3.24 PAINT APPLICATIONS

Select brush, roller, or pad and apply paint to the requirements of **Dulux** and to obtain a smooth even coating of correct thickness, uniform gloss and colour.

3.25 DRYING TIME

Before handling or applying the next coat of paint, give each coat the full drying time as required by the paint manufacturer. Ensure that surfaces are dry and that condensation does not occur before the paint reaches surface-dry condition.

3.26 LIGHTLY SAND

Lightly sand primers, sealers, undercoats and intermediate coats to remove dust pick-up, protruding fibres and coarse particles. Remove dust immediately before applying the next coat.

3.27 DEFECTIVE WORK

Correct defective work immediately and re-coat as required, following precisely the **Dulux** paint system specified.

3.28 EACH COAT

Each coat of paint and the completed paint system to have the following qualities and properties:

- uniform finish, colour, texture, sheen and hiding power
- the specified number of coats applied
- no blemishes such as runs, sags, crinkling, fat edges, entrained paint skins, hairs, dust, bare or starved patches, cracks, brush marks, ladder marks and blistering

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- proper covering of corners, crannies, thin edges, cracks, end grain and other difficult places of application

Note that some colours may require more than two top coats and/or the use of a tinted undercoat. This is particularly relevant when using bright or high chromatic coloured paints (e.g. colours derived off True Red, Bold Yellow, Orange, and Extra Bright base) or when painting over existing dark colours.

Completion

3.29 CLEAN

Clean adjoining surfaces, glass and fittings of any paint contamination. Clean off glass indicators at completion of the building works. Clean glass inside and out to a shining finish.

3.30 CLEAN EQUIPMENT

Use **DuluxEnviroWash** system for the cleaning of water-based paint and plasters from brushes, rollers, plastering or spray equipment to separate the solids from the water component for safe disposal. Phone 0800 800 424 for information regarding this system.

3.31 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.

3.32 REMOVE

Remove dropsheets, coverings and masking to leave surrounding surfaces and areas clean, tidy and undamaged. Remove debris, unused materials and elements from the site.

3.33 REPLACE HARDWARE

Replace hardware without damage to it or the adjoining surface. Leave properly fitted and in working order.

4 SELECTIONS

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

4.1 SELECTIONS

Refer to 6711D DULUX PAINTING EXTERIOR and 6721D DULUX PAINTING INTERIOR for selections.

Refer to 6711DE DULUX ENVIRONMENTAL PAINTING EXTERIOR and 6721DE DULUX ENVIRONMENTAL PAINTING INTERIOR for selections.



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6721D DULUX PAINTING INTERIOR

1 GENERAL

This section relates to the surface preparation and painting of new and existing interior substrates using **Dulux** interior paint systems.

1.1 RELATED WORK

Refer to 6700D DULUX PAINTING GENERAL for general matters related to painting work.

2 PRODUCTS

2.1 PRODUCTS

Refer to 6700D DULUX PAINTING GENERAL for product clauses.

3 EXECUTION

3.1 EXECUTION

Refer to 6700 PAINTING GENERAL for execution clauses.

4 SELECTIONS

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

Refer to DULUX DuSpec+ for up-to-date VOC levels as these are subject to change.

4.1 BACK PAINTING SCHEDULE

Paint 2 coats (including any pre-prime) usually to match exposed face coating. If there is no coating use water resistant clear finish sealer.

Lining type	Extent of back painting
~	~

Paperfaced plasterboard substrates - new ceilings

4.2 INTERIOR PAPERFACED PLASTERBOARD NEW - CEILINGS - PAINT

Gloss level:	Flat
Coating type:	Water-based
System:	DuSpec+ NZPR00175
Fire rating:	Group Number 1-S, Report Number 5054, BPS, Table 8.5.2.1: Material Group Numbers for some substrate and coating combinations.
1st coat:	DULUX 1 Step Prep Acrylic Primer Sealer & Undercoat @ 14 m²/L
2nd coat:	DULUX Professional Ceiling Flat @ 12.8 m²/L
3rd coat:	DULUX Professional Ceiling Flat @ 12.8 m²/L

Paperfaced plasterboard substrates - new walls

4.3 INTERIOR PAPERFACED PLASTERBOARD NEW - WALLS - PAINT

Gloss level:	Low Sheen
Coating type:	Water-based
System:	DuSpec+ NZDU03737
Fire rating:	Group Number 1-S, Report Number 5054, BPS, Table 8.5.2.1: Material Group Numbers for some substrate and coating combinations.
1st coat:	DULUX 1 Step Prep Acrylic Primer Sealer & Undercoat @ 14 m²/L
2nd coat:	DULUX Wash & Wear 101 @ 16 m²/L
3rd coat:	DULUX Wash & Wear 101 @ 16 m²/L

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7120 HOT & COLD WATER SYSTEM

1 GENERAL

This section relates to piped potable water supply systems from the network utility supply authority water main to designated points and appliances, the installation of hot water heating appliances, distributing piped hot water to other appliances, and the installation of valves.

1.1 RELATED WORK

Refer to 7150 SANITARY FIXTURES, TAPWARE & ACCESSORIES for sanitary fixtures and tapware selections.

