2 JOHNSON PLACE

Project Specification

2 Johnson Place, Queenstown, Queenstown, New Zealand
Project Ref: C-26009
Date: 06 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 DESCRIPTION OF THE WORK

Demolition of existing home, landscaping and civil features to allow for construction of:

- 4no. Townhouses.
- Car Parking and Accessways
- Retaining Features and Landcaping surrounding.

1.3 RESTRICTED BUILDING WORK

This project includes Restricted Building Work.

1.4 DESIGN CONSTRUCTION SAFETY

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

Site

1.5 SITE

The site consists of:	Car Parking to western road edge of site suitable for 4no. car parks with associated loading, storage and bike parking 4no. Townhouses running east-west across the site.
As shown on drawing:	A-002 | Site Plan - Proposed

1.6 LEGAL DESCRIPTION

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

1.7 EXISTING BUILDINGS

Existing buildings consist of:	Single Home, Car Parking and Landscape Features.
Refer drawing(s):	A-001 | Site Plan - Existing Lot 8 DP 16559

Site environment - Durability

1.8 EXPOSURE ZONE

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

The site zone is: Zone B

Site environment - Wind

1.9 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)

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Site environment - Seismic

1.10 EARTHQUAKE ZONE - NON SPECIFIC DESIGN

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

The earthquake zone is: Zone 3

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1232 INTERPRETATION & DEFINITIONS

1 GENERAL

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

Definitions

1.1 DEFINITIONS

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

1.2 PERSONNEL

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

1.3 ABBREVIATIONS

The following abbreviations are used throughout the specification:

AAMA	American Architectural Manufacturers Association
AS	Australian Standard
AS/NZS	Joint Australian/New Zealand Standard
ASTM	American Society for Testing and Materials
AWCINZ	Association of Wall and Ceiling Industries of New Zealand Inc.
BCA	Building Consent Authority
BPIR	Building Product Information Requirements
BPIS	Building Product Information Sheet

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

1.4 DEFINED WORDS

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

1.5 WORDS IMPORTING PLURAL AND SINGULAR

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

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1232S1 EXPLANATION OF SCHEDULE SECTIONS

1 GENERAL

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

1.1 EXPLANATION OF SCHEDULE SECTIONS

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

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

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

1.2 SCHEDULE SECTIONS

The following Schedule sections are contained within the specification:

1278SR Schedule Of Slip Resistance Testing

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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

1.4 TEST METHODS & MINIMUM TEST VALUES

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

Test condition:	Minimum test value required:	Test method:
Level access wet	39 SRV	Wet pendulum test method of AS 4586, Appendix A using the Slider 96 rubber.
Sloping access wet	Refer to sloping access wet table below, select BPN value for stated slope.	Wet pendulum test method of AS 4586, Appendix A
Stairs wet - with slip resistant nosings	39 SRV	Wet pendulum test method of AS 4586, Appendix A using the Slider 96 rubber.
Stairs wet - without slip resistant nosings	50 BPN	Wet pendulum test method of AS 4586, Appendix A

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°

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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°
0.557	1 in 8	7.125°

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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 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

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

1.3 MANUFACTURER DOCUMENTS

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

Firth Concrete - Technical Documents

Copies of the above literature are available from |

Company:	Firth Concrete Website.
Web:	Firth Concrete - Technical Documents

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 MASONRY UNITS SELF-INSULATING

To AS/NZS 4455.1, 200mm masonry with a polystyrene insulation insert.

2.3 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.

2.4 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

2.5 GROUT

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

2.6 WATER

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

Accessories

2.7 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

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

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

3.14 LAY SELF INSULATING MASONRY UNITS

Lay to external walls where noted on the drawings and to the masonry manufacturer's recommendations.

3.15 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.

3.16 BRACING

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

3.17 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.

3.18 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.

3.19 GROUT CELLS

Grout all masonry unit cells.

3.20 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.

3.21 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**.

3.22 MORTAR-IN COMPONENTS

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

3.23 SUB-FLOOR VENTILATION

Build-in precast sub-floor ventilators to NZS 3604: 6.14, **Prevention of dampness**. Locate 750mm from corners and at a maximum of 1.8m centres, or as shown on the drawings. Refer to SELECTIONS.

3.24 BUILD-IN

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

3.25 PROGRESSIVE CLEANING

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

3.26 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.

3.27 FINAL CLEANING

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

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3.28 REMOVE
Remove from the site materials not used.

4 SELECTIONS

4.1 DURABILITY - PROJECT REQUIREMENTS
Refer to clause DURABILITY.

Location:	Sub Floor & Retaining Features
Exposure Zone:	Zone B
Mortar mix:	M3 to NZS 4210 2.2.2.1
Components:	R3
Rebar cover:	Minimum Cover Reinforcement | 15 (45)mm 140mm - 60mm cover | 190mm = 60mm cover

4.2 MASONRY UNITS

Brand:	Firth
Width:	140 & 190mm
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:	Blockwork Generally
Joint profile:	Concave
Mortar colour:	None,

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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 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

1.2 DOCUMENTS

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

NZBC B2/AS1	Durability provisions for building elements
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 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.**

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 TIMBER TRUSSES

To FTMA CoP. Moisture content 16% at supply.

2.3 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.

2.4 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.

2.5 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".

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Components

2.6 NAILS

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

2.7 SCREWS

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

2.8 BOLTS AND COACH SCREWS

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

2.9 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.

2.10 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.

2.11 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).

2.12 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 JAMB BATTENS

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

3.13 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.).

3.14 DPC TO LOSP TREATED TIMBER

Refer to 4161 UNDERLAYS, FOIL AND DPC section.

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3.15 DPC TO TIMBER
Refer to 4161 UNDERLAYS, FOIL AND DPC section.

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 Abodo	Type VB 20	Abodo System

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

4.7 EXTERIOR EXPOSED TIMBERS

Member	Species	Grade	Treatment
Posts:	Radiata pine	SG8	H3.2 CCA
Joists:	Radiata pine	SG8	H3.2 CCA
Exterior stairs and steps:	Radiata pine	SG8	H3.2 CCA
Ground contact members	Radiata pine	SG8	H5 CCA

Note all CCA to be preservative code 01 or 02

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

1 GENERAL

This section relates to the supply and installation of Kingspan's Thermakraft product range including DPC, DPM, Wall & Roof Underlays, Foils, Flashing Tapes, and accessories.

1.1 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

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

The following definitions apply specifically to this section:

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

Documents

1.2 DOCUMENTS

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

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS 1530.2	Methods for fire tests on building materials, components and structures - Test for flammability of materials
AS/NZS 2904	Damp-proof courses and flashings
NZS 3604	Timber-framed buildings
NZS 4229	Concrete masonry buildings not requiring specific engineering design
AS/NZS 4347	Damp-proof courses and flashings - Methods of test
AS/NZS 4389	Roof safety mesh
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire
CodeMark CMNZ10002 ver5	Watergate Plus Wall Underlay
CodeMark CMNZ30028 verK	Thermakraft Covertek 407 Roof and Wall Underlay
CodeMark CMNZ30030 verJ	Thermakraft Covertek 405 Roof and Wall Underlay
CodeMark CMNZ30069 verI	Thermakraft Covertek 403 Roof and Wall Underlay

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Thermakraft's Product Data Sheets
Thermakraft's Installation Guides
BRANZ Appraisal 329 (2022) - Supercourse 500 Damp-Proof Course and Concealed Flashing - Amendment 29 August 2023
BRANZ Appraisal 651 (2024) - Thermakraft Covertek 407 Roof and Wall Underlay - Amended 13 July 2026
BRANZ Appraisal 695 (2023) - Watergate Plus Wall Underlay - Amended 01 July 2025
BRANZ Appraisal 743(2025) - Thermakraft Covertek 405 Roof and Wall Underlay
BRANZ Appraisal 878 (2025) - Thermakraft Aluband Window Flashing Tape
BRANZ Appraisal 912 (2021) - Thermakraft 220 Synthetic Wall Underlay - Amended 01 July 2025
BRANZ Appraisal 917(2025) - Thermakraft Covertek 403 Roof and Wall Underlay
BRANZ Appraisal 942 (2022) - OneSeal Multi-fit Pipe and Cable Penetration Seals - Amended 28 July 2026

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BRANZ Appraisal 943 (2021) - Thermakraft Covertek 401 Roof and Wall Underlay - Amended 01 July 2025
BRANZ Appraisal 1000 (2023) - Thermakraft Thermabar 397 Light Diffusing Reflective Underlay - Amended 01 July 2025
BRANZ Appraisal 1029 (2023) - Thermakraft Ausnet Hexagonal Wire Mesh
BRANZ Appraisal 1104 (2020) - Thermathene Orange Concrete Underlay - Amendment 06 September 2024
BRANZ Appraisal 1122 (2026) - Thermaflash Flashing Tape
BRANZ Appraisal 1229 (2023) - Thermakraft Covertek 215 Roof Underlay - Amended 19 June 2025
BRANZ Appraisal 1277 (2025) - Thermakraft RainArmor Self Adhesive Roof Underlay and Wall Underlay

Manufacturer/supplier contact details

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

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years	For Kingspan Thermakraft product range.

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 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 - CodeMark certified

1.7 CODEMARK CERTIFICATE - THERMAKRAFT COVERTEK 407

Thermakraft Covertek 407 roof and wall underlay and Covertek 407 Early Close Wall Application meet the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CMNZ30028.

Compliance information - BRANZ appraised

1.8 BRANZ APPRAISED - THERMAKRAFT SUPERCOURSE 500

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

1.9 BRANZ APPRAISED - THERMAKRAFT COVERTEK 407

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

2 PRODUCTS

DPC

2.1 THERMAKRAFT SUPERCOURSE 500

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

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DPM

2.2 THERMAKRAFT THERMATHENE BLACK

0.25mm x 4000mm wide black DPM composed of recycled alloyed polythene. Membrane has a vapour flow resistance of at least 90MNs/g to NZS 3604 and NZS 4229, Damp-Proof Membranes. Refer to SELECTIONS.

Synthetic underlays - fire retardant

2.3 THERMAKRAFT COVERTEK 407

CodeMark certified and BRANZ appraised self-supporting synthetic roof and wall underlay, white with red logo print, composed of a water resistant vapour permeable film laminated to two layers of non-woven, spun bonded polyolefin sheet. Fire retardant, tested to AS 1530.2 and assigned a Flammability Index of ≤5. Available in 1250mm, 2550mm and 2740mm width. Suitable for use as an Early Close Wall Application providing up to 120 days temporary weather protection. Suitable for use as temporary weather protection for up to 30 days on roofs. Refer to SELECTIONS.

Components - sealing

2.4 THERMAKRAFT WHITE GENERAL PURPOSE TAPE

60mm wide, white polypropylene general purpose tape with acrylic adhesive. Refer to SELECTIONS.

Components - secure strapping/netting

2.5 THERMAKRAFT THERMASTRAP

19mm wide, rigid embossed polypropylene strap, colour blue. Refer to SELECTIONS.

Fixings

2.6 FIXINGS - TO TIMBER

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

2.7 FIXINGS - TO STEEL

Construction grade double sided tape, adhesive or galvanized flat head screws to suit application. Refer to SELECTIONS.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

3.2 ROUTINE MATTERS

Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.

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

3.3 PRE-INSTALLATION REQUIREMENTS

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

Installation/application - generally

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Installation - DPC

3.5 INSTALL DPC

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

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Installation - DPM

3.6 INSTALL DPM - CONCRETE FLOOR

Install DPM over sand blinding below concrete floors, install in a neat fashion with a smooth surface as a single layer with minimum 150mm overlap at joints to the Installation Guide.

3.7 APPLY TAPE TO LAPPED DPM JOINTS

Ensure DPM is free of dust and contaminates, where required clean with a dry cloth. Apply tape to the Installation Guide centred over joint laps by firmly pressing down without stretching or pulling tape.

Installation - secure netting/strapping

3.8 INSTALL SECURE STRAPPING

Place straps on underlay, draw taut and fix to framing to the Installation Guide.

Installation - roof underlay

3.9 INSTALL ROOF UNDERLAY - HORIZONTAL

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

3.10 INSTALL ROOF UNDERLAY - VERTICAL

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

Completion

3.11 COMPLETION MATTERS

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

4 SELECTIONS

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

DPC

4.1 DPC - THERMAKRAFT SUPERCOURSE 500

Location:	Concrete to Framing Generally
Manufacturer:	Thermakraft
Brand:	Supercourse 500
Type:	Damp proof course
Width:	To suit framing

DPM

4.2 DPM - THERMAKRAFT THERMATHENE BLACK

Location:	Concrete to Grade
Manufacturer:	Thermakraft
Brand:	Thermathene Black
Type:	Damp proof membrane
Width:	4000mm
Joint tape:	White General Purpose Tape

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Synthetic underlays - fire retardant

4.3 ROOF & WALL UNDERLAY - THERMAKRAFT COVERTEK 407

Location:	Roof to Truss Purlin
Manufacturer:	Thermakraft
Brand:	Covertek 407
Type:	Synthetic roof and wall underlay
Width:	2550mm
Fixings:	Galvanized Little Grippers
Maximum UV exposure:	Walls - 120 days Roofs - 30 days

Components for securing underlays

4.4 SECURE STRAPPING - THERMAKRAFT THERMASTRAP

Location:	Roof to Truss Purlin
Manufacturer:	Thermakraft
Brand:	Thermastrap
Type:	Secure strapping
Width:	19mm
Fixings:	min. 8mm staples

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4171GR GIB WEATHERLINE RIGID AIR BARRIER

1 GENERAL

This section relates to the supply and fixing of GIB Weatherline® Rigid Air Barrier to residential and commercial buildings.
It incudes;

- GIB Weatherline® Rigid Air Barrier Structural batten, screw and tape; and screw and tape systems
- GIB Weatherline® Rigid Air Barrier bracing systems
- GIB Weatherline® Rigid Air Barrier fire rated 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 B1/AS1	Structural provisions for buildings
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 2589	Gypsum linings - Application and finishing
NZS 3603	Timber structures standard
NZS 3604	Timber-framed buildings
BS EN 13501-1	Fire classification of construction products and building elements - Classification using test data from reaction to fire tests
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 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)
GIB Weatherline® Rigid Air Barrier Systems Design and Construction Manual (March 2021)
GIB Weatherline® Rigid Air Barrier Systems Supplement (November 2021)
BRANZ Appraisal 1048 (2025)- GIB Weatherline® Rigid Air Barrier Systems

Manufacturer/supplier contact details

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

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For GIB® products and/or systems for a minimum of 10 years from the date of purchase

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the

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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
Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 NO SUBSTITUTIONS
Substitutions are not permitted to any specified GIB® systems, GIB® system components, associated GIB® products or GIB® accessories.

Compliance information

1.7 INFORMATION REQUIRED FOR CODE COMPLIANCE
Provide the following compliance documentation:
- Applicators approval certificate from the manufacturer / importer / distributor
- Manufacturer's / supplier's warranty
- Installer's / applicator's warranty
- Producer Statement - Construction from the applicator / installer
- Producer Statement - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.

Performance - Fire

1.8 EXTERNAL FIRE SPREAD - NON-COMBUSTIBLE MATERIAL
GIB Weatherline® classifieds as A1 in accordance with BS EN 13501-1.

Performance - General

1.9 BRACING SYSTEM
The GIB Weatherline® Rigid Air Barrier bracing system provides bracing resistance for walls for light timber framed buildings under wind and earthquake loading to NZBC B1 Structure, and to NZS 3603 Timber Structures Standard. Refer to table for summary of P21 Ratings for 2.4m or 2.7m high wall elements.

Provide braced wall systems using the GIB Weatherline® Rigid Air Barrier bracing system to meet the requirements of NZS 3604 when tested to BRANZ Technical Paper P21. Refer to drawings for location and type.

Structural Bracing Systems:
Bracing unit ratings for elements that incorporate GIB Weatherline®

Spec	Minimum length	Lining requirements	Other requirements	BU/m	
				W	EQ
GSW-N	0.4m	Internal lining: Any 10mm or 13mm GIB® plasterboard Exterior sheathing: 10mm or 13mm GIB Weatherline®	None	85	75
GSW-N	1.2m	Internal lining: Any 10mm or 13mm GIB® plasterboard Exterior sheathing: 10mm or 13mm GIB Weatherline®	None	95	85
GSW-H	0.4m	Internal lining: Any 10mm or 13mm GIB® plasterboard Exterior sheathing: 10mm or 13mm GIB Weatherline®	Panel hold-down fixings	90	85
GSW-H	1.2m	Internal lining: Any 10mm or 13mm GIB® plasterboard Exterior sheathing: 10mm or 13mm GIB Weatherline®	Panel hold-down fixings	130 timber floors	110

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W-H	0.4m	Internal lining: None Exterior sheathing: 10mm or 13mm GIB Weatherline®	Panel hold-down fixings	105	100
W-H	1.2m	Internal lining: None Exterior sheathing: 10mm or 13mm GIB Weatherline®	Panel hold-down fixings	125 timber floors	105
BLW-H	0.4m	Internal lining: 10mm or 13mm GIB® Braceline® GIB Noiseline® Exterior sheathing: 10mm or 13mm GIB Weatherline®	Panel hold-down fixings	105	115
BLW-H	1.2m	Internal lining: 10mm or 13mm GIB® Braceline® GIB Noiseline® Exterior sheathing: 10mm or 13mm GIB Weatherline®	Panel hold-down fixings	150 timber floors	145 timber floors

1.10 BRACING REQUIREMENTS

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

- GIB Ezybrace® Systems and/or GIB Ezybrace® Bracing Software

Refer to drawings for location and type.

2 PRODUCTS

Materials

2.1 GIB WEATHERLINE® RIGID AIR BARRIER

Exterior grade, glass-fibre fleece wrapped modified gypsum core sheet.
Meets NZBC requirements for Rigid Air Barriers as an Alternative Solution Proprietary System as per NZBC E2/AS1, 9.1.3 Barriers to airflow, paragraphs 9.1.6.2 - 9.1.6.4, and Table C.2.1.1: Properties of roof underlays and wall underlays.

Complies with NZBC B2/AS1 Durability.
Sizes;

Standard lengths:	2750mm and 3000mm (2450 available but in 10mm thickness only)
Width:	1200mm
Thicknesses:	10mm and 13mm
Colour:	Purple

Components

2.2 SCREWS

GIB® Grabber® 41mm x 6g Ceramic Coated High Thread Screws.