Documents

1.2 DOCUMENTS

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

NZBC G4/AS1	Ventilation of buildings
NZBC G11/AS1	Gas as an energy source
NZBC G12/AS1	Water supplies
NZBC G12/AS3	Water supplies
AS 1432	Copper tubes for plumbing, gas fittings and drainage applications
AS/NZS 1477	PVC pipes and fittings for pressure applications
AS/NZS 2032	Installation of PVC pipe systems
AS/NZS 2033	Installation of polyethylene pipe systems
AS 2345	Dezincification resistance of copper alloys
AS/NZS 2492	Cross Linked Polyethylene (PE-X) pipe for pressure applications
AS/NZS 2537.1	Mechanical jointing fittings for use with cross-linked polyethylene (PE-X) for pressure applications. Plastic piping systems for hot and cold water installations - Cross linked polyethylene (PE-X) General
AS/NZS 2537.2	Mechanical joining fittings for use with crosslinked Polyethylene (PE-X) for pressure applications - Plastics piping systems for hot and cold water installations - Crosslinked Polyethylene (PE-X) - Fittings
AS/NZS 2537.3	Mechanical jointing fittings for use with cross-linked polyethylene (PE-X) for pressure applications. Plastic piping systems for hot and cold water installations - Cross linked polyethylene (PE-X) fitness for purpose of system
AS/NZS 2537.4	Mechanical jointing fittings for use with cross-linked polyethylene (PE-X) for pressure applications. Plastic piping systems for hot and cold water installations - Cross linked polyethylene (PE-X) Guidance for the assessment of conformity.
AS/NZS 2642.1	Polybutylene pipe systems - Polybutylene (PB) pipe extrusion compounds
AS/NZS 2642.2	Polybutylene pipe systems - Polybutylene (PB) pipe for hot and cold water applications
AS/NZS 2642.3	Polybutylene pipe systems - Mechanical jointing fittings for use with polybutylene (PB) pipes for hot and cold water applications
AS/NZS 2845.1	Water supply - Backflow prevention devices - Materials, design and performance requirements
AS 2845.3	Water supply - Backflow prevention devices - Field testing and maintenance
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
AS/NZS 3500.1	Plumbing and drainage - Water services
AS/NZS 3500.4	Plumbing and drainage - Heated water services
NZS 3501	Specification for copper tubes for water, gas and sanitation

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AS 3688	Water supply and gas systems - metallic fittings and end connectors
AS/NZS 3879	Solvent cements and priming fluids for PVC (PVC-U and PVC-M and ABS and ASA pipes and fittings
AS 4032.2	Water supply - Valves for the control of heated water supply temperatures - Tempering valves and end-of-line temperature actuated devices
AS/NZS 4129	Fittings for polyethylene (PE) pipes for pressure applications.
AS/NZS 4130	Polyethylene (PE) pipes for pressure applications
NZS 4305	Energy efficiency domestic type hot water systems
NZS 4602	Low pressure copper thermal storage electric water heaters
NZS 4606.1	Storage water heaters. General requirements
NZS 4606.2	Storage water heaters. Specific requirements for water heaters with single shells
NZS 4606.3	Storage water heaters. Specific requirements for water heaters with composite shells.
NZS 4607	Installation of thermal storage electric water heaters: valve-vented systems
NZS 4617	Tempering (3-port mixing) valves
AS 4809	Copper pipe and fittings. Installation and commissioning
AS 5200 part 053	Plumbing and drainage products, Stainless steel pipes and tubes for pressure applications.
AS/NZS 5601.1	Gas installations - general installations
AS/NZS 60335.2.35	Household and similar electrical appliances. Safety - Pat 2.35 Particular requirements for instantaneous water heaters

Gas (Safety and Measurement) Regulations 2010
Plumbers, Gasfitters and Drainlayers Act 2006
NZ Backflow Testing Standard: NZ Backflow Testing Standard 2019, Field testing of backflow prevention devices and verification of air gaps

1.3 MANUFACTURER DOCUMENTS

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

~

Copies of the above literature are available from ~

Web:	~
Email:	~
Telephone:	~
Facsimile:	~

Warranties

1.4 WARRANTY

Provide warranty for:

2 years:	For the supply and installation of the plumbing system and fixtures

- Provide the warranty in the standard form in the general section 1237WA WARRANTY AGREEMENT.
- Commence the warranty from the date of practical completion of the contract works.

Requirements

1.5 QUALIFICATIONS

Plumbers to be experienced competent workers, familiar with the materials and the techniques specified. Carry out all work under the direct supervision of a certifying plumber under the Plumbers, Gasfitters and Drainlayers Act 2006.

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1.6 INFORMATION FOR OPERATION AND MAINTENANCE

Provide the following general operation and maintenance information as electronic PDF format documents:

~

Provide this information prior to practical completion.

1.7 HOT WATER TEMPERATURES

To NZBC G12/AS1, 6.14

Storage water heaters to store water at not less than 60ºC.

Hot water piping system, with temperature controls where necessary (tempering valve etc), to provide water at the outlet at the following temperatures:

For personal hygiene fixtures (showers, baths, wash hand basins etc) temperatures to be close to but not to exceed:

- 45ºC - for early child hood centres, schools, elderly facilities, hospitals, psychiatric or disabled institutions.
- 50ºC - for personal hygiene fixtures in all other buildings.

For non-personal hygiene fixtures (kitchen sinks and equipment, laundry tubs, cleaners sinks, industrial fixtures etc) temperatures are:

- Unrestricted - direct from water heater, approx. 60°C, must be less than 65°C (for kitchen sinks and equipment, laundry tubs, cleaners sinks etc) - in all buildings.
- Unrestricted - direct from water heater not tempered (for industrial fixtures and specific items etc) - in all buildings.

This clause excludes boiling units.