GIB® Grabber® 63mm x 8g Ceramic Coated High Thread Screws.
GIB® Grabber® 32mm x 8g Ceramic Coated Drill Point Screws.
GIB® Grabber® 47mm x 8g Ceramic Coated Drill Point Screws.
Refer to GIB® requirements for appropriate details.

2.3 GIB WEATHERLINE® FLASHING TAPE

Flashing tape available in 30mm, 60mm, 100mm, 150mm and 200mm widths x 30m roll length.

2.4 GIB WEATHERLINE® SILL TAPE

Sill tapes available in 150mm and 200mm widths x 20m roll length.

2.5 STRUCTURAL CAVITY BATTENS

45mm x 18mm H3.1 Merchant Grade Pinus Radiata cavity battens.

2.6 BRACING HOLD-DOWN CONNECTORS

GIB HandiBrac® hold-down brackets manufactured by Mitek™ NZ complete with mechanical fastener with a minimum 15kN uplift capacity for concrete floors and 150 x 12mm dia galvanized coach screw for timber floors.

2.7 GAP FILLER

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

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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 - 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 Weatherline® Rigid Air Barrier Systems requirements. Refer to GIB® Site Guide.

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.)

Installation

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 SCREW, TAPE AND STRUCTURAL BATTEN INSTALLATION

Fix GIB Weatherline® Rigid Air Barrier System in accordance with GIB Weatherline® Rigid Air Barrier Systems Specification and Installation Manual, Section 2.

3.6 BOARD ORIENTATION

Minimise joints by careful sheet layout using the largest sheet sizes possible. Sheets may be installed vertically or horizontally, however horizontal fixing is not acceptable when Structural Bracing or Fire Rated Systems are specified. Refer to GIB Weatherline® Rigid Air Barrier Systems Specification and Installation Manual.

3.7 INSTALL FLASHING AND SILL TAPE

Install flashing and sill tape in accordance with GIB Weatherline® Rigid Air Barrier Systems Specification and Installation Manual.

3.8 LINING WALLS AND CEILINGS GENERALLY

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

3.9 FORM BRACING SYSTEMS

Form bracing systems in accordance with GIB Weatherline® Rigid Air Barrier Systems Design and Construction Manual and GIB Ezybrace® Systems.

3.10 BRACING SYSTEM HOLD DOWN

Use GIB HandiBrac® hold-down connections at each end of bracing element. Refer to the installation instructions supplied with connectors for correct bolt types to be used for either concrete or timber floors. Within the length the bracing element, bottom plates are fixed to the requirements of NZS 3604.

Finishing

3.11 FINISHING GENERALLY

To GIB® Site Guide (September 2018) and AS/NZS 2589.

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Completion & Commissioning

3.12 COMPLETION MATTERS

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

3.13 COMPLETION - TESTS & CERTIFICATION

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

~

4 SELECTIONS

GIB Weatherline® Rigid Air Barrier

4.1 STRUCTURAL BATTEN, SCREW & TAPE NZS 3604 - GIB WEATHERLINE® RIGID AIR BARRIER

Location:	Facade Generally
Product:	Weatherline® Rigid Air Barrier
Sheet length:	2750mm & 3000mm
Sheet width:	1200mm
Thickness:	10mm
Battens:	45mm x 18mm H3.1 timber or verified proprietary structural cavity battens

Components

4.2 GIB WEATHERLINE® FLASHING TAPE

Brand/type:	GIB Weatherline® flashing tape
Width:	30mm - over mid-sheet vertical lines, bottom plate fasteners and fastenersbeneath soffit/gable overhang. 60mm - over vertical sheet joints 100mm - over horizontal sheet joints and internal / external corners

4.3 GIB WEATHERLINE® SILL TAPE

Brand/type:	GIB Weatherline® sill tape
Width:	150mm - window / door jambs and sills to 90mm timber framing. 200mm - window / door jambs and sills to 140mm timber framing.

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4221AV ABODO VERTICAL CLADDING SYSTEM

1 GENERAL

This section relates to the supply and installation of Abodo Vertical cladding.

It includes:

- Vertical weatherboards
- Fascia
- Mouldings
- Components and accessories to complete the installation

1.1 RELATED WORK

Refer to 4161 UNDERLAYS, FOIL AND DPC for wall underlays

Refer to 4821 FLASHINGS for window and door flashings

1.2 ABBREVIATIONS AND DEFINITIONS

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

FSC®	Forest Stewardship Council®

Documents

1.3 DOCUMENTS

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

NZBC 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 3602	Timber and wood-based products for use in building
NZS 3631	New Zealand timber grading rules
ISO 5660	Reaction-to-fire tests - Heat release, smoke production and mass loss rate
ISO 9703:1993	Fire tests - Full scale room test for surface products
AS ISO 9703:2003 (R2016)	Fire tests - Full-scale room test for surface products
CodeMark™ CMNZ70046 ver3	Abodo Weatherboard Cladding System

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Abodo Ltd documents relating to this part of the work:

Abodo CodeMark Weatherboard Cladding Manual CWB-M-130925 April 2020
Vaaro® Fire Retardant Timber Product Guide 2025
BRANZ Assessment Summary Report FC 18171-01-1-C1
BRANZ Cladding Classification FH17743-02-1-C1

Manufacturer/supplier contact details:

Company:	Abodo Wood Limited
Trading as:	Abodo Wood
Web:	www.abodo.co.nz
Email:	info@abodo.co.nz
Telephone:	09 249 0100

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

25 years (pro rata beyond 15 years):	For weatherboards and accessories
40 years (pro rata beyond 15 years):	For Vaaro® weatherboards and accessories

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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.

Requirements

1.6 QUALIFICATIONS

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

1.7 NO SUBSTITUTIONS

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

Compliance information

1.8 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicators approval certificate from the manufacturer / importer / distributor
- Manufacturer's / suppliers warranty
- Installer's / applicator's warranty
- Producer Statement - Construction from the applicator / installer
- Producer Statement - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.

1.9 COMPLIANCE - CODEMARK CERTIFICATE

The Abodo Weatherboard Cladding System meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CMNZ70046.

Performance - Wind (design by contractor)

1.10 DESIGN PARAMETERS WIND - DESIGN BY CONTRACTOR

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

Performance - General

1.11 EXTERNAL FIRE SPREAD - TIMBER CLADDING MATERIAL, CLASSIFICATION

Abodo Vaaro® 18mm thick timber board both uncoated and with Abodo Protector WB Stain has been tested to ISO 5660.1 and to specific requirements of NZBC C/AS1 or NZBC C/AS2 achieving:

Type A classification (peak heat release rate ≤ 100 kW/m², total heat release rate ≤ 25 MJ/m²).

1.12 FIRE BARRIERS - VENTILATED CAVITY CONSTRUCTION

Exterior Ventilated Cavity Fire Barrier Strips comprising of a moisture resistant, rigid, high expansion intumescent core encased in aluminium foil, tested to AS 1530.4. Refer to SELECTIONS for type.

1.13 INTERIOR SURFACE FIRE PROPERTIES - WALLS & CEILING, GROUP NUMBER

Abodo Vaaro has been tested to ISO 9705 / AS ISO 9705 and has been assigned the Group number 1-S to BPS, 8.5.1 Group Numbers.

2 PRODUCTS

Materials

2.1 TIMBER SPECIES - THERMALLY MODIFIED RADIATA PINE

Thermally modified Radiata pine, grading to NZS 3602, NZS 3631, thermally modified to 230 degrees schedule to conform with NZS 3602. Supplied from New Zealand forest sources with FSC certification.

2.2 VULCAN VERTICAL WEATHERBOARDS

Thermally modified Radiata Pine vertical weatherboards in WB12 and WB18 tongue & groove shiplap profiles, available in Architectural Series and Standard Series grades with Brushed and Bandsawn finishes. Supplied in 1.2m minimum lengths. Refer to SELECTIONS.

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2.3 VAARO® VERTICAL WEATHERBOARDS

Thermally modified Radiata Pine vertical weatherboards in WB12 and WB18 profiles, available in Architectural Series grade with Brushed and Bandsawn finishes. Supplied in 1.2m minimum lengths. Refer to SELECTIONS.

2.4 COVER BOARDS

Thermally modified Radiata Pine cover boards, 69mm and 90mm wide x 20mm thick, available in Brushed and Bandsawn finishes. Refer to SELECTIONS.

2.5 INTERNAL & EXTERNAL CORNER MOULDS

Thermally modified Radiata Pine internal & external corner mouldings, available in Brushed and Bandsawn finishes. Refer to SELECTIONS.

2.6 EAVES MOULDS

Thermally modified Radiata Pine eaves mouldings, available in Brushed and Bandsawn finishes. Refer to SELECTIONS.

2.7 FASCIA BOARDS

Thermally modified Radiata Pine fascia board, 180mm wide x 25mm thick, available in Brushed and Bandsawn finishes. Refer to SELECTIONS.

Components

2.8 CAVITY BATTENS - NON STRUCTURALLY FIXED

Radiata Pine H3.1 or H3.2 cavity battens, 20mm thick x 45mm wide, castellated with bevelled top and bottom edges. Refer to SELECTIONS.

2.9 CAVITY BATTENS - STRUCTURALLY FIXED

Radiata Pine H3.2 cavity batten 45mm thick x 45mm wide, castellated with bevelled top and bottom edges. Refer to SELECTIONS.

2.10 CAVITY BATTENS - NON COMBUSTIBLE

Minimum 45x18mm battens of suitable fire performance to suit the requirements of the specified wall system. Refer to SELECTIONS.

2.11 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING

Perforated cavity closers to NZBC E2/AS1. Refer to SELECTIONS.

2.12 FLASHINGS

Machine folded metal flashings to NZBC E2/AS1. Refer to SELECTIONS.

2.13 CAVITY BARRIER

Refer to SELECTIONS.

Fixings

2.14 WEATHERBOARD FIXINGS - FACE FIXED NAILS

Stainless steel or class 4 hot dipped galvanized annular grooved Pentagon and Rose Head nails, 2.8mm and 3.15mm x length to achieve 30mm minimum frame/structurally fixed cavity batten embedment. Refer to SELECTIONS.

2.15 WEATHERBOARD FIXINGS - SECRET FIXED NAILS

Stainless steel or class 4 hot dipped galvanized annular grooved Flat Head nails, 2.8mm and 3.15mm x length to achieve 30mm minimum frame/structurally fixed cavity batten embedment. Refer to SELECTIONS.

2.16 WEATHERBOARD FIXINGS - POWER DRIVEN SECRET FIXED NAILS

Stainless steel or class 4 hot dipped galvanized Ring R-drive nails, 2.87mm and 3.06mm x length to achieve 30mm minimum frame/structurally fixed cavity batten embedment. Refer to SELECTIONS.

2.17 WEATHERBOARD FIXINGS - SECRET FIXED SCREWS

Stainless steel or class 4 hot dipped galvanized self-drilling countersunk screws, 6g and 8g x length to achieve 30mm minimum frame/structurally fixed cavity batten embedment. Refer to SELECTIONS.

2.18 MOULDING FIXINGS

Stainless steel ring shank Flat, Pentagon and Rose Head nails. Refer to SELECTIONS.

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2.19 CAVITY BATTEN FIXINGS - NON STRUCTURALLY FIXED

Hot-dipped galvanized 2.5mm x 40mm flat head nails and Power driven galvanized 2.8mm x 50mm 'D' flat head nails. Refer to SELECTIONS.

2.20 CAVITY BATTEN FIXINGS - STRUCTURALLY FIXED

Stainless steel ring shank Flat Head nails, stainless steel power driven D Flat Head nails and stainless steel countersunk screws, size to suit batten. Refer to SELECTIONS.

2.21 CAVITY BATTEN FIXINGS - NON COMBUSTIBLE

Refer to batten supplier fixing requirements. Refer to SELECTIONS.

2.22 SEALANT

One-component, moisture-cured polyurethane elastic joint sealant and adhesive. Refer to SELECTIONS.

Timber coatings

2.23 STAIN FINISH

Abodo Protector water based stain and Abodo Protector End Seal, available in a range of colours. Refer to SELECTIONS.

2.24 SIOO:X WOOD COATING

Sioo:x Wood Coating and Sioo:x End Grain One Sealer, clear.

2.25 IRON VITRIOL

Iron Vitriol (Iron Sulphate) timber coating and Abodo Protector End Seal.

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:	18% maximum
Weatherboard cladding moisture content:	16% maximum

Installation - generally

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALLATION GENERALLY

Install in accordance with Abodo CodeMark Weatherboard Cladding Manual.

3.6 HANDLING OF STAIN FINISHED TIMBER

Use gloves when handling and installing stain finished timber to prevent the transfer of oils/dirt onto the timber.

Application - preparation

3.7 SITE STAINING - PROTECTOR STAIN FINISH

If not pre-finished before delivery, prepare and coat all faces and edges with one coat of Protector stain to coating manufacturer's instructions, immediately the block stack is opened. Open stack each board to dry with the back facing down, ensuring faces remain well finished, untouched and unblemished. Once dry, place boards in fillet stack, laid flat and true, until fixed. Keep dry and undamaged.

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3.8 CUT EDGES

Seal all cut edges of weatherboards, fascia, corner boards and finishing profiles with 1 coat of Abodo Protector End Seal prior to installation in accordance with manufacturer's instructions.

3.9 CUT EDGES - SIOO:X

Seal all cut edges of weatherboards, fascia, corner boards and finishing profiles with Sioo:x End Grain One Sealer prior to installation in accordance with manufacturer's instructions.

Installation

3.10 INSTALL CAVITY CLOSERS

Install cavity closers at base of walls, open horizontal (or raking) junctions and over openings (windows, meters etc) positioned to provide drip edge to cladding of 10mm minimum at base of walls and 15mm minimum above window and door head flashings.

3.11 INSTALL CAVITY BATTENS - NON STRUCTURALLY FIXED

Position cavity battens over wall underlay horizontally, centred over nogs at 480mm vertical centres with bevelled top draining toward cladding and tack fix in place at 800mm centres. Provide vertical cavity battens (non-castellated) at internal and external corners.

3.12 INSTALL CAVITY BATTENS - STRUCTURALLY FIXED 45MM X 45MM

Position cavity battens over wall underlay horizontally, at 480mm vertical centres with bevelled top draining toward cladding and fix in place at 600mm centres into studs with fixings staggered 12mm either side of the batten centreline. Provide vertical cavity battens (non-castellated) at internal and external corners.

3.13 INSTALL CAVITY BATTENS - NON COMBUSTIBLE

Position cavity battens over wall underlay vertically, centred over studs and fix in place in accordance with cavity batten manufacturer's instructions. Close top of cavity.

3.14 INSTALL CAVITY BARRIERS

Install cavity barriers to manufacturer's requirements.

3.15 INSTALL FLASHINGS

Position and fix back flashings at internal and external corners. Position and fix interstorey flashings if needed.

3.16 SETOUT VERTICAL SECRET FIX WEATHERBOARDS

Lap weatherboards with 2mm expansion gap at back between each board. Setout weatherboards plumb and true to line using laser or mechanical devices to maintain consistent cover dimension. Provide clearances to bottom of cladding in accordance with NZBC E2/AS1.

3.17 PRE-DRILL FIXINGS - FACE FIXED WEATHERBOARDS

Setout weatherboard fixings, one fixing per nog/cavity batten, positioned 10mm off lap of adjacent board and 35mm minimum from board ends with fixings aligned horizontally across all boards. Pre-drill holes for fixings, 1mmØ smaller than fixing gauge and with slight upward slope.

3.18 PRE-DRILL FIXINGS - SECRET FIXED WEATHERBOARDS

Setout weatherboard fixings, one fixing per nog/cavity batten, positioned 12mm from edge of the tongue in the positioning groove and 12mm minimum from board ends. Pre-drill holes for fixings, 1mmØ smaller than fixing gauge.

3.19 FIX WEATHERBOARDS - NON STRUCTURAL CAVITY BATTEN

Fix weatherboards through cavity batten and underlay with 30mm minimum embedment into framing. Finish fixings flush to weatherboard surface.

3.20 FIX WEATHERBOARDS - STRUCTURAL CAVITY BATTEN

Fix weatherboards with 30mm minimum embedment into structural cavity batten/framing. Finish fixings flush to weatherboard surface.

3.21 FIX WEATHERBOARDS - NON COMBUSTIBLE CAVITY BATTEN

Fix weatherboards with 8g hot dipped galvanised HDG wing tip screws, ensuring minimum penetration of three threads deep into steel battens. Finish fixings flush to weatherboard surface.

3.22 SCARF JOINTS

Provide 35° mitred scarf board joins centred over a cavity batten. Apply flashing tape behind join, apply sealant to join face and fix weatherboards with one secret nail pre-drilled 12mm minimum from each side of the join. Stagger joins 450mm minimum.

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3.23 BUTT JOIN INTERNAL CORNER BOARDS

Butt join boards at internal corners, with sealant applied in joint.

3.24 FIX CORNER MOULDS

Fix internal/external corner moulds and butt weatherboards to moulding with sealant to join.

3.25 FIX BOX CORNER COVER BOARDS

Pre-drill holes in cover boards for nail fixings, 1mmØ smaller than nail gauge. Position boards with 50mm minimum weatherboard cover and nail fix.

3.26 NOTCH EXTERNAL CORNERS

Router 9mm x 9mm tongue & groove notches in weatherboard vertical edges at external corners. Pre-drill holes in boards for fixings through notched joint, 1mmØ smaller than fixing gauge. Apply sealant to notches and nail fix through notched join.

3.27 FIX EAVES MOULDS

Nail fix eaves moulds to weatherboards.

3.28 FIX FASCIA BOARDS

Pre-drill holes in fascia boards for fixings, 1mmØ smaller than fixing gauge, position boards and fix.

3.29 FINISHING - PROTECTOR STAIN FINISH

Apply minimum one coat of Protector stain after installation, in accordance with manufacturer's instructions.

Completion

3.30 COMPLETION MATTERS

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

4 SELECTIONS

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

4.1 ABODO THERMALLY MODIFIED RADIATA PINE FSC CERTIFIED SUSTAINABLE TIMBER

Product:	Abodo Vertical Cladding products
Certification type:	FSC
Timber species:	Pinus Radiata
Origin:	New Zealand

Vulcan Cladding

4.2 ABODO VULCAN VERTICAL SHIPLAP WEATHERBOARDS

Location:	Exterior Cladding Generally
Supplier:	Abodo Wood
Profile:	WB18 - 135mm x 18mm (115mm cover)
Series/Grade:	Standard Series
Face finish:	Bandsawn
Installation type:	Over non-structural cavity battens
Fixings:	Secret fixings - hot dip galvanized 3.15mm x 60mm annular grooved Flat Head nails
Board joint type:	Scarf joint | End match joint

4.3 ABODO VULCAN COVER BOARD

Location:	Exterior Cladding Generally
Supplier:	Abodo Wood
Profile:	AW92 - 90mm x 20mm
Series/Grade:	Architectural Series - ~
Face finish:	Bandsawn
Fixings:	Stainless steel 2.8mm x 40mm ring shank Flat/Pentagon/Rose Head nails

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4.4 ABODO FASCIA BOARD

Location:	Exterior Cladding Generally
Supplier:	Abodo Wood
Profile:	AW72 - 180mm x 25mm
Series/Grade:	Architectural Series - Select Grade
Face finish:	Bandsawn
Fixings:	Stainless steel 2.8mm x 40mm ring shank Flat/Pentagon/Rose Head nails

4.5 ABODO CORNER MOULD

Location:	Exterior Cladding Generally
Supplier:	Abodo Wood
Profile:	AW43 - 40mm x 40mm x 19mm internal/external L corner mould (suitable for WB18 weatherboards)
Series/Grade:	Architectural Series - Vulcan
Face finish:	Bandsawn
Fixings	Stainless steel 2.8mm x 40mm ring shank Flat/Pentagon/Rose Head nails

4.6 ABODO EAVES MOULD

Location:	Exterior Cladding Generally
Supplier:	Abodo Wood
Profile:	AW32 - 40mm x 27mm (6mm chamfer to one corner)
Series/Grade:	Architectural Series - Vulcan
Face finish:	Bandsawn
Fixings:	Stainless steel 2.8mm x 40mm ring shank Flat/Pentagon/Rose Head nails

Components

4.7 CAVITY BATTENS - NON STRUCTURALLY FIXED

Material:	H3.2 Radiata Pine (Alternative cavity battens can be used provided they comply with NZBC E2/AS1.)
Size:	20mm thick x 45mm wide, castellated with bevelled top and bottom edges
Fixings:	Hot-dipped galvanized 2.5mm x 40mm flat head nails

4.8 CAVITY BATTENS - STRUCTURALLY FIXED

Material:	H3.2 Radiata Pine
Size:	45mm thick x 45mm wide, castellated with bevelled top and bottom edges

4.9 CAVITY CLOSER/VERMIN-PROOFING

Supplier:	Abodo Wood
Type:	Abodo AWF6 - 45mm cavity closer
Material:	304 Stainless Steel, 0.45mm minimum thickness

4.10 FLASHING

Supplier:	Abodo
Type:	Abodo AWF6 - 45mm cavity closer
Material:	304 Stainless Steel, 0.45mm minimum thickness

Coatings

4.11 COATING - STAIN

Brand:	Abodo
Product:	Protector Waterborne Stain and Protector End Seal
Colour:	Natural
Coats:	First coat - Factory Second coat - Site applied Protector End Seal - Site applied

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4.12 COATING - SIOO:X

Brand:	Sioo:x
Product:	Sioo:x Wood Coating and Sioo:x End Grain Sealer
Coats:	3 - Factory pre-finished Sioo:x End Grain Sealer - Site applied

4.13 COATING - IRON VITRIOL

Brand:	Abodo
Product:	Iron Vitriol and Abodo Protector End Seal
Coats:	3 - Factory pre-finished

Sealant

4.14 SEALANT

Type/Brand:	Sikaflex 11FC

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4231HA JAMES HARDIE AXON™ PANEL CLADDING

1 GENERAL

This section relates to the supply and fixing of James Hardie Axon™ Panel cladding.

1.1 RELATED WORK

Refer to painting section/s for the protective coating required to meet the NZBC durability requirements.

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:
LRV: Light Reflectance Value
CLD: Ceramic Low Density

Documents

1.3 DOCUMENTS

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

NZBC C/AS1	Protection from fire for buildings with sleeping (residential) and outbuildings (risk group SH)
NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 1170.2:2011	Structural design actions - Wind actions
AS/NZS 2908.2	Cellulose-cement products-Flat sheet
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber-framed buildings
AS/NZS 3837	Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter
NFPA 285:2019	Standard fire test method for evaluation of fire propagation characteristics of exterior wall assemblies containing combustible components

CodeMark Certificate CMNZ30165 - Axon™ Panel Cladding by James Hardie

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Axon™ Panel Timber Cavity Batten Technical Specification March 2024
Axon™ Panel Fixed to Hardie™ CLD™ Structural Cavity Batten Technical Specification March 2024
Axon™ Panel Direct Fixed Technical Specification March 2024
Hardie™ Flex Sheet technical specification
Fire and Acoustic Design Manual by James Hardie, May 2025
BRANZ Appraisal 1211 [2022] - Axon™ Panel Cladding
BRANZ Appraisal 1285 (2025) - James Hardie Fire And Acoustic Wall Systems - Amended 16 June 2026

Manufacturer/supplier contact details

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

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years:	For James Hardie Axon™ Panels (refer to James Hardie product warranty)

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15 year:	For accessories supplied by James Hardie (refer to James Hardie product warranty)
From:	Date of purchase

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 NO SUBSTITUTIONS
Substitutions are not permitted to any specified system, or associated components and products.

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

1.8 INFORMATION FOR OPERATION AND MAINTENANCE
Provide relevant James Hardie maintenance requirements at completion of the work.

Performance - Wind

1.9 PERFORMANCE - WIND
James Hardie Axon™ Panel is suitable for use in all wind zones up to design wind pressure of 3.2kPa ULS and building height 25m maximum.

Performance - Fire

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

1.11 EXTERNAL FIRE SPREAD - CLADDING SYSTEM AND MATERIALS
James Hardie Axon™ Panel cladding system is tested to NFPA 285 passing test criteria. Cladding materials achieve Type A classification to AS/NZS 3837 (peak heat release rate ≤ 100 kW/m², total heat release rate ≤ 25 MJ/m²).

2 PRODUCTS

Materials

2.1 RIGID AIR BARRIERS
Refer to section 4171HR JAMES HARDIE RIGID AIR BARRIERS.

2.2 WALL UNDERLAY
Refer to section 4161 UNDERLAYS, FOIL AND DPC.

2.3 EXTERIOR CAVITY WALL BATTENS
Radiata pine battens, minimum 45mm wide and 70mm wide x 18mm thick, H3.1 treated, height to match timber framing studs. To NZS 3602, Table 1, reference 1D.10, Requirements for wood-based building components to achieve a 50-year durability performance.

2.4 EXTERIOR STRUCTURAL CAVITY BATTENS
Hardie™ CLD™ Structural Cavity Batten, 3000mm long, 70mm wide and 19mm thick manufactured from treated cellulose fibre, Portland cement, sand and water. Cured by high pressure autoclaving and manufactured to AS/NZS 2908.2. James Hardie Axon™ Panel and Hardie™ CLD™ Structural Cavity Batten installed as per the James Hardie technical specification demonstrate compliance with requirements of NZBC Sections B1, B2 and E2. The battens have both faces and all edges presealed.

2.5 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING
Perforated uPVC, with upstands.

2.6 AXON™ PANEL
James Hardie Axon™ Panel, face primed shiplap jointed panels, 9.0mm and 8.5mm thick, manufactured from cellulose fibre reinforced cement to AS/NZS 2908.2. Refer to SELECTIONS.

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2.7 AXENT™ TRIM

Hardie™ Axent™ Trim, 45mm, 70mm and 89mm wide x 19mm thick, manufactured from cellulose fibre reinforced cement to AS/NZS 2908.2. Refer to SELECTIONS.

Components

2.8 FASTENER TYPE

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

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

Zone	Fixings Material
Zone B, Zone C	Hot-dipped galvanized
Bracing - All zones	Grade 316 Stainless

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

Refer to SELECTIONS.

2.9 NAIL HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN FIXING - TIMBER FRAMING

Over flexible wall underlay: 65mm x 2.8mm RounDrive ring shank nail

Refer to SELECTIONS.

2.10 NAIL - AXON™ PANEL FIXING TO TIMBER CAVITY BATTEN

Over flexible wall underlay: 65mm x 2.8mm Hardie™Flex nails

Over RAB™ Board: 75mm x 3.15mm Hardie™Flex nails

Refer to SELECTIONS.

Accessories

2.11 FLASHING TAPES - TIMBER CAVITY BATTEN

Inseal® 3259 black compressible medium density closed cell foam tape, 1.5mm thick x 48mm wide for vertical joints, and 1.5mm thick x 80mm wide for internal corners.

2.12 FLASHING TAPES - HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN

Polypropylene DPC under Hardie™ CLD™ Structural Cavity Batten internal corners. Refer to James Hardie® Axon™ Panel technical specification for selection of required width.

2.13 ALUMINIUM ACCESSORIES

Extruded aluminium etch primed. External box corners and horizontal 'h' flashing suitable for dark paints.

2.14 ADHESIVE FOR HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN

Adhesive to be applied continuous 6mm thick bead(s) to the face of Hardie™ CLD™ Structural Cavity Batten to adhere the Axon™ Panel.

2.15 SEALANT

Flexible sealant. Refer to the sealant manufacturer's technical literature to confirm suitability for the application.

3 EXECUTION

Conditions

3.1 STORAGE

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

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3.2 HANDLING

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

3.3 SUBSTRATE

Do not commence work until the substrate is of the standard required for the specified finish; plumb, level and in true alignment. Moisture content of timber framing must not exceed the requirements specified by NZS 3602 to minimise shrinkage and movement after panels are fixed.

Confirm that 70mm minimum framing for vertical joints for timber cavity construction has been correctly installed.

3.4 SEAL EDGES

Seal site cut sheet edges prior to installation. Seal panel edges around window and door openings, meter boxes and at other penetrations.

3.5 SEAL CUT ENDS, HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN

Site cut batten ends to be between 20 - 45 degrees and sealed with Dulux 1 Step or Resene Quick Dry sealer prior to installation with the butt joint deflecting moisture to the exterior.

Application - particular installations

3.6 FIRE RESISTANCE RATING

Install mineral fibre insulation or glass fibre insulation fitted tightly in the timber framing cavity. Apply fire retardant wall underlay to the exterior face of the framing and fix fibre cement cladding and lining sheets, direct or on cavity. Refer to project drawings for FRR system construction details and Fire and Acoustic Design Manual by James Hardie for further information.

3.7 BRACING SYSTEM

Fix panels in accordance with Bracing Design Manual by James Hardie.

Application - generally

3.8 RIGID AIR BARRIER

Refer to 4171HR JAMES HARDIE RIGID AIR BARRIERS.

3.9 FIX WALL UNDERLAY

Refer to 4161 UNDERLAYS, FOIL AND DPC.

3.10 TIMBER CAVITY BATTENS

Install 18mm minimum thick cavity battens to NZBC E2/AS1, 9.0 Wall claddings, where required. Fix vertical cavity battens to wall framing studs. The battens are fixed by the cladding fixings which will penetrate the wall framing studs over the wall underlay. Seal the top of the cavity and install cavity closer/vermin-proofing at base of walls, open horizontal (or raking) junctions, over openings (windows, meters etc).

Do not use continuous horizontal cavity battens at nogs or at bottom plate. Use cavity spacers where fixing is required between cavity battens.

3.11 HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN - TIMBER FRAME

Apply 150mm wide strip of DPC vertically to internal corners over continuous air barrier. Fix battens to all studs over the wall underlay using 65mm x 2.8mm RounDrive ring shank nails at fixing centres as per James Hardie Axon™ Panel Fixed to Hardie™ CLD™ Structural Cavity Batten Technical Specification, Table 4: Hardie™ CLD™ Structural Cavity fixings. Refer to Table 6 for durability requirements of fixings.

3.12 PENETRATIONS AND FLASHINGS

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

- Wall underlay appropriately incorporated with penetration and junction flashings.
- Materials lapped in a way that water tracks down to the exterior face of the wall underlay.
- Wall underlay to openings finished and dressed off ready for the installation of window and door frames and other penetrations
- Required holes in cladding accurately formed and cut to James Hardie requirements, ensure (if required) services penetration grommets/sleeves/seals/tapes are in place prior to cladding installation.

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- Claddings neatly finished off to all sides of openings
- Installation of flashings (those required to be installed prior to installation of penetrating elements).

Install Axon™ Panel cladding

3.13 PANEL LAYOUT

All panel edges must be supported by the framing. Fix Axon™ Panels vertically.

3.14 FASTENER - SIZE AND LAYOUT

Fix Axon™ Panels to framing using the fixings specified in James Hardie® Axon™ Panel technical specifications and in accordance with the following requirements:

- Nails must have a minimum clearance of 18mm from sheet edges and a minimum of 75mm vertically and 150mm horizontally from sheet corners.
- Nails must finish flush with sheet surface.

3.15 FIXING - DIRECT FIXED TO FRAME

Fix with 40mm x 2.8mm Hardie™ Flex nails. Fix sheet at 200mm centres at all sheet edges as well as all intermediate framing. Alternatively fix with ND50 brad nails at 150mm centres.

3.16 FIXING - TIMBER CAVITY CONSTRUCTION, FLEXIBLE UNDERLAY

Fix with 65mm x 2.8mm Hardie™ Flex nails when fixed over a flexible underlay. Fix sheet at 200mm centres at all studs.

3.17 FIXING - TIMBER CAVITY CONSTRUCTION, RIGID AIR BARRIER

Fix with 75mm x 3.15mm Hardie™ Flex nails when fixed over a rigid air barrier. Fix sheet at 200mm centres at all studs.

3.18 FIXING - AXON™ PANEL OVER HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN

Apply continuous 6mm thick bead(s) of adhesive to the face of Hardie™ CLD™ Structural Cavity Batten to adhere the Axon™ Panel, and fix with C-25 brad nails at 150mm centres. Refer to Axon™ Panel technical specifications.

3.19 GUN NAILING

Axon™ Panels can be fixed using nail guns. The gun nails used must have a full round head to provide the required holding power. The length and gauge of nails must at a minimum be as specified in the James Hardie Axon™ Panel technical specifications.

3.20 VERTICAL JOINT

Joint Axon™ Panels in accordance with James Hardie Axon™ Panel technical specifications.

3.21 HORIZONTAL JOINT

Provide a horizontal joint at floor joist levels to accommodate the movement resulting from timber joist shrinkage and settlement. Install a 'z' flashing where drainage is required at floor level.

For Axon™ Panels use a Hardie™ 9mm Panel aluminium 'h' mould complete with 'h' mould jointer, external corner jointer or a Hardie™ 9mm aluminium angled 't' mould complete with angled 't' mould jointer, external corner jointer or a purpose made 'z' flashing to form a horizontal joint.

3.22 INTERNAL CORNER JOINT - DIRECT FIX

Seal site cut Axon™ Panel edges. Position and fix Axon™ Panels and Hardie™ 9mm aluminium internal corner mould in accordance with James Hardie Axon™ Panel Technical Specification details.

3.23 INTERNAL CORNER JOINT - TIMBER CAVITY BATTENS

Seal site cut Axon™ Panel edges. Position and fix Axon™ Panels and Hardie™ 9mm aluminium internal corner mould to internal corner over cavity battens, fixing in accordance with James Hardie Axon™ Panel Technical Specification details.

3.24 INTERNAL CORNER JOINT - HARDIE™ CLD™ STRUCTURAL CAVITY BATTENS

Apply continuous 10mm beads of adhesive sealant to Hardie™ CLD™ Structural Cavity Battens. Seal site cut Axon™ Panel edges. Fix Hardie™ 9mm aluminium internal corner mould through Hardie™ CLD™ Structural Cavity Battens into framing. Position and fix Axon™ Panels through Hardie™ CLD™ Structural Cavity Battens into framing, fixings 18mm minimum from square edge of sheet in accordance with James Hardie Axon™ Panel Technical Specification details.

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3.25 EXTERNAL CORNER JOINT - DIRECT FIX

Seal site cut Axon™ Panel edges. Position and fix Axon™ Panels and Hardie™ 9mm Aluminium External Box corner or Hardie™ Alumnium Invert External Corner continuous wall underlay, fixing in accordance with James Hardie Axon™ Panel Technical Specification details.

3.26 EXTERNAL CORNER JOINT - TIMBER CAVITY BATTENS

Seal site cut Axon™ Panel edges. Fix Hardie™ 9mm Aluminium External Box corner or Hardie™ Alumnium Invert External Corner through cavity battens into framing. Position and fix Axon™ Panels through cavity battens into framing, fixing in accordance with James Hardie Axon™ Panel Technical Specification details.

3.27 EXTERNAL CORNER JOINT - HARDIE™ CLD™ STRUCTURAL CAVITY BATTENS

Install Hardie™ CLD™ Structural Cavity Battens in accordance with James Hardie Axon™ Panel Technical Specification details. Seal site cut Axon™ Panel edges. Position and fix Axon™ Panels and Hardie™ 9mm Aluminium External Box corner or Hardie™ Alumnium Invert External Corner over battens, fixing in accordance with James Hardie Axon™ Panel Technical Specification details.

3.28 EXTERNAL CORNER JOINT WITH H MOULD

Fit Hardie™ 9mm Panel aluminium horizontal 'h' mould over lower Axon™ Panel and lap the upstand under upper Axon™ Panel. Leave 15mm gap maximum between upper and lower Axon™ Panels at the solid timber floor joist levels.

Fit Hardie™ 9mm Panel aluminium external box corner under the aluminium 'h' mould with flanges removed locally. Mitre the 'h' mould over box corner flashing to cover it. Install "h" mould external corner jointer over. The upper box corner flashings are to be finished flush with the bottom edge of upper Axon™ Panel.

An aluminium corner flashing is required over the Hardie™ 9mm Panel aluminium horizontal flashing where the box corner is terminated under the 'h' mould. Hardie™ 9mm Panel aluminium external box corner flanges to be removed locally over the aluminium 'h' mould and corner underflashing to be lapped under the upper box corner flashing. Lap wall underlay over aluminium 'h' mould or seal to flashing with a flashing tape. Refer to Axon™ Panel technical specifications.

3.29 FIX AXENT™ TRIM

Fix Hardie™ Axent™ Trim to internal corners, external corners, vertical joints and intermediate vertical locations in accordance with James Hardie Axon™ Panel Technical Specification details.