1.8 QUALITY CONTROL SYSTEM - LEAD FREE

If requested, by the contract administrator or consenting authority, provide test reports from IANZ or equivalent accredited testing facility confirming products that contain copper alloy and are used in contact with potable water for human consumption are lead free.

Performance

1.9 TESTING - TO NZBC G12/AS1

Test to NZBC G12/AS1, 7.6, Watertightness, for hot and cold water.

- Test to a pressure of1500 kpa for period not less than 15 minutes.

Confirm the timing before carrying out any tests. Supply potable water and the apparatus needed. Slowly fill service pipes with water to exclude air. Test and ensure there is no measurable loss of pressure for the minimum period. Slowly fill distribution pipes with water to exclude air. Ensure that with draw-off taps closed the system must remain water-tight.

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2 PRODUCTS

2.1 COPPER PIPE

To NZBC G12/AS1, 2 Materials. Copper pipe to NZS 3501, AS 1432 (type A, B & C) and AS 3688 for fittings.

2.2 POLYBUTYLENE PIPE

To NZBC G12/AS1, 2 Materials. Polybutylene tubing to AS/NZS 2642.1, AS/NZS 2642.2 and AS/NZS 2642.3 complete with fitings and accessories brand-matched . Protect from sunlight.

2.3 VALVES

Pressure reducing or limiting valve, filter, non-return valve, cold water expansion valve, pressure relief or temperature valve, pressure relief valve and isolating valves to NZBC G12/AS1.

2.4 TEMPERING VALVE

Tempering valve to NZS 4617 or AS 4032.2 to NZBC G12/AS1.

Materials - Hot water heating appliances

2.5 ELECTRIC HOT WATER CYLINDER, MAINS PRESSURE

To NZS 4305 NZS 4606.1, NZS 4606.2 and NZS 4606.3, electric water storage cylinder, insulated and complete with required fittings.

2.6 PROTECTIVE TAPE

Plasticised PVC tape system with primer, mastic fixing and outer coating.

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3 EXECUTION

3.1 EXECUTION GENERALLY

Generally carry out the whole of this work and tests to NZBC G12/AS1 or AS/NZS 3500.1 and AS/NZS 3500.4 as modified by NZBC G12/AS3.

3.2 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.

Store tapware in a shelved, dry and securely locked area. Retain tapware in the manufacturer's original packaging, complete with all fixings and installation instructions. Label each unit separately with its space/fixture number to match.

3.3 CORE HOLES AND SLEEVES

Review location and fit core holes and sleeves as needed throughout the structure in conjunction with the boxing, reinforcing and placing of concrete. Strip core holes and make good after installation of pipework.

3.4 CONCEAL

Conceal pipework within the fabric of the building unless detailed otherwise. Satin finish chrome plate exposed work, complete with matching ferrule at the surface penetration.

3.5 CORROSION

Separate all 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.

3.6 THERMAL MOVEMENT

Accommodate movement in pipes resulting from temperature change by the layout of the pipe runs, by expansion joints and by sleeving through penetrations.

3.7 PIPE SIZE

Flow rates to each outlet to be no less than those given in AS/NZS 3500.1 and AS/NZS 3500.4 as modified by NZBC G12/AS3 or NZBC G12/AS1, table 3, Acceptable flow rates to sanitary fixtures. Pipe size as determined in NZBC G12/AS1, table 4, Tempering valve and nominal pipe diameters.

3.8 ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating contact or continuity of water between dissimilar metals.

3.9 EXCAVATE

Excavate for the water main to a firm, even trench base in straight runs. Allow to backfill.

Application - Jointing

3.10 JOINTING COPPER PIPE

Braze pipe, fit alloy compression fittings, crox type joints and seal ring compression joints to NZBC G12/AS1 and AS 4809.

3.11 JOINTING POLYBUTYLENE PIPE

Aluminium clamped, seal ring compression or push fit "O" ring seal jointing to pipe system manufacturer's requirements.

Application - Pipework installation

3.12 POTABLE WATER SUPPLY PIPEWORK INSTALLATION

From connection point, run pipes complete with all fittings, support and fixing, joins and install to manufacturers specifications. Size the pipes and branches in straight runs to deliver the acceptable flow rate to AS/NZS 3500.1 and AS/NZS 3500.4 as modified by NZBC G12/AS3 or NZBC G12/AS1, table 3, Acceptable flow rates to sanitary fixtures at each outlet. Allow for the expected concurrent use of adjoining fixtures and size the piping layout to eliminate loss of pressure at any point by simultaneous draw-off. Pipework support spacing to be firmly fixed and buffered to eliminate noise and hammer, with preformed tee-connection take-offs and branches, with machine made 3 diameter bends, complete with necessary valves and fittings. Conceal pipework and pressure test before the wall linings are fixed.

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3.13 HOT WATER PIPEWORK

Use a take-off spigot to give separate branches to each fitting, lay out pipes with support spacing to AS/NZS 3500.4 as modified by NZBC G12/AS3 or NZBC G12/AS1, table 9 Water supply pipework support spacing. Fix firmly and buffer to eliminate noise and hammer, with preformed tee-connection take-offs and branches, and preformed 3 diameter bends, complete with all necessary valves and fittings

Lag all pipes with rigid insulation to the manufacturer's requirements and AS/NZS 3500.4 as modified by NZBC G12/AS3 or G12/AS1.

3.14 EQUIPOTENTIAL BONDING METALLIC WATER SUPPLY PIPES

Before enclosing, co-ordinate with electrician to provide for equipotential bonding to metallic water pipes and metallic sanitary fixtures as required by NZBC G12/AS1, 9.0 Equipotential bonding and/or AS/NZS 3000, 5.6 Equipotential bonding.

3.15 IN-LINE FILTER

Install an in-line filter immediately adjacent to the main isolating valve at the point of entry to the building, in an accessible position to allow for easy cleaning.

Application - Hot water systems

3.16 HOT WATER CYLINDER INSTALLATION GENERALLY

Install hot water cylinders complete to the manufacturer's requirements and to NZBC G12/AS1, 6. 11, Water heater installation or NZS 4607 for Valve-vented systems.

3.17 SEISMIC RESTRAINTS - NON-GAS WATER HEATING APPLIANCES

Non-gas (electric, wet-back, solar etc) water heating appliances (storage water heaters) to be restrained to manufacturer's requirements and NZBC G12/AS1, 6.11, Water Heater Installation or AS/NZS 3500.4, 5.5.4 Seismic restraints.

3.18 INSTALL ELECTRIC HOT WATER CYLINDERS AND BOILING CYLINDERS

Install where shown complete with all the necessary fittings to the cylinder manufacturer's requirements and in accordance with NZBC G12/AS1: 6.11 or NZS 4607 for Valve-vented systems.

3.19 INSTALL STORAGE HOT WATER CYLINDER OVERFLOW TRAY

Install drained overflow tray to storage hot water cylinder to NZBC G12/AS1.

3.20 INSTALL TEMPERING VALVE

Install 1 metre minimum from outlet of hot water cylinder and to manufacturer's instructions. Install copper pipework for 1 metre minimum downstream of tempering valve prior to connection of non-metallic pipework.

3.21 PENETRATIONS

Provide and fit collars and escutcheon plates to match the pipework at all penetrations through constructions.

3.22 INSTALLING BELOW GROUND ISOLATING VALVE

Install all below ground items such as main isolating valves and water meters in preformed concrete pits or approved equivalent.

3.23 INSTALLING APPLIANCE ISOLATING VALVES - CONCEALED

Install isolating valves for appliances in accessible positions. Locate in adjacent cupboards and position to allow for easy connection and operation.

Completion

3.24 LABEL

Label all pipework with permanent adhesive markers at 3 metre minimum intervals.

3.25 CLEAN IN-LINE FILTER

Clean all in-line filters on completion of works.

3.26 REPLACE

Replace damaged or marked elements.

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3.27 LEAVE

Leave work to the standard required by following procedures.

3.28 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

Water main

4.1 POLYETHYLENE WATER MAIN

Size: 25mm outside diameter (i.e. DN 25 in AS/NZS 4130)

Pipework

4.2 COPPER PIPE

Manufacturer: ~
Brand: ~
Nominal bore: ~mm
Wall thickness: ~mm

4.3 POLYBUTYLENE PIPE

Manufacturer: ~
Brand: ~

4.4 EXPOSED PIPES

Manufacturer: ~
Type: ~
Nominal bore: ~mm
Accessories: ~

Hot water systems

4.5 ELECTRIC HOT WATER CYLINDER, MAINS PRESSURE

Brand: ~
Model size: ~

Valves and accessories

4.6 MAIN ISOLATING VALVE

Location: ~
Brand/type: ~

4.7 FLOOR/ZONE ISOLATING VALVES

Location: ~
Brand/type: ~

4.8 APPLIANCE ISOLATING VALVES - CONCEALED

Appliance: ~
Brand/type: ~

4.9 APPLIANCE ISOLATING VALVES - EXPOSED

Appliance: Washing machine
Brand/type: Refer to tapware selections

4.10 TEMPERING VALVE

Location: ~
Brand/type: ~

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4.11 IN-LINE FILTER

Location: ~

Brand/type: ~

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7411D DIMOND RAINWATER SPOUTING SYSTEMS

1 GENERAL

This section relates to Dimond rainwater disposal systems including spouting and downpipes, in metal.

1.1 RELATED WORK

Refer to ~ for ~

1.2 ABBREVIATIONS AND DEFINITIONS

The following abbreviations apply specifically to this section:

BMT	Base metal thickness
NZMRM	New Zealand Metal Roofing Manufacturers Inc

Documents

1.3 DOCUMENTS

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

NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Dimond, Roofing and Cladding Systems Design Manual, (web based Manual with dated update pages)

Manufacturer/supplier contact details

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

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

~ years:	For perforation
~ years:	For coatings

- Provide the warranty in accordance with published supplier's guidance on materials, environments and building types.
- Commence the warranty from the date of installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

3 years:	For workmanship

- Provide this warranty on the installer/applicator standard form.
- Commence the warranty from the date of installation.

Include a copy of the maintenance requirements with the warranty.
Refer to the general section 1237 WARRANTIES - INSTALLER/APPLICATOR for additional requirements.

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Requirements

1.7 NO SUBSTITUTIONS

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

1.8 QUALIFICATIONS

Installers to be experienced competent gutter installers, familiar with the **Dimond** materials and the techniques specified.

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Provide one copy of all relevant **Dimond** maintenance information on completion of the roofing work.

Performance

1.10 TEST

Test the completed rainwater disposal system with water to ensure spoutings are laid to correct falls, that both spouting and downpipes are unobstructed and that no ponding occurs in spoutings.

2 PRODUCTS

Materials

2.1 SPOUTING

Complete with matching brackets to suit the spouting and screws. Refer to SELECTIONS for type.

2.2 DOWNPIPES

Complete with stand-off brackets, galvanized screw fixed. Refer to SELECTIONS for type.