3.30 FINISHING

Refer to painting section/s for protective coating system.

Completion

3.31 REPLACE

Replace all damaged or marked elements.

3.32 LEAVE

Leave work to the standard required for following procedures.

3.33 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

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

4.1 TIMBER CAVITY BATTENS

Timber species:	Radiata pine
Treatment:	H3.1
Size:	45mm wide x 18mm thick minimum, height to match framing studs
Batten spacing:	600mm crs (where framing at 600mm crs)
Fastener type:	40mm x 2.8mm Hardie™ Flex nails
Fastener finish:	Hot-dipped galvanized
Fixing centres:	800mm

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4.2 JAMES HARDIE AXON™ PANELS - SHEET CLADDING PANELS

Brand/type:	James Hardie Axon Panel Smooth
Thickness:	9mm
Fastener type:	75mm x 3.15mm Hardie™Flex nail over rigid air barrier
Fastener finish:	Hot-dipped galvanized
External corner type:	Hardie™ Alumnium Invert External Corner

Finishing

4.3 PAINTING

Refer to painting section/s for details.

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4239JH JAMES HARDIE® SOFFITS

1 GENERAL

This section relates to the supply and fixing of James Hardie® soffit and eave linings.
It includes:

- James Hardie® Eclipsa™ Eaves Lining
- James Hardie® Hardie™ Flex Eaves Lining
- James Hardie® Hardie™ Groove Soffit Lining
- James Hardie® Villaboard™ Soffit Lining

Documents

1.1 ABBREVIATIONS AND DEFINITIONS

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

1.2 DOCUMENTS

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

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 1170.2:2011	Structural design actions - Wind actions
AS/NZS 2908.2	Cellulose-cement products - Flat sheet
NZS 3604	Timber-framed buildings

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Eaves and Soffits Installation Manual by James Hardie® (Feb 2025)
Fire and Acoustic Design Manual by James Hardie, May 2025
James Hardie® Eclipsa™ Eaves Lining Product Technical Statement
James Hardie® Hardie™ Groove Lining Product Technical Statement
James Hardie® Villaboard™ Lining Product Technical Statement
James Hardie® Eaves and Soffit Care and Maintenance
BRANZ Appraisal 1285 (2025) - James Hardie Fire And Acoustic Wall Systems - Amended 16 June 2026

Manufacturer/supplier contact details

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

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years:	For lining product and accessories

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

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - MANUFACTURER/SUPPLIER - ECLIPSA EAVES LINING

Provide a material manufacturer/supplier warranty:

15 years:	For Eclipsa™ lining product and accessories
10 years:	For coating

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the

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standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of purchase

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY
Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS
Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.8 INFORMATION FOR OPERATION AND MAINTENANCE
Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:
James Hardie® Eaves and Soffit Care and Maintenance

Performance

1.9 PERFORMANCE - UP TO AND INCLUDING VERY HIGH WIND ZONE
The design wind speeds/zones are to NZS 3604, up to and including Very High Wind Zone. Eaves and Soffits Installation Manual by James Hardie® requirements are suitable for these conditions.

2 PRODUCTS

Materials

2.1 VILLABOARD™ SOFFIT LINING
James Hardie® Villaboard™ Soffit Lining, 6mm and 9mm thick cellulose fibre reinforced cement sheet. Manufactured to AS/NZS 2908.2 from Portland cement, ground sand, cellulose fibre and water.

Components

2.2 FASTENER TYPE
Fasteners to minimum durability requirements of the NZBC. Refer to NZBC E2/AS1, Table C.1.1.1A: Material selection, for fixing material, and NZBC E2/AS1, Table C.1.1.1B: Compatibility of materials in contact, for selection of suitable fixing materials and their compatibility with other materials.

Exposure	Fixing	Fixing Material	Zone
Sheltered	Nail	Hot-dip galvanized steel	B
Sheltered	Nail	Stainless steel	B, C, D, E
Sheltered	Screw	Stainless steel	B, C, D, E

Check against SED (specific engineering design) requirements for microclimate conditions. Refer to SELECTIONS for fastener type.

Components - Eclipsa™ Eaves Lining

2.3 SOFFIT JOINTERS AND MOULDS
Extruded uPVC jointers, capping and scotia mould.

2.4 HARDIE™ FLEX NAIL
Hardie™ Flex Nail, 40 x 2.8mm stainless steel or galvanized nail, Refer to SELECTIONS.

2.5 FASTFIX FASTENER
38 x 12mm, Nylon / White Fastfix Fasteners.

2.6 ADHESIVE
Refer to SELECTIONS.

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Components - Hardie™ Flex Eaves Lining

2.7 HARDIE™ FLEX NAILS
Hardie™ Flex Nail, 40 x 2.8mm stainless steel or galvanized nail, Refer to SELECTIONS.

2.8 FASTFIX FASTENER
38 x 12mm, Nylon / White Fastfix Fasteners.

2.9 ADHESIVE
Refer to SELECTIONS.

2.10 INSEAL TAPE
Inseal® 3259, 1.5mm thick x 48mm wide black compressible medium density closed cell foam tape.

2.11 POLYPROPYLENE TAPE
Polypropylene tape, 30mm minimum width.

Components - Hardie™ Groove Soffit Lining

2.12 SCOTIA MOULD
Extruded uPVC two piece scotia mould

2.13 SCREW
Hardie™ Drive Screw, 316 stainless steel, 30mm x 7g or Villadrive Screw, 30mm x 6g, Class 3.
Refer to SELECTIONS.

2.14 HARDIE™ FLEX NAIL
Hardie™ Flex Nail, 40 x 2.8mm stainless steel or galvanized nail, Refer to SELECTIONS.

2.15 ADHESIVE
Refer to SELECTIONS.

2.16 INSEAL TAPE
Inseal® 3259, 1.5mm thick x 48mm wide black compressible medium density closed cell foam tape.

2.17 BASE COMPOUND
Hardie™ Base Coat.

Components - Villaboard™ Soffit Lining

2.18 SOFFIT JOINTERS
Extruded uPVC jointer.

2.19 CAPPING & SCOTIA MOULDS
Extruded uPVC capping and scotia mould.

2.20 INSEAL TAPE
Inseal® 3259, 1.5mm thick x 48mm wide black compressible medium density closed cell foam tape.

2.21 POLYPROPYLENE TAPE
Polypropylene tape, 30mm minimum width.

2.22 CONTROL JOINT
Refer to SELECTIONS.

2.23 HARDIE™ DRIVE SCREW
Hardie™ Drive Screw, 316 stainless steel, 30mm x 7g

2.24 VILLADRIVE SCREW
Villadrive Screw, 30mm x 6g, Class 3

2.25 FIBREZIP® SCREW
FibreZip® Screw, self drilling rib head screw, Class 3

2.26 HARDIE™ FLEX NAILS
Hardie™ Flex Nail, 40 x 2.8mm stainless steel or galvanized nail, Refer to SELECTIONS.

Spec Version ID: 380567-458925
Document authenticity may be verified at masterspec.co.nz/verify/380567-458925
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2.27 SEALER
Multiplast resin by Plaster systems

2.28 BASE COMPOUND
Hardie™ Base Coat for flush finishing over recessed screw heads.

2.29 JOINT REINFORCING TAPE
52mm wide perforated paper tape.

2.30 BEDDING COMPOUND
Hardie™ Base Coat compound powder.

2.31 FINISHING COMPOUND
Hardie™ Top Coat topping compound premixed.

Components - General

2.32 FLEXIBLE JOINT SEALANT
Refer to SELECTIONS.

Accessories

2.33 MASKING TAPE
3M Scotch Blue painters tape 2090-18E or Sellotape 5855 Long Life.

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 timber framing: 18% maximum

Installation/application

3.4 STANDARDS AND TOLERANCES
Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 FIRE RESISTANCE RATING
Install fire rated soffit as part of a James Hardie® FRR exterior system. Refer to project drawings for FRR system construction details and Fire and Acoustic Design Manual by James Hardie® for further information.

3.6 CURVED APPLICATIONS
Install in accordance with James Hardie® installation manual requirements, mechanically fix at 200 mm centres maximum.

Application - general

3.7 SHEET LAYOUT
All sheet edges must be fully supported by framing or rebates in fascia and barge boards.

3.8 OFFSET PATTERN SHEET LAYOUT
All sheet edges must be fully supported by framing or rebates in fascia and barge board. Sheets must be laid in an offset pattern so that adjacent end joints do not coincide.

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3.9 CUTTING SOFFIT CLADDING

Cut sheets dry using score and snap method, hand guillotine method or fibreshear heavy duty method. If these methods are not feasible, use an alternative manufacturer approved method.

3.10 CIRCULAR HOLE FORMING

Mark the centre of the hole on the sheet, pre-drill a pilot hole. Use the pilot hole as a guide for a hole saw fitted to a heavy duty electric drill.

3.11 IRREGULAR HOLE FORMING

Drill a series of small holes around the perimeter of the proposed hole, tap out the waste piece from the sheet face.

3.12 INSTALL ECLIPSA™ EAVES LINING

Install in accordance with James Hardie® installation manual requirements. Refer to SELECTIONS for fixing and jointing methods.

3.13 INSTALL HARDIE™ FLEX EAVES LINING

Install in accordance with James Hardie® installation manual requirements. Refer to SELECTIONS for fixing and jointing methods.

3.14 INSTALL HARDIE™ GROOVE SOFFIT LINING

Install in accordance with James Hardie® installation manual requirements. Where required butt joint short ends of cladding (cut square and form chamfer to match) and align to provide continuation of grooved profile line Refer to SELECTIONS for fixing and jointing methods.

3.15 INSTALL VILLABOARD™ SOFFIT LINING

Install in accordance with James Hardie® installation manual requirements. Refer to SELECTIONS for fixing and jointing methods.

3.16 SEAL EDGES

Seal Villaboard™ Soffit Lining sheet edges with Multiplast Resin in a diluted form prior to flush stopping.

3.17 BUTT JOINT

Paint sheet edges prior to installation.

3.18 CONTROL JOINT

Install control joint to James Hardie® installation manual requirements.

3.19 FASTENER - SIZE AND LAYOUT

Fix sheets to framing using fasteners as nominated in SELECTIONS. Fix to James Hardie® installation manual requirements.

3.20 INSTALL FASTFIX FASTENERS

Drill a 6mm diameter hole through the sheet and framing, insert Fastfix Fastener.

3.21 ADHESIVE

Application and use of adhesive to manufacturer's instructions and to suit the fastener layout requirements.

3.22 SEALANTS

Application and use of sealants to manufacturer's instructions. Check with sealant manufacturer prior to coating over sealants.

3.23 FINISHING OVER DRIVEN FASTENERS

Fill over driven fasteners with Hardie™ Base Coat to the required level of finish.

3.24 VILLABOARD™ JOINT FINISHING - LEVEL 3 FINISH

Set joints with Hardie™ jointing compounds reinforced with perforated paper tape. Jointing and finishing to requirements of James Hardie installation manual to achieve a level 3 finish.

3.25 VILLABOARD™ JOINT FINISHING - LEVEL 4 FINISH

Set joints with Hardie™ jointing compounds reinforced with perforated paper tape. Jointing and finishing to requirements of James Hardie® installation manual to achieve a level 4 finish.

3.26 VILLABOARD™ JOINT FINISHING - LEVEL 5 FINISH

Set joints with Hardie™ jointing compounds reinforced with perforated paper tape. Jointing and finishing to requirements of James Hardie® installation manual to achieve a level 5 finish.

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3.27 PAINTING
Refer to painting section/s for protective coating system.

Completion

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

4 SELECTIONS

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

Materials

4.1 VILLABOARD™ SOFFIT LINING - FLUSH JOINTED

Location:	Soffits Generally
Brand/type:	James Hardie® Villaboard™ Soffit Lining
Thickness/Edge:	9mm thick sheet with 2 recessed edges to length - 1.2m x 2.4m, 1.2m x 2.7m, 1.2m x 3.0 m sheets
Joint:	Flush joint (base compound and topping compound)
Fixing method:	Screw and adhesive - superior finish by minimising screw fixings.
Fixing Type:	FibreZip® Screw
Adhesive:	Sikaflex-11FC by Sika or Seal N Flex-1 by Bostik
Level of Finish:	Level 4 - for smooth textured finishes and satin/flat/low sheen paints in non-critical lighting conditions.
Control joint type:	expressed control joint with polythene tape.

Painting

4.2 PAINTING
Refer to painting section/s for details.

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4263F FIRTH VENEER CLADDING

1 GENERAL

This section relates to supply and installation of Firth Industries Ltd masonry veneer cladding system.

1.1 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

DPC	Damp-proof course
uPVC	Unplasticized polyvinyl chloride

Documents

1.2 DOCUMENTS

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

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10m in height
AS/NZS 2699.1	Built-in components for masonry construction - Wall ties
AS/NZS 2699.3	Built-in components for masonry construction - Lintels and shelf angles (durability requirements)
AS/NZS 4455.1	Masonry units, pavers, flags, and segmental retaining wall units - Masonry units
NZS 4210	Masonry construction, materials and workmanship

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

Firth Industries Brick Brochure
Firth Industries Two Storey Brick Veneer Solutions (June 2019)
Firth Industries Brick Veneer Technical Guide (November 2025)
Firth Industries Concrete Masonry Bricks Product Technical Statement
Firth Industries Control Joint Specification (alternative Slip Joint)
Firth Industries Building Product Warranty
Firth Industries Masonry Product Care Information
Firth Industries Masonry Bricks (Veneers) BPIS
BRANZ Appraisal 967 (2019) Firth Two Storey Masonry Veneer Solutions

Manufacturer/supplier contact details

Company:	Fletcher Concrete and Infrastructure Limited
Trading as:	Firth Industries
Web:	www.firth.co.nz
Email:	info@firth.co.nz
Telephone:	0800 347 841

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.

1.5 NO SUBSTITUTIONS

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

1.6 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:
Firth Industries Masonry Product Care Information

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Provide this information prior to practical completion.

Compliance information

1.7 COMPLIANCE - BRANZ APPRAISAL
Firth Two Storey Masonry Veneer Solutions has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 967.

2 PRODUCTS

Materials

2.1 MASONRY VENEER
Firth concrete masonry veneers manufactured to AS/NZS 4455.1. Refer to SELECTIONS.

Components

2.2 STEEL LINTELS
Galvanized mild steel or stainless steel angle to AS/NZS 2699.3. Refer to SELECTIONS.

2.3 SHELF ANGLES
Galvanized mild steel or stainless steel angle to AS/NZS 2699.3. Refer to SELECTIONS.

2.4 WALL TIES
Galvanized or stainless steel wall ties to AS/NZS 2699.1. Refer to SELECTIONS.

2.5 MORTAR
Dricon Trade Mortar pre-bagged and factory manufactured to NZS 4210. Refer to SELECTIONS.

2.6 WATER
Clean, fresh water for mortar mix, free from alkali, salt, silt and organic materials.

2.7 CONTROL JOINT
Flexible sealant or mortar over compressible foam backing rod to NZBC E2/AS1.

2.8 FIRTH CONTROL JOINT
Polythene tape to Firth Control Joint Alternative Slip Joint requirements.

2.9 MASONRY REBATE DAMP-PROOF COURSE
To NZBC E2/AS1, paragraph 9.2.5.4. Refer to SELECTIONS.

2.10 FLASHINGS - HEAD & SILL
To NZBC E2/AS1, paragraph 9.2.4.1. Refer to SELECTIONS.

2.11 FLASHINGS - JAMB
To NZBC E2/AS1, paragraph 9.2.4.2. Refer to SELECTIONS.

Accessories

2.12 VERMIN STOP
Fine gauged galvanized or stainless steel wire mesh, or proprietary uPVC product required where gaps in veneer exceed 13mm to NZBC E2/AS1. 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.

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3.3 PRE-INSTALLATION REQUIREMENTS
Check work previously carried out and confirm it is of the required standard for this part of the work.

Timber substrate: 18% maximum moisture content

3.4 WET WEATHER
Keep veneers dry at all times prior to laying. Protect the top row of uncompleted veneer walls. Protect freshly laid masonry during interruption through rain and at completion of each day's work.

3.5 COLD WEATHER CONSTRUCTION
When air temperature is below 5°C take the precautions required by NZS 4210: 2.18 Cold weather construction.

3.6 HOT WEATHER CONSTRUCTION
When air temperature is above 25°C or there is a drying wind, or lower temperatures, take the precautions required by NZS 4210: 2.19 Hot weather construction.

3.7 KEEP FACE WORK CLEAN
Keep clean during erection and until completion of the contract works. Turn back scaffold boards at night and during heavy rain. Do not rub face work to remove stains.

3.8 COLOUR MIXING
Check all veneers delivered to site for colour variation, prior to commencing work. Ensure veneers are thoroughly blended from several pallets to ensure an even colour spread throughout the work.

3.9 UNIFORMITY
Carry up work with no portion more than 1500mm above another at any time, raking back between levels.

Installation/application

3.10 STANDARDS AND TOLERANCES
Refer to the general section 1270 CONSTRUCTION for general requirements.

3.11 INSTALLATION GENERALLY
Install masonry veneer system in accordance with Firth Brick Veneer Technical Guide.

3.12 MASONRY REBATE DAMP PROOF COURSE
Apply damp proofing to stepped rebates supporting masonry veneer.

3.13 FLASHINGS GENERALLY
Install flexible flashings to NZBC E2/AS1, 9.2.10 Windows and doors.

3.14 HEAD FLASHINGS
Extend flashing 200mm beyond ends of the opening, sloping to weepholes and turned into steel lintel angle.

3.15 JAMB FLASHINGS
Install flashing fully lapped with horizontal DPC at head and sill.

3.16 SILL FLASHINGS
Extend flashing 200mm beyond ends of the opening with a drip edge over kick-out fillet.

3.17 CAVITY WIDTH
No cavity width less than 40mm or more than 75mm unless detailed otherwise.

3.18 CAVITY VENTILATION
Ventilate the top of masonry veneer to outside air to NZBC E2/AS1, paragraph 9.2.6.5. Seal cavity off from the roof space.

3.19 WEEPHOLES
Provide drainage weepholes at the bottom of cavities and cells, including above openings, to NZBC E2/AS1, paragraph 9.2.6.4. Seal cavity off from floor space.