Components

2.3 DROPPERS

Steel or plastic droppers, sized to fit inside the downpipe.

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 suitable to fix to standard.

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.

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Application - metal

3.5 INSTALL METAL SPOUTING

Establish minimum falls necessary (minimum 1:500) to outlets to prevent ponding and screw fix brackets true-to-line at 900mm centres maximum or 600mm centres maximum when using profile option Box 300. In areas where snow fall is possible and or high wind areas, the centres should be reduced to 450mm. 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 **Dimond** details and NZMRM CoP recommendations.

3.6 INSTALL METAL DOWNPIPES

Form downpipes complete with cast zinc 115 degree angle bends as needed with all joints lapped and silicone sealed and fixed with 2-4mm diameter aluminium blind rivets. Galvanize screw fix with galvanized steel pipe clips to rigidly stand 40mm off the wall plumb and discharging into stormwater gully or inlet pipe. All installation to **Dimond** details and NZMRM CoP recommendations.

Completion

3.7 REPLACE

Replace damaged or marked elements.

3.8 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.

3.9 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

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

4.1 DIMOND SPOUTING

Profile:	~
Size:	~ effective cross sectional area
Base material:	~
BMT:	~mm
Coating system:	~
Dimondcolour:	~

4.2 DIMOND DOWNPIPES

Profile:	~
Base material:	~
BMT:	0.55mm
Coating system:	~
Dimondcolour:	~

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7701 ELECTRICAL BASIC

1 GENERAL

This section relates to the wiring for domestic and small scale commercial installations, including:

- power
- lighting
- electrical automation
- security system
- complete with componentry
- electrically-powered fittings
- fire rated sealers, liners and accessories

1.1 RELATED WORK

Refer to ~ for ~.

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

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 F6/AS1	Visibility in escape routes
NZBC G4/AS1	Ventilation of buildings
NZBC G9/AS1	Electricity
AS/NZS 1125	Conductors in insulated electric cables and flexible cord
AS/NZS 1768	Lightning protection
AS/NZS 2201.1	Intruder alarm systems - Client's premises - Design, installation, commissioning and maintenance
AS 2293.1:2005	Emergency escape lighting and exit signs for buildings - System design, installation and operation
AS 2293.3:2005	Emergency escape lighting and exit signs for buildings - Emergency escape luminaires and exit signs
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 3113	Approval and test specification - Ceiling roses

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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
NZS 4514	Interconnected smoke alarms for houses
NZS 4246	Energy Efficiency - Installing bulking thermal insulation in residential buildings
AS/NZS 5000.2	Electric cables - Polymeric insulated - for working voltages up to and including 450/750v
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 61439.3	Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO).
IEC 61643	Components for low voltage surge protection devices

Electricity (Safety) Regulations 2010 (Reprint as at 21 January 2019).
TCF Premises Wiring Cable Installers Guidelines for Telecommunication Services

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:

~

Manufacturer/supplier contact details:

Company:	~
Web:	~
Email:	~
Telephone:	~

Warranties

1.5 WARRANTY

Warrant the complete electrical installation under normal environmental and use conditions against failure of materials and execution.

1 year:	Warranty period

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 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's 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.

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.

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1.9 QUALIFICATIONS - SECURITY SYSTEM

Installation by an installer licensed under the Private Investigators and Security Guards Act. Installation of all security equipment to comply with AS/NZS 2201.1 Intruder alarm systems - Client's premises - Design, installation, commissioning and maintenance.

1.10 CONFIRM SELECTIONS

Confirm selections of all outlet fittings and hardware with the owner in writing before ordering.

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.

Quality control and assurance

1.13 INSPECTIONS

~	~

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2 PRODUCTS

2.1 MAINS SUPPLY

Tough plastic sheathed neutral screened cable to AS/NZS 5000.2 and AS/NZS 3008.1.2, with a minimum rating of 60 amps per phase. Include pilot cable where required by network utility company.

2.2 CABLES

Tough plastic sheathed copper conductors to AS/NZS 5000.2, stranded above 1.0mm², and to AS/NZS 3008.1.2. Minimum sizes as below. Increase sizes if the method of installation, thermal insulation, cable length or load will reduce the cable rating below that of the MCB rating, or produce an excessive voltage drop.

Lighting circuits:	Domestic: 1.5mm² on 10 amp MCBs
Lighting circuits:	Commercial: 1.5mm² on 16 amp MCBs
Power circuits:	2.5mm² on 16 amp MCBs for domestic and unenclosed or unfilled cavity construction
	2.5mm² on 16 amp MCBs for domestic insulated construction, or filled cavity
	2.5mm² on 20 amp MCBs for unenclosed or unfilled cavity construction
	2.5mm² on 16 amp MCBs for insulated construction, or filled cavity, or lengths over 30 metres
Hot water cylinder circuits:	Single phase: 2.5mm² on 20 amp MCBs
Range/oven/hob circuits:	Single phase: 6mm² high temperature cable on 32 amp MCBs

Heat resistant cable for final connections to all heated appliances, and high temperature cable in ambient conditions that may be above 35°C (roof spaces above insulation etc).

2.3 METER BOX

Proprietary manufactured, zinc plated powder coated metal case, or ABS plastic, with glazed panel door, weatherproof where mounted outdoors, and complete with meter mounting, main switch and fuse.

2.4 DISTRIBUTION BOARD

Flush surface mount boards manufactured to AS/NZS 3439.3 , or AS/NZS 61439.3, and installed in accordance with AS/NZS 3000. Manufactured from engineering grade resin with a glow wire rating of 850°C, complete with neutral and earth busbars, and insulated comb phase bar. Distribution boards to have 20% spare capacity for future additions and alterations.

2.5 CIRCUIT PROTECTION

General requirements including main switch 63A or 100A. Residual current protection 30mA, ensure RCCBs' meet Type A and comply with AS/NZS 3190. MCBs to 4.5kA or 6kA rated.

2.6 SURGE PROTECTION

Protection for the homes appliances with IEC 61643 Class ll surge protection devices fitted to the switchboard. For variable electronic equipment fit IEC 61643 Class lll surge protection to switched socket outlets.

2.7 WALL BOXES

Standard grid size or equivalent to be manufactured from plastic or metal, with 2 or more gang size to be metal with steel inserts for accessory securing screws. Screw fixed.

2.8 SWITCH UNITS

Single pole switches to be 16 amp minimum rated, double pole or intermediate to be 16 amp minimum rated. All switches to be 230 volt a.c. polycarbonate flushplate units.
Label all switch units that control electrical equipment or special lighting circuits by proprietary engraved switch mechanisms where applicable.
Refer to drawings/schedules for number of switches per unit, dimmer units, neon (indicator or toggle) units and 2 way units.
Refer to SELECTIONS.

2.9 SWITCHED SOCKET UNITS

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10 amp, 230 volt flat 3 pin socket outlets fitted with safety shutters and manufactured to AS/NZS 3100, AS/NZS 3112 and AS/NZS 3113, single or multi gang as detailed.

2.10 SWITCH UNITS - PERSON WITH DISABILITIES

In addition to clause SWITCH UNITS above, units shall comply with NZBC G9/AS1, 2.0.1.b) and d). Refer to SELECTIONS.

2.11 CEILING ROSES

White plastic mounting base with screwed cover, manufactured to AS/NZS 3113. Terminal type. Suspended fittings to have sheathed round flexible cord to AS/NZS 3008.1.2. Refer to SELECTIONS.

2.12 HOT WATER SYSTEM SWITCH

One way 20 amp switch complete with cable clamp for flexible PVC conduit to element enclosure.

2.13 BATTEN HOLDERS

Standard white plastic bayonet cap, with cap angled where wall mounted. Brass liners.

2.14 FIRE & SMOKE ALARM SYSYEM

Refer to SELECTIONS.

2.15 LIGHT FITTINGS

Fluorescent and High Intensity Discharge fittings with low loss control gear and power factor corrected to 0.95 minimum. Control gear suitable for dimming if this is required. All fittings complete with lamps; Incandescent GLS lamps pearl, coiled-coil 230v rated, bayonet cap; Fluorescent triphosphor 2700K; CFL; halogen ELV 12v dichroic reflector with cover glass unless detailed otherwise; integral/non-integral LEDs, reflectors, lenses, heatsinks and drivers - 3,000K to 4,000K, CRI >80, L70.

2.16 RECESSED LIGHT FITTINGS - RESIDENTIAL

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.

Refer to clause INSULATION & GENERAL CLEARANCES for clearances from insulation and other elements.

2.17 EXHAUST FANS

Ceiling, wall or duct mounted exhaust fans for ventilation to NZBC G4/AS1, and compliant with AS/NZS 60335.1.

2.18 HEATED TOWEL RAILS

Fixed wired heated towel warmers, double insulated, IPX4 splash-proof, compliant with AS/NZS 60335.1, scratch resistant powdercoated or chrome finish.

2.19 EXTERIOR SWITCHES AND SWITCHED SOCKET UNITS

Using materials with superior UV protection, impact strength, and addition chemical resistance when compared with interior polycarbonate fittings. Weather protected, switches and sockets to IP56 minimum. Sockets fitted with safety shutters behind socket pins, and all products able to be padlocked off or on.

2.20 EXTERIOR LIGHT FITTINGS

Using materials with superior UV protection, impact strength, and addition chemical resistance.

Weather protection minimums:

- IP54 for protected areas under eaves or verandahs etc.
- IP55 for exposed areas not subject to pressurised water (hoses).
- IP66 for areas subject to pressurised water or major splashing.
- IP67 for inground lights
- IP68 for submerged pool fittings

Security system

2.21 CONTROL PANEL

Control panel system with a minimum of one installer code, one master code, 6 zones minimum and 6 user codes. The installer to select codes to suit installation.

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2.22 DETECTORS

There are two main types of detectors:

- Standard passive infrared sensors: Install in stable environments with no wind flow and no direct bright sunlight.
- Passive infrared/ microwave sensors: Install in area where environmental stability is an issue.

2.23 AUDIBLE DEVICES

Internal sirens can be either a 12V Piezo Siren or a Horn speaker with a sound pressure level of no less than 95dB.

External siren can be either a stainless steel design or have hardened plastic casing. Both designs to be fully weatherproof but not limited to IP66 Rating. The siren box to contain a strobe diffuser in either blue or red. The siren shall contain a horn speaker, 12v speaker or an electronic siren. The external siren box to have both a cover and rear wall tamper mechanism.

2.24 CABLING

Security alarm wiring to NZS/AS 1125 for cables.

Security alarm wiring to be multi stranded and not single stranded, minimum 0.5mm².

2.25 PERIPHERALS

Fit anti-tamper devices to detectors, control panels and equipment housings, programmed to give a tamper indication when the system is unset and a tamper alarm when the system is set.