3.20 INSTALL LINTELS
Seat steel lintel angles into adjacent brick as follows:

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Maximum opening span:	Minimum seating:
Up to and including 2m	100mm
Over 2m to maximum 4.8m	200mm

3.21 INSTALL SHELF ANGLES

Fix shelf angles to framing with galvanized coach screws as follows:

Height of veneer above roof line:	Fixing:
Up to and including 3m	M12x75mm at maximum 400mm centres
Over 3m to maximum 4m	M16x75mm at maximum 400mm centres

3.22 BONDING

Lay veneer with 10mm thick mortar joints to specified bond. Refer to SELECTIONS.

3.23 WALL TIES

Fix wall ties to framing to NZBC E2/AS1, Table 9.2.7.1A: Specification of maximum tie spacings for type B veneer ties.

3.24 CONTROL JOINTS

Install compressible foam backing rod into joint space and cover with mortar or sealant to NZBC E2/AS1, 9.2.8 Control Joints.

3.25 FIRTH CONTROL JOINT

Install control joints to Firth Control Joint, Alternative Slip Joint requirement. Place polythene tape on the top and an end of each unit to cover at least 75% of its width and to cover core holes in the brick. Place mortar on the horizontal bed and the end of the unit to be laid.

3.26 VERMIN STOP

Install vermin proofing to gaps greater that 13mm to NZBC E2/AS1, paragraph 9.2.6.4.

3.27 EFFLORESCENCE, WATER CLEANING

To remove deposits, brush with a stiff-bristle broom. Wash surface down with a damp sponge and fresh water.

Completion & Commissioning

3.28 COMPLETION MATTERS

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

4 SELECTIONS

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

4.1 FIRTH INDUSTRIES MASONRY VENEER - STRATA

Location:	Ground Floor Generally
Brand:	Firth Industries
Type:	Strata® 70 Series
Size:	290mm(L) x 75mm(H) x 70mm(D)
Bond:	Stretcher Bond
Edge:	Straight Edge
Colour:	Premium White
Sill:	Firth 05.17 grey masonry sill

Components

4.2 STEEL LINTELS

Location:	Ground Floor Generally
Size:	Refer NZBC E2/AS1 Table 9.2.9.4B: Minimum masonry veneer lintel sizes for masonry veneer with a maximum thickness of 70mm
Material:	600g/m2 galvanized steel (suitable for exposure zones B and C)

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4.3 SHELF ANGLES

Location:	Ground Floor Generally
Size:	100mm x 75mm x 6mm thick
Material:	600g/m2 galvanized steel (suitable for exposure zones B and C)

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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.

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)

Warranties

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years	for installation

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

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

1.8 INFORMATION FOR OPERATION AND MAINTENANCE

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

Provide this information prior to practical completion.

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.

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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

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.

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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.

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 - CORRUGATE ROOFING

Location:	Roofing Generally
Profile:	Corrugate
BMT/material:	0.4mm BMT
Coating system:	Colorcote® Zinacore™
Colour:	Gull Grey
Protective film:	No
Effective cover:	762mm
Profile height:	18mm
Purlin material:	Timber
Fixing:	Class 5, Timbertite 12g x55 with neo
Fixing pattern:	Refer to Dimond Roofing Corrugated literature for details

4.2 DIMOND ROOFING - VEEDEK ROOFING

Location:	Roofing Generally
Profile:	Veedek
BMT/material:	0.4mm BMT
Coating system:	Colorcote® Zinacore™
Colour:	Gull Grey
Protective film:	No.
Effective cover:	755mm
Profile height:	28mm
Purlin material:	Timber
Fixing:	Class 5, Timbertite, 12gx65 with neo
Fixing pattern:	Refer to Dimond Roofing Veedek literature for details

Accessories

4.3 FLASHINGS - GENERALLY

BMT/material:	0.55mm BMT
Coating system:	To match roofing
Paint colour:	To match roofing

4.4 FLASHINGS - INACCESSIBLE

Material/thickness:	055mm BMT

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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

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	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:

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.

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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

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.

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 - CODEMARK CERTIFICATE

APL Metro Series ThermalHEART® with Centrafix™ windows and doors meets the requirements of the NZBC when used within the Conditions and Limitations of its CodeMark Certificate of Conformity CMNZ10033.

1.14 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.

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Performance

1.15 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.

1.16 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.

1.17 THERMAL PERFORMANCE - SKYLIGHTS

Thermal performance of skylights to NZBC H1/AS1 or H1/AS2 & NZBC H1/VM1 or H1/VM2. The construction R-value of skylight determined by NZBC H1/VM1 or H1/VM2, Appendix D, D2 Skylights:

- Thermal transmittance of skylights to ISO 10077-1.
- Thermal transmittance of framing to ISO 10077-2.
- Thermal transmittance of glazing using BS EN 673, considering the effects of horizontal or angled glazing on the heat transfer.

Refer to SELECTIONS for Construction R-values.

2 PRODUCTS

2.1 WINDOWS

Refer to SELECTIONS.

2.2 DOORS

Refer to SELECTIONS.

2.3 ROOF WINDOWS AND OVERHEAD GLAZING SYSTEMS

Refer to SELECTIONS.

Materials

2.4 ALUMINIUM EXTRUSIONS

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

2.5 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

2.6 STAINLESS STEEL SHEET AND STRIP

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

2.7 GLASS

Refer to the glazing section for glass types and installation.

Reveals

2.8 REVEALS - TIMBER PAINTED

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

2.9 REVEALS - ALUMINIUM

Aluminium reveals fitted to frame via thermal break.

2.10 REVEALS - PVC

Prefinished thermoplastic PVC reveals grooved for wall linings.

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Flashings

2.11 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.

Components for installation - direct fix systems

2.12 SILL PAN FLASHING

To NZBC E2/AS1, paragraphs 9.1.10.3 - 9.1.10.6. Flashing for direct fix claddings to collect and drain water that may penetrate through the window or door unit. Size to extend from the inner most point of the aluminium frame out over the external face of the cladding.

2.13 SUPPORT ANGLE

WGANZ aluminium support angle for use below the sill pan for deeper claddings to transfer the weight of the window back to the frame. Size to suit cladding thickness.

Components for installation - cavity systems

2.14 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.

2.15 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.

2.16 CENTRAFIX SILL SUPPORT BAR

Extruded aluminium sill support bar to suit Centrafix window profile and provide continuous support to the window / door unit.

Components

2.17 GLAZING GASKETS

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

2.18 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.

2.19 SAFETY STAYS

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

2.20 FIXING BRACKETS

Designed by manufacturer to specific design.

2.21 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.

Accessories

2.22 TRICKLE VENTILATORS

To NZBC G4/AS1, paragraph 2.2.2.5 for trickle ventilators. Refer to SELECTIONS.

Finishes

2.23 FROST ULTRA ANODISED ALUMINIUM

To WGANZ SFA 3503-03. Refer to SELECTIONS.

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2.24 DURALLOY +PLUS POWDER COATED ALUMINIUM

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

2.25 DURATEC POWDER COATED ALUMINIUM

High-performance polyester powder coating in accordance with WGANZ PQAS and AAMA 2604. Refer to SELECTIONS.

2.26 FLUOROSET POWDER COATED ALUMINIUM

Very high-performance PVF2 fluoropolymer powder coating in accordance with WGANZ PQAS and AAMA 2605. 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.

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.

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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 INSTALLATION METRO SERIES THERMALHEART WITH CENTRAFIX

Install in accordance with Centrafix™ System Guide with glazing and thermal insulators aligned with the wall insulation. Face fix through protruding aluminium fins overlapping the outside face of the framing through building underlays.

3.18 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.

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

3.19 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.

3.20 FIX HARDWARE

Fix all sash and door hardware and furniture as scheduled.

Installation - roof windows and overhead glazing systems

3.21 INSTALL ROOF WINDOWS AND OVERHEAD GLAZING SYSTEMS

Check that the trimmed openings are formed and constructed to suit the required units. Do not proceed until roof and structural openings are properly formed. Install flashings and over-flashings as detailed and as required to make the installation completely weatherproof. Install and fix the roof window units strictly in accordance with the roof window manufacturer's requirements and installation instructions.

3.22 ROOF WINDOW ACCESSORIES AND OPERATING SYSTEMS

Install selected accessories and hardware. Install and complete all operating systems.

Application - jointing and sealing

3.23 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.

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3.24 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.

3.25 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.

3.26 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.

3.27 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.

3.28 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.

3.29 MANIFESTATIONS

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

Completion & Commissioning

3.30 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.

Performance

4.1 THERMAL PERFORMANCE - WINDOWS & DOORS

Window /Door Number:	Construction R-value:
Aluminium System Generally	Aluminium Thermally Broken Frame, Low E/Clear/Argon R0.50

Finishes - Powder Coating

4.2 DURALLOY +PLUS - POWDER COATING FINISH

Type:	Polyester organic powder coating
System integrity:	Minimum 15 years film integrity, 15 years colour integrity
Colour:	Gull Grey

Glazing

4.3 GLASS

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

Window and door system - RESIDENTIAL SERIES - THERMALHEART+®

4.4 APL RESIDENTIAL THERMALHEART+ FIXED WINDOW

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved
Window No.:	As per window and door schedule included on drawings

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4.5 APL RESIDENTIAL THERMALHEART+ AWNING WINDOW

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved
Window No.:	As per window and door schedule included on drawings
Fastener range:	Urbo Helix

4.6 APL RESIDENTIAL THERMALHEART+ CASEMENT WINDOW

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved
Window No.:	As per window and door schedule included on drawings

4.7 APL RESIDENTIAL THERMALHEART+ SLIDING WINDOW

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved
Window No.:	~

4.8 APL RESIDENTIAL THERMALHEART+ SLIDING DOOR

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

4.9 APL RESIDENTIAL THERMALHEART+ HINGED DOOR

Type:	APL Residential Series THERMALHEART+®
Frame type:	Thermally Improved
Door No.:	As per window and door schedule included on drawings

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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.

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.

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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.

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.

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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.

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.

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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.

~

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 SOLUX-E® - TINTED LOW E THERMAL AND SOLAR CONTROL IGU

Location:	All IGUs
Brand/type:	AGP SOLUX-E® & TINT
Outer glass tint colour:	Grey
Outer glass thickness:	4mm
Spacer width:	16mm
Spacer type:	ATS-Architectural Thermal Spacer®
Space gas:	Argon
Inner glass brand/type:	AGP SOLUX-E
Coated surface:	#3
Inner glass type:	Clear
Inner glass thickness:	4mm

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4710EC ECOINSULATION® GLASSWOOL INSULATION

1 GENERAL

This section relates to the supply and installation of ecoinsulation® glasswool thermal and acoustic insulation.

It includes:

- ceiling insulation
- wall insulation

1.1 RELATED WORK

Refer to 4161 UNDERLAYS, FOIL AND DPC for underlays, foil, DPC and for wire netting used to support insulation.

1.2 ABBREVIATIONS AND DEFINITIONS

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

Documents

1.3 DOCUMENTS

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

NZBC H1/AS1	Energy efficiency for all housing, and buildings up to 300m²
NZBC H1/AS2	Energy efficiency for buildings greater than 300m²
AS 1530.1	Methods for fire tests on building materials, components and structures - Combustibility test for materials
AS/NZS 3000	Electrical installations (Known as the Australian/New Zealand Wiring Rules)
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential buildings
AS/NZS 4859.1	Thermal insulation materials for buildings - General criteria and technical provisions
AS/NZS 60695.11.5	Fire hazard testing - Test flames - Needle-flame test method - Apparatus, conformity test arrangement and guidance
CodeMark™ CMNZ30095 verC	Knauf Insulation

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

ecoinsulation® glasswool Technical Data Sheets
ecoinsulation® glasswool Install Instructions
BRANZ Appraisal 1049 - ecoinsulation glasswool
Eurofins Gold Certificate: IACG-323-01-25-2002
Jensen Hughes FireMark AC100.3
ISO 9001 Certificate Registration No. 44 100 190742

Manufacturer/supplier contact details

Company:	Knauf Insulation Ltd
Web:	www.ecoinsulation.co.nz
Email:	info.nz@knaufinsulation.com
Telephone:	0800 562 834

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

~ years	For unfaced ecoinsulation® glasswool insulation materials (ceiling segments, ceiling rolls, wall segments)

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the

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standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

~ years For installation workmanship

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 NO SUBSTITUTIONS

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

Performance

1.9 FIRE PROPERTIES

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

Compliance

1.10 CODEMARK CERTIFICATE

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

2 PRODUCTS

Materials

2.1 CEILING & SKILLION ROOF INSULATION SEGMENTS

ecoinsulation® glasswool Thermal Ceiling segments, non-combustible and certified Red List Free glasswool insulation to AS/NZS 4859.1, manufactured using up to 80% recycled glass with DriTherm® silicone treatment and ECOSE® Technology plant-based binder. Available in Standard Ceiling, Ceiling High Performance and Skillion High Performance variations in a range of segment sizes, thicknesses and R-values. Refer to SELECTIONS.

2.2 WALL INSULATION SEGMENTS

ecoinsulation® glasswool Thermal and Acoustic Wall segments, non-combustible and certified Red List Free glasswool insulation to AS/NZS 4859.1, manufactured using up to 80% recycled glass with DriTherm® silicone treatment and ECOSE® Technology plant-based binder. Available in a range of segment sizes, thicknesses and R-values. 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.

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3.3 PRE-INSTALLATION REQUIREMENTS

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

Installation - generally

3.4 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALLATION GENERALLY

Lay, install, fit and fix insulation without gaps, tucks, folds and over compaction to NZBC H1/AS1 or AS2 and ecoinsulation® requirements and installation instructions. For all housing and buildings up to 300m², install in accordance to NZS 4246 sections 5 Walls, 6 Ceilings & Roofs, 7 Underfloor - Suspended Framed Floors and 10 Concrete Slab-on-Ground Insulation, for residential light timber or steel framed buildings. Allow insulation to re-loft/relax prior to installation. Do not cover vents. Lift up electrical wires, lighting transformers/controllers and lay the insulation underneath.

3.6 INSULATION CLEARANCES

Provide insulation clearances to NZS 4246 and for recessed luminaires AS/NZS 3000, 4.5.3.2. Where allowed by these standards provide insulation clearances to product manufacturer's stated clearances. Secure insulation in place so clearances are maintained and use guards/barriers , if required, where insulation is not secured.

3.7 CUTTING INSULATION

Cut insulation using a sharp craft knife.

Installation

3.8 FIT SINGLE LAYER INSULATION BETWEEN CEILING FRAMING

Friction fit ecoinsulation® glasswool Thermal Ceiling segments between ceiling framing members, leaving no gaps and maintaining full thickness of insulation over whole installation. R7.0 Ceiling batt is designed to expand over truss chords / ceiling joists without the need for notching of batts. Cut insulation pieces as required to fill small spaces, gaps around penetrations and other obstructions. Without compressing, tuck insulation behind wiring, plumbing or ductwork. Leave gap around metal flues to the manufacturer requirements.

3.9 FIT WALL INSULATION - TIMBER WALL FRAMING

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

Completion & Commissioning

3.10 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.
ecoinsulation® glasswool insulation packaging is recyclable.

4 SELECTIONS

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

Materials

4.1 ECOINSULATION® THERMAL CEILING INSULATION - SINGLE LAYER

Location:	Ceiling
Brand:	ecoinsulation® glasswool
Application:	Between ceiling framing
R-value:	R7.0
Thickness:	330mm
Size:	460mm x 1160mm
Density:	8kg/m³

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4.2 ECOINSULATION® THERMAL & ACOUSTIC WALL INSULATION

Location:	Exterior Walls
Brand:	ecoinsulation® glasswool
Product:	Thermal and Acoustic Wall segments | Thermal and Acoustic Wall 140mm High Performance segments
Application:	Exterior Walls
R-value:	R2.2 | R3.2
Thickness:	90 mm | 140 mm
Size:	580 mm | 570 mm
Density:	10.8 kg/m³ | 9.4 kg/m³

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4821 FLASHINGS

1 GENERAL

This section relates to the fabrication and installation of flashing systems not forming part of a proprietary system.

1.1 RELATED WORK

Refer to 4610AR APL Residential Aluminium Windows & Doors
Refer to 4311D Dimond Profiled Metal Roofing

Documents

1.2 DOCUMENTS

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

NZBC B2/AS1	Durability provisions for building elements
NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
AS/NZS 2728	Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements
AS 3566	Self-drilling screws for the building and construction industries - General requirements and mechanical properties
NZS 3604	Timber-framed buildings
NZMRM CoP	NZ Metal Roof and Wall Cladding Code of Practice

Requirements

1.3 QUALIFICATIONS

Work to be carried out by trades people experienced, competent and familiar with the materials and techniques specified.

1.4 VERIFY DIMENSIONS

Verify dimensions against site measurements prior to fabrication.

Standards of performance

1.5 DURABILITY REQUIREMENTS

Design and install the flashings appropriate for the durability applications in accordance with NZBC B2/AS1. The Building Code B2, 3.2 requires that all hidden elements have at least the same durability as that of the element that covers it. Refer to NZBC B2/AS1, Table C.1.1.1 and NZBC E2/AS1, Table C.1.1.1A: Material selection.

1.6 COMPATIBILITY REQUIREMENTS

Each flashing material shall be selected in accordance with NZBC E2/AS1, Table C.1.1.1A: Material selection, to minimise corrosion. Refer to either NZS 3604 Clause 4.2 or AS/NZS 2728 for the relevant exposure conditions. For compatibility of materials in contact and subject to run-off, refer to NZBC E2/AS1, Table C.1.1.1B: Compatibility of materials in contact, and Table C.1.1.1C: Compatibility of materials subject to run-off.

1.7 PROTOTYPES - REVIEW

Refer to the general section 1270 CONSTRUCTION for details of how prototypes will be reviewed and how instructions to proceed will be given. For flashings where there are no specific details or drawings, provide full size prototypes of the flashings to integrate components into the weathertight system. Co-ordinate with the trades affected by the installation. Provide the prototype flashings to the contract administrator for review.

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2 PRODUCTS

2.1 FLASHING MATERIALS

Acceptable materials for flashings are described in NZBC E2/AS1, 4.0 Flashings. Material, grade and colour as detailed and scheduled. Ensure that materials used for flashings are compatible with the building and cladding materials and their fixings.

2.2 FLASHING FABRICATION

Fabricate flashings generally to NZBC E2/AS1, 4.0 Flashings, from a ductile grade of metal designed for lateral strength by folding, stiffening or ribbing on external edges, having a maximum un-stiffened width of 300mm. Provide all hooks, hems, kick outs, bird's beaks, stop ends, soft edges and turn downs etc. to NZBC E2/AS1, 4.0 Flashings, or as shown on the drawings.

2.3 FIXINGS

Rivets, screws, nails and cleats to be compatible with the materials being fastened. Fasteners complying with the corrosion requirements of AS 3566 are suitable for use with ZINCALUME® steel products. Use only low carbon non-conductive sealing washers.

2.4 JOINTS - SEALANTS

Neutral Curing silicone or MS polymer sealant as required, with low resistance to compression and be-able to withstand large temperature variations. MS polymer sealant to be used where the sealant is exposed and the surrounding surfaces are to be subsequently painted or coated.

2.5 JOINTS - SOLDER

Eutectic solder of 60% tin/40% lead using a suitable proprietary flux.

3 EXECUTION

Conditions

3.1 DELIVERY

Keep flashings dry in transit. Take delivery of flashings in an undamaged condition. Reject all damaged materials.

3.2 STORAGE

Store materials and accessories on a level, firm base, in dry conditions, well ventilated, out of direct sunlight and completely protected from weather and damage. Ensure storage areas are away from current work areas. Cover to keep dry until fixed.

3.3 HANDLING

Avoid distortion and contact with potentially damaging surfaces/substances. Do not drag flashings across each other, or across other surfaces. Protect edges, corners and surfaces from damage.

3.4 SUBSTRATE

Do not commence work until the substrate is of the standard required by the installer for the specified flashings, level and in true alignment.

3.5 PROTECT

Protect surfaces, window and door joinery, and finishes already in place, from the possibility of damage during the installation process.

3.6 CONFIRM LAYOUT

Before commencing work confirm the proposed installation of the flashings and expansion joints and other visual considerations of the finished work.

3.7 CO-ORDINATE INSTALLATION

Co-ordinate installation of flashings with associated trades.

Application

3.8 INSTALLATION

Install flashings in accordance with NZMRM CoP and in compliance with NZBC E2/AS1, 4.0 Flashings. For very high wind zones and where the pitch of the roof is below 15° the flashing joint laps shall be sealed with sealant at each end of the lap to prevent the ingress of water.

Refer to NZBC E2/AS1, Table 4.5.1.1: General dimensions of metal flashings and other flashings as listed, for general dimensions of flashings.

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3.9 FIXINGS

Fix flashings with fasteners appropriate to the situation. For fixing flashings with proprietary brackets or clips ensure they are aligned to allow for movement and are compatible with the flashing material.

Fix screws with the shank perpendicular to the surface of the flashing with the washer fitted firmly against the flashing. Screws to be compatible with the flashing material.

Rivets 'blind' or 'pop' are to be sealed when used. Aluminium rivets are compatible with zinc or AZ coated steel. Monel and stainless steel rivets can be used to fix galvanized steel flashings. Minimum diameter of rivet to be used is 4.0mm. Drill hole 1mm larger than the rivet size. Seal head of rivet with neutral cured silicone.

3.10 JOINTING - SEALANTS

Clean surfaces to be lapped using a solvent ensuring all traces of the solvent are removed with a clean rag. Apply sealant by gun in a continuous bead of approximately 5mm diameter. Width of sealant when compressed should not exceed 25mm. Sealant joints shall be mechanically fixed for strength. Refer to NZMRM CoP for details.

3.11 JOINTING - SOLDER

Solder joints in galvanized steel and non-ferrous metals when specified with lead/tin solder. Clean joint ensuring it is dry and free of grease immediately prior to applying a proprietary flux. Lap the flashing 25mm in the direction of the water flow and fasten the lap with rivets or screws at 50mm centres. Completely sweat the joint to avoid leaving any flux residue. Wash down the joint to remove any trace of flux.

3.12 FINAL INSPECTION

A final inspection by the installer to take place after completion of the flashing work. Any defects or subsequent damage to be made good.

Completion

3.13 PROTECT

Protect new work from damage.

3.14 REPLACE

Replace all damaged or marked elements.

3.15 LEAVE

Leave work to the standard required for following procedures.

3.16 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

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4910 METALWORK

1 GENERAL

This section relates to the fabrication, delivery, specialist coating and installation of interior and exterior metal items:
It includes:

- Interior stair and stair frames, balustrades, handrails, ladders, screens, louvres, skirting, sheet metal decorative and specialist finishes, hoods, cowls, bench tops, sinks and tubs and similar items.
- exterior wall and door cladding systems, structural items, column and beam cladding, screens, grilles, louvres, fins and other external features, stairs, handrails, balustrades, ladders, canopies, signs and signage, street furniture, flues and cowlings, decorative and specialised sheet finishes, wire mesh and expanded metal sheet finishes and associated fasteners and hardware.

1.1 DOCUMENTS

Documents referred to in this section are:

NZS/BS 1387	Screwed and socketed steel tubes and tubulars and for plain end steel tubes suitable for welding or screwing to BS 21 pipe threads
AS/NZS 1554.1	Structural steel welding - Welding of steel structures
AS/NZS 1554.6	Structural steel welding: Welding stainless steel for structural purposes
AS 1566	Copper and copper alloys - Rolled flat products
AS/NZS 1567	Copper and copper alloys - Wrought rods, bars and sections
AS 1572	Copper and copper alloys - Seamless tubes for engineering purposes
AS/NZS 1594	Hot-rolled steel flat products
AS 1627.4	Metal finishing - Preparation and pretreatment of surfaces - Abrasive blast cleaning
AS/NZS 1665	Welding of aluminium structures
AS/NZS 1734	Aluminium and aluminium alloys - flat sheets, coiled sheet and plate
AS/NZS 1865	Aluminium and aluminium alloys - Drawn wire, rod, bar and strip
AS/NZS 1866	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
AS/NZS 1867	Aluminium and aluminium alloys - Drawn tubes
AS/NZS 2312.3	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings - Part 3: Thermal metal spray coatings
AS/NZS 3679.1	Structural steel - Hot rolled bars and sections
AS/NZS 3750.9	Paints for steel structures - Organic zinc-rich primer
AS/NZS 3750.15	Paints for steel structures - Inorganic zinc silicate paint
AS/NZS 4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS/NZS 4792	Hot-dip galvanized (zinc) coatings on ferrous hollow sections, applied by a continuous or a specialized process
BS 6497	Powder organic coatings for application and stoving to hot-dip galvanized hot-rolled steel sections and pre-formed steel sheet
BS EN 1011.3	Welding. Recommendations for welding of metallic materials. Arc welding of stainless steel
GANZ:	Galvanizing Association of New Zealand - After-Fabrication Hot Dip Galvanizing. A practical reference for designers, specifiers, engineers, consultants, manufacturers and users

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

Requirements

1.2 QUALIFICATIONS

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

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1.3 HOT WORK - FIRE SAFETY
Refer to section 1270 CONSTRUCTION

2 PRODUCTS

Fabricated items

2.1 ITEMS
Refer to SELECTIONS.

Materials

2.2 STEEL COIL, SHEET, PLATE, BARS, ANGLES CHANNELS AND TUBE
To comply with the following:

- Hot-rolled steel bars and sections to AS/NZS 3679.1.
- Hot -rolled sheet/coil to AS/NZS 1594.
- Medium gauge black steel pipe to NZS/BS 1387, with plain ends.
- Medium gauge galvanized steel pipe to NZS/BS 1387 with plain ends, complete with galvanized and bolted couplings.

2.3 ALUMINIUM COIL, SHEET, PLATE, BARS, ANGLES, CHANNELS, RODS AND TUBE
To comply with the following:

- Anodised/plain finish sheet/coil to AS/NZS 1734.
- Drawn wire, rod, bar and strip to AS/NZS 1865.
- Extruded rod, bar, solid and hollow products to AS/NZS 1866.
- Aluminium drawn tube to AS/NZS 1867.

Components

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

2.5 TUBULAR RIVETS
Domed/countersunk head with composition and mechanical properties to suit the parent metal.

2.6 THREADED STUDS
Select stud and nut threads to suit the base material and the nut being used.

2.7 SCREWS
Brass, bronze, steel or stainless steel self-tapping screws with type of head, length, gauge and thread to suit the work and its location.

2.8 CLIPS, FLASHINGS
Form clips to detail of the same metal as the metal sheet to be fixed/secured.

2.9 BOLTS
Brass, bronze, steel or stainless steel, selecting type and size to suit the work and its location.

Finishes

2.10 STEEL PRIMER
Inorganic zinc silicate primer to AS 3750.15. Zinc rich epoxy primer to AS 3750.9.

2.11 EXTERNAL ORGANIC COATING
Polyester exterior grade coating to BS 6497.

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE AND HANDLING
Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.
Take delivery of materials and goods and store on site and protect from damage.
Protect finished surfaces, edges and corners from damage.
Move/handle goods in accordance with manufacturer's requirements.

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Reject and replace goods that are damaged or will not provide the required finish.

3.2 PRE-INSTALLATION REQUIREMENTS

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

3.3 PRE-COATING/FINISHING REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for specified finish. Carry out such additional preparatory work as required to bring the substrate to suitable condition.

Fabrication - general

3.4 CORNERS

Unless specified or detailed otherwise, mitre junctions of identical sections.

3.5 HOLES

Form without distortion of surrounding metal.

3.6 CLEANING

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

3.7 BONDING

Prepare surfaces of metals to receive adhesives by degreasing and abrading mechanically or chemically. Use adhesives in accordance with the manufacturer's requirements. Form bond under pressure.

3.8 RIVETED JOINTS

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

3.9 MECHANICAL JOINTS

Ensure mechanical joints are tight with no visible gaps.

3.10 MECHANICAL JOINTS, ELEMENTS

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

3.11 MECHANICAL JOINTS, CLEATS

Unless specified otherwise connect cleats to frames with countersunk screws where they will be visible after the component has been fixed and where raised heads would interfere with any moving part.

Fabrication - welding

3.12 PREPARATION FOR WELDING

Remove grease, dirt, moisture and oxide from edges to be welded. Remove scale and residue from arc and power cutting by machining or hand grinding. Ensure accurate fit using clamps and jigs where practical. Use tack welds for temporary attachment where jigging is not practical.

3.13 WELD QUALITY

Make joints with parent and weld metal fully fused throughout with no inclusions, holes, porosity or cracks. Prevent weld spatter falling on surfaces of materials which will be self finished and visible in completed work. Ensure complete removal of flux residues and slag. Butt welds which will be visible in completed work to be ground smooth and flush with adjacent surfaces.

3.14 WELDING STEEL

By one of the following methods:

- gas welding
- metal-arc welding to AS/NZS 1554.1 for mild steel
- seam welding
- other methods subject to approval.

3.15 WELDING GALVANIZED STEEL

When welding already Galvanized steel either:

- remove coating locally and carry out a standard weld
- leave coating and adjust welding technique to those recommended in GANZ After-Fabrication Hot Dip Galvanizing document. (Among other things, this will generally mean a slower welding speed.)

Final weld shall meet all the standards and requirements of a standard weld.

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3.16 WELDING THERMAL METAL SPRAY COATED STEEL

Where possible, welding to be carried out prior to thermal metal spraying. Where welding to be carried out after thermal spraying, the weld zone to be masked and not coated with thermal metal spray for approximately 100mm from the weld zone to AS/NZS 2312.3. Carry out standard weld then subsequent thermal spraying and coating processes.

3.17 WELDING ALUMINIUM

Grind flush visible welds.

Fabrication - sheet products

3.18 FABRICATE SHEET PRODUCTS

Fabricate and assemble in a workshop wherever practicable.

3.19 MARK OUT

Mark out the work accurately, square and true to line allowing for correct radius folds and laps to give the dimensions required for neat, close fits when in place. Use marking methods that do not damage, deface or cause future corrosive attack to the sheet metal being worked.

3.20 CUT SHEETS

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

3.21 FORMING

Use mechanical methods wherever possible and form and fold sheets square and true to line and face free of all deformation and defects. Minimise cold-working and stress build-up and their effects by limiting the amount of working and avoiding sharp radius bends (minimum 1 x sheet thickness).

3.22 PRE-ASSEMBLE

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

3.23 JOINING STAINLESS STEEL SHEET

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

3.24 JOINING ALUMINIUM SHEET

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

3.25 JOINING COPPER SHEET

Use self-secured seams, copper rivets, bolts, self-tapping screws, silfosing and brazing as best suits the form and location of the work.

Separation

3.26 SEPARATION

Isolate copper, brass and bronze from all other metals. Isolate dissimilar materials (metal and non-metal) in close proximity as necessary by painting the surfaces or fitting separator strips. Place isolators between metals and treated timber and cement-based materials.

Polishing and coating

3.27 PREPARATION FOR COATINGS

Before applying coatings remove welding slag, weld spatter, anti-splatter compounds, paints, grease, flux, rust, burrs and sharp arrises. Make good defects which would show after application of coating. Remove burrs and sharp arrises which would be visible after fixing, or which could be a hazard to the user. Finish surfaces smooth.

3.28 GALVANIZING

After fabrication, completely remove surface contaminants and hot-dip galvanize to AS/NZS 4680 (fabricated articles) and AS/NZS 4792 (hollow sections).

3.29 THERMAL METAL SPRAY

To AS/NZS 2312.3.

- Mask areas not to be coated prior to blasting and spraying.
- Abrasive blast clean steel surfaces to be sprayed with zinc or zinc alloy thermal metal spray to

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AS 1627.4 class 2½, to produce a sharp angular profile 65-100µm.
- Abrasive blast clean steel surfaces to be sprayed with aluminium or aluminium alloy thermal metal spray to AS 1627.4 class 3, to produce a sharp angular profile 75-100µm.
- Apply spray coating to dry surfaces, before discoloration and within 8 hours of surface preparation.
- Brush or vacuum surface so completely free of loose particles and dust.
- For application, steel temperature to be 3°C minimum above dew point and when air temperature is below 5°C.
- Apply thermal spray coating uniformly over the entire surface. Apply coating in multiple overlapping layers.
- Where sealing is specified, sealer to be applied as soon as possible after metal spraying.
- Where sanding is required to denib or reduce surface roughness, this to be carried out after the application of a sealer coat.

Finished dry film thickness to AS/NZS 2312.3, Table 2 Recommended values for the nominal thickness of the metallic coatings in microns - Life to first maintenance >25 years, for the specified corrosivity category.

3.30 STEEL PRIMING

After fabrication prepare steel by blast cleaning to Class 2.5 of AS 1627.4. Apply inorganic zinc silicate primer to AS 3750.15. Apply high-build epoxy tie-coat immediately after primer.

Alternatively prime the prepared steel with zinc rich epoxy primer to AS 3750.9.

Repair damage

3.31 REPAIR WELD DAMAGED GALVANIZING

Remove welding slag, power tool clean, grind off all burrs and sharp arrises, all repairs to AS/NZS 4680, 8.4 **Site repair**:
- Small repairs:- Colour matched zinc rich paint.
- Large repairs:- With approval, colour matched zinc rich paint or other agreed option.

3.32 REPAIR DAMAGED THERMAL METAL SPRAY COATINGS

All repairs to AS/NZS 2312.3, section 9, Repair of thermal sprayed coatings.

For damage:
- Damage to zinc or zinc alloy thermal metal spray up to 10cm² but less than 10mm wide, repair by mechanical cleaning to equivalent of Sa 2½ to AS 1627.4 and apply zinc rich paint conforming to AS/NZS 3750.9
- Damage to zinc areas greater than 10cm² and any damage to aluminium thermal metal spray should be re-prepared forming a feathered edge onto sound metal by spot blasting to original cleanliness & blast profile, then finish with metal thermal spray to match original.

Handling

3.33 HANDLING

Avoid distortion of elements during transit, storage and handling. Prevent pre-finished surfaces rubbing together, and any contact with mud, plaster or cement. Keep protective coverings dry.

3.34 SUBSTRATE

Ensure location and substrate is ready to receive the fabricated metalwork elements.

Installation

3.35 INSTALL ITEMS

Locate fixings accurately and use in accordance with the metalwork manufacturer's requirements. Fix to comply with the specified standards and installation details, including bedding compounds and sealants, and with work plumb, level and true to line.

3.36 MOVING PARTS

When assembled, moving parts to move freely and without binding.

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Completion

3.37 ROUTINE CLEANING

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

3.38 DEFECTIVE OR DAMAGED WORK

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

4 SELECTIONS

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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
BRANZ Appraisal 394 (2025) GIB® Noise Control Systems
BRANZ Appraisal 427 (2021) GIB® Wet Area Systems
BRANZ Appraisal 928 (2021) GIB EzyBrace® Systems

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Manufacturer/supplier contact details
Company: Winstone Wallboards
Web: www.gib.co.nz
Telephone: 0800 100 442

Requirements

1.4 NO SUBSTITUTIONS

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

1.5 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 INSPECTIONS AND ACCEPTANCE

Allow for inspection of the finished plasterboard surface:

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

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

1.7 FIRE RATING REQUIREMENTS

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

1.8 SOUND INSULATION REQUIREMENTS

Provide the GIB® Noise Control Systems. Refer to SELECTIONS for system/STC. Include for forming and treating of perimeters of openings and penetrations in the elements to ensure the specified performance. Ensure absence of adjoining flanking paths.

Compliance

1.9 COMPLIANCE - BRANZ APPRAISAL 289

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

1.10 COMPLIANCE - BRANZ APPRAISAL 394

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

1.11 COMPLIANCE - BRANZ APPRAISAL 427

GIB® Wet Area Systems has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 427.

1.12 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

1.13 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.

1.14 SURFACE FIRE PROPERTIES - UNFINISHED BOARD

All GIB® unfinished plasterboard sheet materials achieve a Group Classification of, Group 1-S to NZBC C/AS2, Table 4.12.1.1: Maximum permitted Group Number for internal surface finishes, following testing in accordance with ISO 5660.1 and ISO 5660.2.

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2 PRODUCTS

Materials

2.1 GIB® PLASTERBOARD

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

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

2.2 GIB® COVING

GIB-Cove® plasterboard coving. Refer to SELECTIONS for profile and size.

Components

2.3 CEILING BATTENS

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

2.4 FLEXIBLE TRACK

Rondo® Flexible Track, comprising 0.50 BMT steel track with Z275 corrosion resistant coating. Available in 3m lengths and 64mm or 92mm widths.

2.5 GIBFIX® ANGLES

GIBFix® Angles, 45mm x 45mm angles, 2.4m or 2.7m long.