Standard keypad manufactured of moulded hardened plastic with either a LED or LCD screen, to match the style of the wiring accessories in diameter, colour and aesthetics.

2.26 COMMUNICATIONS

Digital dialler to be built into the PCB of all control panels, with the options for both monitoring and remote dial in windows based software. Digital dialler to comply with all the industry standard communication formats including contact I.D and SIA, and NZ Telepermit certification.

Remote software able to upload / download programming changes and or history events and change status of the security alarm with the ability to be turned off if required.

Fire rated sealers and liners

2.27 FIRE RATED SEALERS AND LINERS

Sealants, collars, wraps, expanding foam, mortars and liners, used to seal around pipe, conduit and sleeve penetrations through fire and acoustic walls and floors. Refer to SELECTIONS for type.

Fire rated accessories

2.28 WALL BOXES AND SWITCH UNITS - FIRE RATED

Proprietary intumescent pad for plastic electrical sockets installed in plasterboard lined fire rated partitions providing an acoustic barrier and fire protection. Refer to SELECTIONS for type.

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.

Installation

3.3 MAIN SUPPLY

Lay underground mains to the NUO requirements. Excavate trench, install cable and marker tape and backfill.

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3.4 METER BOX

Fit to meter box manufacturer and Electricity Retailer requirements. Recess into external wall in sheltered area and flash to weatherproof to NZBC E2/AS1, Figure 9.1.8.3B: General meterbox and similar penetrations. Arrange for meter installation and connection.

3.5 DISTRIBUTION BOARD

Fit to AS/NZS 3000 and board manufacturer requirements. Recess into wall or surface mount and ensure fire containment properties of the enclosure are maintained.

3.6 CIRCUIT PROTECTION

Install MCBs at distribution board to AS/NZS 3000 to protect each final sub circuit.

3.7 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
- Exposed conductive materials, like metal sink/tub or vanity benches etc, with attached electrical units or equipment

3.8 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 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

3.9 MAIN EARTH

Provide a plastic toby box to contain and protect the earth electrode. Fix the connecting earth wiring closely and securely against wall surfaces.

3.10 ARC FAULT DETECTION DEVICE (AFDD)

To AS/NZS 3000 clause 2.9, AFDD on all final sub-circuits not exceeding 20A.

3.11 EARTH LEAKAGE PROTECTION

Install RCD protection to AS/NZS 3000.

3.12 SURGE PROTECTION

Install surge protection devices to manufacturer requirements and in accordance with AS/NZS 3000 and AS/NZS 1768. When fitting IEC 61643 Class II protection at the switchboard, protect the device by a dedicated MCB.

3.13 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.

3.14 RCD-AFDD COMBINED - RESIDENTIAL INSTALLATIONS

Install a 30mARCD - 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.

3.15 RCD - SPECIFIC INSTALLATIONS

Install fixed wired RCD protected outlets (SRCD) in the following higher risk areas:

- Wet areas: bathrooms, laundries, kitchens.

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- Near pools and water features.
- Where intended for use with cleaning equipment.
- Hand-held tools subject to movement in use, i.e. work-shops, garages.

3.16 SET-OUT

The position of outlets and equipment shown on drawings is indicative of requirements. Confirm documents and site conditions are not in conflict with other services or features. 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.

3.17 CABLING

Install wiring systems to AS/NZS 3000. 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.

3.18 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.

3.19 WALL BOXES

Mount flush in cavity construction size to fit products selected. Fix vertically mounted wall boxes to studs. Screw fix horizontally mounted switched socket outlet wall boxes to solid blocking or nogs. Fix switch panel wall boxes to solid blocking.

3.20 SWITCHES AND SWITCHED SOCKET UNITS

Fit all switch units and socket units to the manufacturers requirements with heights and mounting directions as indicated in SELECTIONS.

3.21 SWITCHES AND SWITCHED SOCKET UNITS - FOR PERSON WITH DISABILITIES

Fit all switch units and socket units to the manufacturers requirements with heights (& mounting direction) and location to NZBC G9/AS1 and SELECTIONS.

3.22 ISOLATING SWITCHES

Locate isolating switches in positions as confirmed by the owner, when not specifically shown on the drawings.

3.23 LIGHT FITTINGS

Install light fittings in locations and at heights specified and confirmed by the owner, in accordance with the fitting manufacturer requirements.

3.24 EXTRA LOW VOLTAGE LIGHTING

Use electronic, transformers (halogen) or drivers (LED) for ELV lamps, one transformer/driver per lamp. Locate to manufacturer requirements and as close as practicable to the lamp. Ensure transformers/drivers and rear of light fittings are adequately ventilated and appropriately clear of any building elements, to AS/NZS 3000.

3.25 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.

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- 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.

3.26 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.

3.27 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 3000:2007
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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3.28 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	Manufacturer 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

3.29 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.

3.30 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 under the hot and cold water system section.

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.

3.32 BATHROOM ELECTRICAL FIXTURES

Install all electrical fixtures. Connect the following bathroom and toilet electrical items:

- Heated towel rails: Install to manufacturers requirements and installed in accordance with AS/NZS 3000
- Mirror demisters: Locate centrally above the wash hand basin(s). Connect wiring to room lighting unless specified otherwise.
- Exhaust fans: Install exhaust fans to manufacturer requirements. Installed in accordance with AS/NZS 3000 and NZBC G4/AS1.

3.33 OUTDOOR/EXTERIOR SERVICES

Install all wiring systems in accordance with AS/NZS 3000 and in accordance with the manufacturer recommendations:

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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 and sockets 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.