2.6 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.

2.7 TAPE ON TRIMS AND EDGES

GIB® Goldline™ tape-on trims

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

2.8 METAL ANGLE TRIMS

GIB® galvanized steel slim angle trims.

2.9 CONTROL JOINTS

GIB® Rondo® P35 control joints.

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

Accessories

2.10 ADHESIVE

Timber frame and/or steel frame:

GIBFix® One ultra low VOC water based wallboard adhesive

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GIBFix® All-Bond solvent based wallboard adhesive

2.11 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

2.12 JOINTING TAPE

GIB® jointing tape.

2.13 FIRE/ACOUSTIC SEALANT

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

2.14 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.

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

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

3.7 PROTECTION

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

Application

3.8 INSTALL CEILING BATTENS

Install to GIB® Rondo® Ceiling Batten Systems requirements.

3.9 INSTALL GIBFIX® ANGLES

Install GIBFix® Angles to the wall and ceiling junctions to the GIBFix® Framing System requirements. Install GIBFix® Angles before installation of GIB® plasterboard linings.

Run GIBFix® Angles as continuous lengths between framing members. If joints are necessary for the GIBFix® Angles, overlap the angles by a minimum of 300mm and fix as per manufacturers requirements. When jointing GIBFix® Angles, locate the shorter section at the top of the stud.

3.10 INSTALL RONDO FLEXIBLE TRACK

Run Rondo® Flexible Track along the top and bottom of the curved wall area. Cut studs 10mm shorter than the required stud height, to facilitate insertion and positioning of the studs into the Rondo® Flexible Track. Position and fix studs into the Rondo® Flexible Track through the pre-punched holes and fastened off using minimum 13mm x 7g pancake drill tip screws.

When fastening off plasterboard sheets, place fasteners into studs and where possible avoid fastener placement into the Rondo® Flexible Tracks.

3.11 LINING WALLS AND CEILINGS GENERALLY

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

3.12 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.

3.13 BOARD INSTALLATION FOR GIBFIX® SYSTEM

Fix the GIB® plasterboard to the GIBFix® Angle side over the stud first and then fix the GIB® plasterboard to the GIBFix® Angle only side (not over the stud). If the GIBFix® Angle only side must be fastened off first, provide additional fixings for the GIBFix® Angle to the stud, to the manufacturers requirements.

3.14 FORM FIRE RATED SYSTEMS

Form to GIB® Fire Rated Systems requirements.

3.15 FORM NOISE CONTROL SYSTEMS

Form to GIB® Noise Control Systems requirements.

3.16 FORM WET AREA SYSTEMS

Form to GIB Aqualine® Wet Area Systems requirements.

3.17 FORM BRACING SYSTEMS

Form bracing systems to:

- GIB Ezybrace® Systems.

3.18 FORM CURVELINE SYSTEMS

Form curved wall/ceiling systems to:

- GIB® Curveline Specification and Installation Manual for Curved Walls and Ceilings.

3.19 FORM CONTROL JOINTS

Form control joints to GIB® Site Guide requirements.

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3.20 INSTALL COVES
Install to GIB-Cove® literature using GIB-Cove® Bond.

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

Finishing

3.22 FINISHING GENERALLY
To GIB® Site Guide and AS/NZS 2589.

Completion & Commissioning

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

4 SELECTIONS

Plasterboard

4.1 GIB® STANDARD SYSTEMS WALLS

Location	Plasterboard type / Lining requirements	FRR / System Specification	Finish Level
GBTLAB 60b — Inter-tenancy	GIB Barrierline System: Two-way 0. 1 x 10mm GIB Braceline or GIB Noiseline each side	FRR 60/60/60	Level 4
Typical Walls (Non Fire Rated)	90x45 timber stud wall, GIB and other linings to suit environment, bracing requirements & client specification — refer Framing Plans.	FRR -/-/-	Level 4

4.2 GIB® BRACING SYSTEMS
Refer to:

- GIB Ezybrace® Systems

For bracing element location refer to drawn documentation.

Accessories

4.3 GIBFIX® FRAMING SYSTEM COMPONENTS

Brand/type: GIBFix® Angles
Fixings: GIB® Grabber® Dual Head Screws

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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® Intertenancy Barrier Systems for Terraced Homes Specification & Installation Manual (December 2022)
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:

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- 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.

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 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.

Performance - Fire

1.14 SURFACE FIRE PROPERTIES - UNFINISHED BOARD

All GIB® unfinished plasterboard sheet materials achieve a Group Classification of Group 1-S following testing in accordance with ISO 5660.1 and ISO 5660.2.

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

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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

2.2 GIB® COVING

Refer to 5113G GIB® PLASTERBOARD LININGS section for all finishing items.

Components: central barrier

2.3 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.

2.4 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.

2.5 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.

2.6 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.

2.7 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

2.8 METAL ANGLE TRIMS

GIB® galvanized steel slim angle trims.

2.9 CONTROL JOINTS

Refer to 5113G GIB® PLASTERBOARD LININGS section for detail and location of control joints in plasterboard linings.

2.10 TAPE ON TRIMS AND EDGES

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

2.11 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

2.12 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.

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2.13 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.

2.14 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:	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

2.15 JOINTING TAPE

GIB® jointing tape.

2.16 GENERAL GAP FILLER

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

Finishes: framed walls

2.17 SKIM COAT PLASTER

Refer to 5113G GIB® PLASTERBOARD LININGS section for proprietary spray-on surface finishes to plasterboard linings.

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

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

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

3.5 LEVELS OF PLASTERBOARD FINISH

Provide the selected plasterboard surfaces to the pre-decorative levels of finish specified in AS/NZS 2589. Refer to 5113G GIB® PLASTERBOARD LININGS section for levels of plasterboard linings required.

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

3.7 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.

3.8 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.

3.9 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.

3.10 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

3.11 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.12 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.

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Installation: central barrier - metal framing

3.13 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.

3.14 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

3.15 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

3.16 INSTALL FIRE RATED SYSTEMS

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

3.17 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.

3.18 INSTALL BRACING SYSTEMS

Refer to 5113G GIB® PLASTERBOARD LININGS section.

3.19 INSTALLATION IN WET AREAS

Refer to 5113G GIB® PLASTERBOARD LININGS section.

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

3.20 FINISHING GENERALLY

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

Finishing: framed walls - sections and trim

3.21 FIX FINISHING SECTIONS AND TRIM

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

3.22 FORM CONTROL JOINTS

For control joints to plasterboard linings refer to 5113G GIB® PLASTERBOARD LININGS section.

3.23 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

3.24 FINISHING AND STOPPING

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

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Completion

3.25 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.

3.26 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.

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:	Between Townhouse Units Generally
System:	GBT(L)AB 60b - load bearing
FRR:	60/60/60
Acoustics:	STC 64, Rw 63
Partition width:	~mm overall width
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:	Level 4

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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, TIMBER VENEER

Doors as scheduled complete with matching 6mm clashing strip to both sides and to the exposed edge of cavity slider doors.

2.4 DOORS, PAINTED

Doors as scheduled (without clashing strips).

2.5 CAVITY SLIDERS

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

2.6 FRAMED AND GLAZED DOORS

Solid timber framed doors, stop end jointed and bead glazed.

2.7 FRAMED AND PANELLED DOORS

Solid timber framed doors, stop end jointed and beaded as detailed.

2.8 FRAMED AND LOUVRED DOORS

Solid timber framed doors, stop end jointed and beaded as detailed.

2.9 DOOR HINGES

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

2.10 SLIDING DOOR GEAR

To suit door/sash size and glazed weight and as detailed.

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.

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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.

Internal doors

3.5 INTERNAL JOINERY FRAMES

Fabricate as detailed. Wedge and rigidly fix in place without distortion, plumb, and true to line and face. Pre drill for fixings through frame. Countersink and plug frames scheduled for clear finish.

3.6 DOOR FRAMES, SOLID REBATED

Fabricate as detailed. Hang doors to operate freely on hinges, sliding, or bi-fold gear and to the door manufacturer's requirements. Pre drill for fixings through frame. Countersink and plug frames scheduled for clear finish. Fit hardware.

3.7 DOOR LINERS

Heads and jambs finished minimum 18mm, with 10mm planted door stops. Width to match width of lined walls. Hang doors on hinges, sliding, or sliding-folding gear to the door manufacturer's requirements and to operate freely. Countersink and plug frames scheduled for clear finish. Fit hardware.

3.8 DOOR LINERS, EXTENDED

Heads and jambs finished 30mm, rebated for wall linings and extended a minimum of 10mm. 10mm planted door stops. Hang doors on hinges, sliding and bi-fold gear to the door manufacturer's requirements and to operate freely. Countersink and plug frames scheduled for clear finish. Fit hardware.

3.9 CAVITY SLIDERS

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

Completion

3.10 CHECK

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

3.11 TEMPORARY PROTECTION

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

4 SELECTIONS

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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

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

~ years	For materials

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

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

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 - CODEMARK CERTIFICATE

Ardex WPM 1000 meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CMNZ70189.

1.12 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.

1.13 COMPLIANCE - BRANZ APPRAISAL 473

ARDEX Undertile External Liquid Waterproofing Membranes has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 473.

1.14 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 BRANZ Appraisal 727.

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2 PRODUCTS

Materials - patching compound

2.1 ARDEX A 46
Rapid setting and drying, slump free cement-based mortar.

Materials - substrate preparation

2.2 ARDEX MULTIPRIME
One part, water-based primer for porous substrates.

2.3 ARDEX P 9
One part, water-based primer for non-porous substrates.

2.4 ARDEX P 51
One part water-based, primer, pre-coat, and bonding agent for porous substrates.

2.5 ARDEX WPM 300 MOISTURE BARRIER
Two-component, water-based, epoxy polyamide primer/barrier hydrostatic resistant coating.

Materials - waterproofing

2.6 ARDEX WPM 002
Two component, fibre reinforced, acrylic polymer, liquid waterproofing membrane.

2.7 ARDEX WPM 155 RAPID
One component, polyurethane-acrylic, fast drying, liquid waterproofing membrane.

2.8 ARDEX WPM 750
Fleece-lined, synthetic rubber sheet membrane, 0.75mm thick, 1.4m wide x 20m long rolls.

2.9 ARDEX WPM 1000
Fleece-lined, synthetic rubber sheet membrane, 1.0mm thick, 1.4m wide x 20m long rolls.

Materials - adhesives

2.10 ARDEX X 17
Flexible, polymer modified, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.11 ARDEX X 18
Flexible, polymer fortified, fibre reinforced, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1.

2.12 ARDEX X 32
Flexible, polymer fortified, cement-based adhesive, formulated with non-slumping mastic type properties. Suitable for moisture sensitive stone. Classified C2TES1 to ISO 13007.1.

2.13 ARDEX X 77
Fibre reinforced, polymer modified adhesive. Classified C2FTES1 to ISO 13007.1.

Materials - grout

2.14 ARDEX FG 8
Fine sanded, cement-based, standard grout for joints 1mm to 8mm wide. Classified CG2W to ISO 13007.3.

2.15 ARDEX FS-DD
Non-sanded, cement-based grout for joints 1mm to 4mm wide. Classified CG1 to ISO 13007.3.

2.16 ARDEX EG 15
Three part stain and chemical resistant epoxy grout for joints 1.5mm to 15mm wide. Classified RG to ISO 13007.3.

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Materials - additives

2.17 ARDEX E 90
Synthetic dispersion additive for use with ARDEX cement-based adhesives, to increase bond strength, elasticity and water resistance.

2.18 ARDEX ABALASTIC
Liquid polymer additive for use with cement-based adhesive to improve adhesion, water resistance and flexibility.

2.19 ARDEX GROUT BOOSTER
Water-based synthetic polymer grout additive for use with cement-based grouts to improve adhesion strength, flexibility and abrasion resistance.

Components

2.20 ARDEX ST TAPE
Uncured, self-adhesive butyl tape, fleece lined one side.

2.21 ARDEX CA 750 CONTACT ADHESIVE
Water-based contact adhesive.

2.22 ARDEX WA 98 CONTACT ADHESIVE
Solvent-based contact adhesive.

2.23 ARDEX CA 20 P PLUS CONSTRUCTION ADHESIVE
One part, flexible, silane modified polymer adhesive.

2.24 TRIMS
Tile trims and edge strips. Available in aluminium, brass and stainless steel. Refer to SELECTIONS.

2.25 MOVEMENT JOINT - ANGLE
Metal or PVC angle. Refer to SELECTIONS.

2.26 MOVEMENT JOINT - INSERT
Polyurethane or neoprene insert. Refer to SELECTIONS.

2.27 MOVEMENT JOINT - SEALANT
One part, flexible acetic or neutral cure silicone sealant for joints 1mm to 30mm. Refer to SELECTIONS.

2.28 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

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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.

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.

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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.

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

Location:	Bathrooms Generally
Supplier:	Reptiles
Type:	Porcelain | Brighton Sand, Mosaic Sand Kit Kat, Cabana Bone Matt
Bond pattern:	Stacked

ARDEX Tiled Internal Walls

4.2 ARDEX INTERNAL WET AREA WALL TILING SYSTEM OVER PLASTERBOARD

Location:	Bathrooms Generally
Substrate:	Concrete
Primer:	ARDEX Multiprime
Adhesive:	ARDEX X 18 (suitable for large format tiles)
Grout:	ARDEX FS-DD with ARDEX Grout Booster (for tile joints 1mm to 4mm wide)
Grout colour:	Refer to ARDEX for colour range

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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)
BRANZ Appraisal 925 (2024) - ARDEX WPM 1000 External Deck Membrane

Manufacturer/supplier contact details

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Company:	ARDEX New Zealand Ltd
Web:	www.ardex.co.nz
Email:	info@ardexnz.com
Telephone:	0800 227339

Warranties

1.4 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

2 years	For installation

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS WORKERS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 QUALIFICATIONS WORKERS – MANUFACTURER / SUPPLIER REQUIREMENTS

Waterproofing applicators to be trained by ARDEX New Zealand. Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.7 NO SUBSTITUTIONS

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

1.8 INFORMATION FOR OPERATION AND MAINTENANCE

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

- ARDEX Tiling General Care

Provide this information prior to practical completion.

Compliance information

1.9 COMPLIANCE - CODEMARK CERTIFICATE

ARDEX WPM 1000 meets the requirements of the NZBC when used within the conditions and limitations of its CodeMark Certificate of Conformity CMNZ70189.

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 473

ARDEX Undertile External Liquid Waterproofing Membranes has been appraised as meeting provisions of the NZBC when used within the Conditions and Limitations of its BRANZ Appraisal 473.

Performance - Slip resistance

1.12 TEST - SLIP RESISTANCE

Test walking surfaces for slip resistance, refer to SELECTIONS for test condition.

2 PRODUCTS

Materials - underlay

2.1 FLOORING UNDERLAY

Fibre cement board to AS/NZS 2908.2 manufactured from cellulose fibre, Portland cement, sand and water, or glass-mat gypsum board manufactured from gypsum core with coated fiberglass mat facing.

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2.2 ARDEX DS 70 ACOUSTIC UNDERLAY
Recycled rubber drainage mat, 5mm thick, 1.2m wide x 9.1m long roll.

2.3 ARDEX UD 150 DRAINAGE MAT
Mesh reinforced, 1.02m x 1.96m polypropylene drainage mat, with 6mm deep drainage channel.

Materials - levelling screeds

2.4 ARDEX LQ 92
Cement-based, polymer modified, self-smoothing levelling compound.

Materials - substrate preparation

2.5 ARDEX MULTIPRIME
One part, water-based primer for porous substrates.

Materials - waterproofing

2.6 ARDEX WPM 155 RAPID
One component, polyurethane-acrylic, fast drying, liquid waterproofing membrane.

Materials - adhesives

2.7 ARDEX X 18
Flexible, polymer fortified, fibre reinforced, cement-based adhesive, formulated with non-slumping mastic type properties. Classified C2TES1 to ISO 13007.1

Materials - grouts

2.8 ARDEX FS-DD
Non-sanded, cement-based grout for joints 1mm to 4mm wide. Classified CG1 to ISO 13007.3.

Materials - additives

2.9 ARDEX E 90
Synthetic dispersion additive for use with ARDEX cement-based adhesives, to increase bond strength, elasticity and water resistance.

2.10 ARDEX ABALASTIC
Liquid polymer additive for use with cement-based adhesive to improve adhesion, water resistance and flexibility.

2.11 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

2.12 UNDERTILE HEATING
Refer to appropriate underfloor heating section for electric heating systems under tiles.

Components

2.13 ARDEX ST TAPE
Uncured, self-adhesive butyl tape, fleece lined one side.

2.14 ARDEX PERIMETER ISOLATION STRIP
6mm thick x 64mm high foam strip roll.

2.15 ARDEX AF 180 MS FLOORING ADHESIVE
One part, modified polymer adhesive.

2.16 ARDEX UD 158 MESH TAPE
Fibre reinforced mesh seam tape.

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2.17 ARDEX CA 750 CONTACT ADHESIVE
Water-based contact adhesive.

2.18 ARDEX WA 98 CONTACT ADHESIVE
Solvent-based contact adhesive.

2.19 TRIMS
Tile trim, edge strips, floor finish divider strips and weather bars. 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. 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
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 FLOORING UNDERLAY
Lay and fix flooring underlay to the manufacturer's instructions. Fill gaps between sheets and corners with a neutral cure silicone sealant.

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3.8 ARDEX DS 70 ACOUSTIC UNDERLAY

Temporarily fasten ARDEX PERIMETER ISOLATION STRIP along base of wall to entire perimeter of floor with masking tape. Lay ARDEX DS 70 over primed substrate, perpendicular to the subsequent installation of finished floor covering. Butted edges of adjacent underlay. Working in rows lengthwise, fold back half of the underlay width and trowel on ARDEX AF 180 MS flooring adhesive. Unfold the underlay and press into adhesive. Fill gaps between underlay and between wall and underlay with ARDEX ST.

Trim ARDEX PERIMETER ISOLATION STRIP flush with the finished floor covering when installed.

3.9 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.

3.10 APPLY PRIMER

Sponge, brush or roll primer liberally over entire substrate.

3.11 ARDEX UD 150 DRAINAGE MAT

Lay drainage mat over external waterproofing membrane with drainage channels parallel to drainage falls. Butt seams and tape with ARDEX UD 158 MESH TAPE.

3.12 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.

3.13 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.