3.34 LABELLING

Include label under each controller, switch and circuit breaker on distribution boards. Include a warning notice if light dimmers are used in the installation. List the rating of each circuit.

Security system

3.35 SECURITY SYSTEM

Install to the system manufacturer requirements, control panel, detectors and associated equipment fitted neatly and without damage to surrounding finishes. Installation of security equipment to AS/NZS 2201.1 Intruder alarm systems - Client's premises - Design, installation, commissioning and maintenance. All 230v mains power connections to the security panel are to be in accordance with AS/NZS 3000. The 230V power is to be switched using a dedicated single gang Isolator switch or similar.

Fire rated sealers and liners

3.36 SEAL ALL PENETRATIONS

Seal all penetrations, including in and around conduits and sleeves, in accordance with manufacturer instructions. For fire and/or acoustic rated elements, maintain the rating with the seal systems.

3.37 PROVIDE CABLE SLEEVES

Provide PVC sleeves formed from pipe sections, unless fire and/or acoustic systems require sleeves for other building elements and/or different material for the sleeve.

Fire rated accessories

3.38 INSTALL WALL BOXES AND SWITCH UNITS - FIRE RATED

Install proprietary fire rated wall boxes and switch units in accordance with manufacturer instructions.

Completion & Commissioning

3.39 COMPLETION MATTERS

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

3.40 COMPLETION - TESTS & CERTIFICATION

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

~	~

3.41 COMMISSIONING - TESTS & CERTIFICATION

Refer to 1270 CONSTRUCTION for general test and certification requirements for commissioning.

~	~

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4 SELECTIONS

Materials

4.1 METER BOX

Location: ~
Brand / type: ~

4.2 DISTRIBUTION BOARD

Location: ~
Brand / type: ~
MCB: ~
RCCB: ~
RCBO: ~
Surge protectors: ~
Modular contactors: ~
Main switch: ~
Timers ~

4.3 FIRE & SMOKE ALARM SYSTEM

Refer to appropriate fire and smoke alarm section:
~

4.4 SECURITY SYSTEM

Location	Brand / type	Detector
~	~	~

Fire rated sealers and liners

4.5 FIRE RATED SEALERS AND LINERS

Location: ~
Manufacturer: ~
Brand/type: ~

Fire rated accessories

4.6 WALL BOXES AND SWITCH UNITS - FIRE RATED

Location: ~
Manufacturer: ~
Brand/type: ~

Outlets - fittings

4.7 INTERIOR SWITCHES AND SWITCHED SOCKET UNITS

Item	Brand / type
Switch / socket outlets:	~
Coverplate colour:	~
Switch module colour:	~

Item	Brand / type
Light dimmers:	~
Timer switch:	~
Push button switch:	~
Symbol switch:	~
PIR sensor switch:	~
Toggle switch:	~
Waterproof switches:	~

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Item - RCD	Brand / type
Socket outlet:	~
Shaver outlet:	~
Safety switch:	~

4.8 INTERIOR SWITCHES AND SWITCHED SOCKET UNITS - PERSONS WITH DISABILITIES

In addition to clause INTERIOR OUTLETS, unit set out shall comply with NZBC G9/AS1, 2.0.1.

Item	Height to centre of unit	Orientation	Location
Switch	1000mm above FFL	vertical	Refer to drawings
Switch narrow	1000mm above FFL	vertical	Refer to drawings
Socket outlet	600mm above FFL	horizontal	Refer to drawings
Socket outlet	150mm above FFL	horizontal	Refer to drawings

Item:	Brand / Type
Switch / socket outlets:	~
Coverplate colour:	~
Switch module colour:	~

Note:

- Light switches to be horizontally aligned with door handles.
- Bedrooms to have at least one light switched from bedside.
- Socket outlets shall be at least 500mm from internal corners.

4.9 INTERIOR LIGHT FITTINGS

Fitting	Brand / type
Pendant lights:	~
Pendant cord:	~
Ceiling lights:	~
Recessed ceiling lights:	~
Recessed wall lights:	~
Recessed floor lights:	~
Wall lights:	~
Spotlights:	~
Fluorescent lights:	~
Strip lights:	~
Emergency lights:	~
Transformers:	~
LED Drivers:	~

4.10 EXTERIOR SWITCHES AND SWITCHED SOCKET UNITS

Item	Brand / type
Weatherproof socket outlets:	~
Timer switch:	~
Weatherproof switch:	~
Daylight switch:	~

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4.11 EXTERIOR LIGHT FITTINGS

Fitting	Brand / type
Wall lights:	~
Bulkhead lights:	~
Spotlights:	~
Recessed lights:	~
Strip lights:	~
Floodlights:	~
Pole lights:	~
Security lights:	~
Security light sensors:	~
Transformers:	~
LED Drivers:	~

4.12 MISCELLANEOUS ELECTRICAL ITEMS

Item	Brand / type
Door bell system:	~
Extractor fan:	~
Water heater:	~

4.13 HEATED TOWEL RAILS

Location	Brand / type
~	~

4.14 MIRROR DE-MISTERS

Location	Size	Wattage
~	~mm x 550mm	~ watts
Brand:	~	

4.15 BATHROOM FANS AND HEATERS

Location	Brand / type
Bathroom / ensuite-Heating:	~
Bathroom / ensuite-Extract:	~

4.16 ELECTRICAL APPLIANCES

Item	Brand / type
Range:	~
Wall oven:	~
Cooker top/hob:	~
Waste disposal unit:	~
Range hood:	~

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