3.14 INSTALL UNDERTILE HEATING

Refer to appropriate underfloor heating section for electric heating system under tiles.

3.15 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.

3.16 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.

3.17 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.

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3.18 APPLY ADHESIVE

Mix adhesive to ARDEX instructions. Spread adhesive over prepared surface with a notched trowel to ARDEX recommended bed thickness.

3.19 INSTALL TRIM

Press trim into wet adhesive.

3.20 INSTALL MOVEMENT JOINT ANGLE

Press angle into wet adhesive.

3.21 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.

3.22 APPLY GROUT

Mix grout to ARDEX instructions. Work grout into joints with a rubber trowel. Allow the grout to firm up in the joint before wiping tile surface with a damp, dense sponge.

3.23 INSTALL MOVEMENT JOINT INSERT

Place insert between movement joint angles.

3.24 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

3.25 COMPLETION MATTERS

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

4 SELECTIONS

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

4.1 TILES

Location:	Bathroom and Wet Areas Generally
Supplier:	Reptiles
Type:	Porcelain
Class:	Class 2

ARDEX Tiled Internal Floors

4.2 ARDEX INTERNAL TILING SYSTEM OVER CONCRETE FLOOR - HEATED WET AREA

Location:	Bathrooms Generally
Substrate:	Concrete
Heating system:	Refer Undertile Heating section
Levelling:	ARDEX LQ 92
Primer:	ARDEX Multiprime
WPM:	ARDEX WPM 155 Rapid
Adhesive:	ARDEX X 18 (suitable for large format tiles)
Grout:	ARDEX FS-DD with ARDEX Grout Booster (for tile joints 1mm to 4mm wide)
Grout colour:	Refer to ARDEX for colour range

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4.3 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:	ARDEX WPM 155 RAPID
Adhesive:	ARDEX X56
Grout:	ARDEX FS-DD with ARDEX Grout Booster (for tile joints 1mm to 4mm wide)
Grout colour:	Refer to ARDEX for colour range

4.4 ARDEX INTERNAL TILING SYSTEM OVER CFC FLOORING OVERLAY - HEATED WET AREA

Location:	Bathrooms Generally
Substrate:	Compressed fibre cement sheet overlay
Heating system:	Refer Undertile Heating section
Levelling:	ARDEX K 65
Primer:	ARDEX Multiprime
WPM:	ARDEX WPM 155 RAPID
Adhesive:	ARDEX X 18 (suitable for large format tiles)
Grout:	ARDEX FS-DD with ARDEX Grout Booster (for tile joints 1mm to 4mm wide)
Grout colour:	Refer to ARDEX for colour range

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6311FF FORTE TIMBER OVERLAY SYSTEM

1 GENERAL

This section relates to the supply, laying and finishing of **Forté** range of timber overlay flooring. It includes:

- Prefinished Engineered Wood Flooring
- Acoustic underlay
- All associated accessories to complete the installation.

1.1 RELATED WORK

Refer to 6192 FLOORING SUBSTRATE PREPARATION for preparation of flooring substrate and hard underlays.

Refer to 7545 UNDERFLOOR HEATING for integration with hydronic (water based) underfloor heating systems.
Refer to 7553 UNDERFLOOR HEATING MAT SYSTEM for integration with electric underfloor heating mat systems.

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

FSC®	Forest Stewardship Council®
PEFC	Program for the Endorsement of Forest Certification

Documents

1.3 DOCUMENTS

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

NZBC C/AS2	Protection from fire
NZBC C/VM2	Protection from fire
NZBC D1/AS1	Access routes
NZBC E3/AS1	Internal moisture
NZBC E3/AS2	Internal moisture
AS/NZS 1859.4	Reconstituted wood-based panels - Specifications - Wet-processed fibreboard
AS/NZS 2269.0	Plywood - Structural - Specifications
AS/NZS 4586	Slip resistance classification of new pedestrian surface materials
ISO 4760	Laminate flooring — topical moisture resistance — assembled joint
ISO 9705.1	Reaction to fire tests - Room corner test for wall and ceiling lining products -- Part 1: Test method for a small room configuration

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Forté Timber Overlay Flooring System Design Guide 4.0
Forté Product Specification Sheets
Forté Timber Overlay Flooring System Installation Guide 3.0
Forté Acoustick-Mat Acoustic Underlay Installation Guidelines
E3 Alternative Solution Document 3.0
Forté Care & Maintenance Guide for Commercial Spaces
Forte Timber Flooring Care and Maintenance Guide Residential 3.0
TAMSA International Consult 733 Critical Radiant Flux reports
ISTS Test Reports: Slip Resistance Classification of New Pedestrian Surface Materials
CodeMark™ Certificate CMNZ70143-1 – Forté Timber Overlay Flooring System

Manufacturer/supplier contact details:

Company:	Innovate Group Limited T/A Forté
Web:	https://forte.co.nz/
Email:	info@forte.co.nz

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Telephone: 0508 356 677

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

25 years	Residential Structural Warranty on all Engineered Flooring Ranges
10 years	Commercial Structural Warranty on all Engineered Flooring

- Provide this warranty on the Forté standard form. Refer to https://forte.co.nz/ for warranty details and conditions.
- 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 (by Forté approved installer)

- 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

1.7 QUALIFICATIONS – MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be approved by Innovate Group Limited. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications. Refer to https://forte.co.nz/ for details of Approved Installers.

1.8 NO SUBSTITUTIONS

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

1.9 INFORMATION FOR OPERATION AND MAINTENANCE

Provide maintenance documentation in accordance with Forté Timber Flooring Care and Maintenance Guide Residential 3.0 as necessary for the Principal to maintain the works. Provide documentation no later than the date of practical completion or the date on which the Principal takes occupation of the works. Refer to https://forte.co.nz/ for care & maintenance.

1.10 HEALTH AND SAFETY

Refer to relevant Technical Data Sheets and Material Safety Data Sheets of moisture barrier & adhesives.

1.11 MAINTENANCE SCHEDULE

Ensure a maintenance cleaning schedule is put in place for commercial applications. For residential and commercial care and maintenance recommendations refer to https://forte.co.nz/.

Performance - wet areas

1.12 PROPOSED ALTERNATIVE SOLUTION - FLOOR SURFACE IMPERVIOUS / EASILY CLEANED

Refer to the Forté Alternative Solution Guidance for Timber Flooring (E3 Installations) within the specification Contract Appendix. This proposed Alternative Solution supports the use of Forté Timber Overlay Flooring Systems in limited wet area applications, through in-service history, testing, specific installation methods and design.

The proposed Alternative Solution requires flooring system installation in wet areas to be in accordance with both ATFA (Australian Timber Flooring Association) recommendations and the Forté Timber Overlay Flooring System Installation Guide 3.0, including PVA adhesive to plank joints and caulking silicone gap filler to seal the perimeter and any fixed items within the area.

1.13 TESTING MOISTURE CONTENT

Sample and test the substrate to ensure that moisture content is within the limits specified. Provide a written record.

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Performance - generally

1.14 SURFACE FIRE PERFORMANCE

Forté Timber Overlay products meet the fire performance requirements of NZBC C/AS2 4.17.3, by either:

All Forté Collections onform to NZBC C/VM2, App B, Table B1, and have a deemed maximum Critical Radiant Flux of 2.2kW/m².

or

Critical Radiant Flux not required if area of non-conforming products have an aggregate surface area of not greater than 5m² within a fire cell, to NZBC C/AS2, 4.17.6.a.

2 PRODUCTS

2.1 FORTÉ ENGINEERED TIMBER COLLECTIONS

Forté Engineered Timber Collections: Artefact, Artiste Grande, Atelier, Custom, Indus, Loft, Moda, Smartfloor, Ultra, Urban and Villa are engineered flooring (real wood) composed of a hardwood veneer wear layer and a cross directional timber backing. Various widths, lengths and thicknesses depending on collection type.
Supplied in planks. Installation by direct stick. Matching stair nosings are available. Refer to SELECTIONS.

Components

2.2 FORTÉ ACOUSTIC UNDERLAY - DIRECT STICK

Acoustick-Mat, a high density 5 mm recycled rubber and cork underlay, rated to ISO 717-2, providing up to 18dB sound transfer reduction.

Accessories

2.3 ADHESIVES

Apply one of the following where a moisture barrier, sound reduction and bonding system are required:

- Selleys Liquid Nails Timberflex
- Mapei Ultrabond Eco S955 1K
- Ardex 480 MS.

2.4 ADHESIVES - JOINT SEALER FOR WET AREA APPLICATIONS

PVA D3 Adhesive used as a waterproof joint sealer to wet area applications.

2.5 SEALANT - FOR WET AREA APPLICATIONS

Timber floor silicone-free, paintable sealant / caulking suitable for wet area applications.

2.6 MOISTURE BARRIERS / WET AREA MEMBRANES

Apply on of the following vapour barrier systems to concrete substrates:

- Selleys Liquid Nails VBS
- Mapei Planiseal MR
- Ardex WPM 300.

2.7 LEVELLING COMPOUNDS - CONCRETE SUBSTRATE

Mapei Ultraplan Eco, low VOC, fast hardening self levelling smoothing compound with appropriate Mapei Primer to suit substrate.

2.8 LEVELLING COMPOUNDS - TIMBER SUBSTRATE

Mapei Fiberplan - Ultra fast hardening self levelling smoothing compound with appropriate Mapei Primer to suit substrate.

2.9 FINISHING TRIM AND TRANSITION BARS

Brass or aluminium finishing trims and transition bars of varying profiles and finishes. Refer to Section 7 of the Forté Timber Overlay Flooring System Design Guide 4.0.

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3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

Store the timber flooring flat, in the original unopened packaging, in the areas it is to be installed in for at least 48 hours prior to installation, to allow the product to acclimatise to the room temperature and minimise the likelihood of any shrinkage or swelling.
Store timber out of direct sunlight, in a shaded and protected dry place (18°C to 25°C), away from walls and radiators.

Place stored packs on battens/ dunnage to minimise moisture absorption from the ground. Do not store the timber flooring outside.

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 substrate to ensure it provides a suitable finish in accordance with the requirements of the Forté Timber Overlay Flooring System Installation Guide 3.0. Do not start laying if the substrate will not allow work of the required standard. Carry out such additional preparatory work as required in bringing the substrate to suitable condition.

Check the sub-floor for evenness, not to exceed 3mm variation over a 3m length. If substrate unevenness still exceeds 3mm variation over a 3m length after surface preparation apply levelling compound.

Check for moisture content by hygrometer. Do not commence laying flooring until readings for the whole area are within acceptable levels as follows:

Timber substrate	8 -12% for air conditioned buildings
	10 -14% for intermittently heated buildings
	2 -16% for unheated buildings
Concrete substrate	70% relative humidity

If concrete substrate is above 70% Relative Humidity, apply selected moisture barrier. If timber substrate is above allowable moisture content, then wait to allow to dry out and re-test.

3.4 CHECK TIMBER

Check that the timber supplied is as specified. Check the moisture content of the timber flooring and subfloor to ensure it is at the required level for the installation environment.

3.5 DO NOT START

Do not start laying before the building is enclosed, doors are hung and lockable, wet work complete, full lighting available and in the case of air-conditioned buildings the air-conditioning operating for 6 weeks.

3.6 STARTING WORK

Starting work means the floor layer accepts the substrate as allowing work of the required standard.

3.7 TECHNIQUE DISCUSSION

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.

Conditions - underfloor heating

3.8 UNDERFLOOR HEATING CONDITIONS

Conditions and installation must comply with the Forté Timber Overlay Flooring System Installation Guide 3.0. Refer https://forte.co.nz/.

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3.9 HYDRONIC UNDERFLOOR HEATING - DIRECT STICK

The surface of the slab from the heating tubes may not be less than 30mm and the recommended thickness is 60mm.

If a moisture test has not been carried out, turn off the underfloor heating 1 week prior to the test. Check for moisture content by hygrometer and do not commence installation until hygrometer readings show below 70%.

Commission the underfloor heating system, refer to Forté Timber Overlay Flooring System Installation Guide 3.0 for requirements. The underfloor heating system should be working for at least 3 weeks prior to the flooring installation. Ensure the thermostat is fitted with a maximum temperature of 27°C and adjust the temperature a maximum +/-2°C per day.

Installation surface temperature to be maintained at 15°C during installation and kept at this temperature for a minimum 48 hours after completion.

Refer to https://forte.co.nz/, Forté Timber Overlay Flooring System Installation Guide 3.0 for details.

3.10 ELECTRIC UNDERFLOOR HEATING SET INTO SCREED - DIRECT STICK

Ensure the surface of the screed is at least 8mm above the heating cable location. Screed must be suitable for use with glued-down engineered timber flooring, structurally sound and free from laitance.

If a moisture test has not been carried out, turn off the underfloor heating 1 week prior to the test. Check for moisture content by hygrometer and do not commence installation until hygrometer readings show below 70%.

Commission the underfloor heating system, refer to Forté Timber Overlay Flooring System Installation Guide 3.0 for requirements. The underfloor heating system should be working for at least 3 weeks prior to the flooring installation. Ensure the thermostat is fitted with a maximum temperature of 27°C and adjust the temperature a maximum +/-2°C per day.

Installation surface temperature to be maintained at 15°C during installation and kept at this temperature for a minimum 48 hours after completion.

Refer to https://forte.co.nz/, Forté Timber Overlay Flooring System Installation Guide 3.0 for details.

Installation - generally

3.11 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.12 INSTALLATION GENERALLY

Execution and installation must comply with the requirements of the Forté Timber Overlay Flooring System Installation Guide 3.0. Refer to https://forte.co.nz/.

Installation - substrate preparation

3.13 CONCRETE SUBSTRATE

Clear substrate of debris, clean off surface contamination and carry out surface repairs using a proprietary levelling compound. Carefully feather out at perimeters of repaired areas. Grind level, then vacuum to remove dust.

Check the sub-floor for evenness, not to exceed 3mm variation over a 3m length. If substrate unevenness still exceeds 3mm variation over a 3m length after surface preparation apply levelling compound.

3.14 PLYWOOD OR PARTICLEBOARD SUBSTRATE

Ensure substrate is minimum 18mm thick when over joists or minimum 15mm when over concrete. Clear substrate of debris, machine sand to remove surface contamination, then vacuum to remove dust.

Check the sub-floor for evenness, not to exceed 3mm variation over a 3m length. If substrate unevenness still exceeds 3mm variation over a 3m length after surface preparation apply levelling compound.

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The moisture content difference between the timber substrate and the Engineered Timber Flooring should be no more than 4% . Do not install if the moisture content difference is greater than this. Carry out moisture test in accordance with the method described in the Forté Timber Overlay Flooring System - Installation Guide 3.0, section 3.3.

3.15 EXISTING TONGUE AND GROOVE SUBSTRATE - DIRECT STICK

Ensure substrate is minimum 18mm thick when over joists or minimum 15mm when over concrete. Clear substrate of debris, re-nail or replace any loose or missing boards, then machine sand to make level.

When installing over solid native timber subfloors in wet areas, a two component epoxy moisture barrier must be applied.

Check the sub-floor for evenness, not to exceed 3mm variation over a 3m length. If substrate unevenness still exceeds 3mm variation over a 3m length after surface preparation apply levelling compound.

3.16 WET AREA MEMBRANE SYSTEM

Ensure that the selected wet area membrane system is compatible with glue down timber floor installations and has been installed in accordance with NZBC E3/AS2 requirements.

Ensure all timber flooring installation components such as adhesives are compatible with the selected wet area membrane. Refer to https://forte.co.nz/, Forté Timber Overlay Flooring System Installation Guide 3.0 for requirements.

3.17 APPLY MOISTURE BARRIER - CONCRETE SUBSTRATE

If concrete substate is above 70% Relative Humidity, apply selected Mapei Mapeproof one component or Selleys Liquid Nails VBS two component moisture barrier with roller to substrate in accordance with manufacturer's requirements.

The relative humidity to be re-checked once the moisture barrier is dry.

3.18 APPLY LEVELLING COMPOUND - CONCRETE SUBSTRATE

If substrate unevenness still exceeds 3mm variation over a 3m length after grinding apply levelling compound.

Apply appropriate Mapei primer to suit substrate. Mix and apply by large metal trowel or rake Mapei Ultraplan Eco self-levelling compound in accordance with manufacturer's requirements for smoothing and removing differences in level between 1 to 10mm to concrete substrates. For large installations Mapei Ultraplan Eco can be applied with an automatic pressure pump.

3.19 APPLY LEVELLING COMPOUNDS - TIMBER SUBSTRATE

If substrate unevenness exceeds 3mm variation over a 3m length after sanding apply levelling compound.

Apply appropriate Mapei primer to suit substrate. Mix and apply by large metal trowel or rubber spreader Mapei Fiberplan self-levelling compound in accordance with manufacturer's requirements for smoothing and removing differences in level between 3 to 10mm to timber substrates.

Installation - acoustic underlays

3.20 INSTALL ACOUSTIC UNDERLAY

Install Forté Acoustick-Mat underlay in accordance Forté Acoustick Mat Acoustic Underlay Installation Guidelines and the following requirements:

- Unroll Acoustick-Mat and allow to condition in space it is to be installed for a minimum of 2 hours. Cut rolls to size, allowing all cuts to condition for a further 2 hours.
- Underlay must be laid at a 90° angle to the overlay flooring direction
- Adhere to substrate using either Mapei Mapei Ultrabond Eco S955 or Ultrabond ECO® 995 or Selley Timberflex adhesive in accordance with manufacturer's requirements and immediately roll with medium weight roller
- Allow 12-24 hours prior to installation of timber overlay floor over.

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Installation - timber overlay flooring

3.21 INSTALL FORTÉ ENGINEERED WOOD PLANKS - DIRECT STICK

Install Forté prefinished engineered wood flooring in accordance with Forté Timber Overlay Flooring System Installation Guide 3.0, using the direct stick (glue down) method. Refer https://forte.co.nz/

Apply Mapei Ultrabond ECO® S955 1K, Ultrabond ECO® 995 or Selleys Timberflex with a notched trowel following manufacturer's instructions. Follow requirements for open time, taking note of substrate porosity, ambient temperature and relative humidity. Remove excess adhesive as the work proceeds using approved techniques. Install the flooring strictly in accordance with Forté stated requirements. Ensure the required expansion gap is left at perimeters and around fixed obstacles.
When underfloor heating is specified install pre-finished engineered wood flooring in accordance with the particular requirements of the Forté Timber Overlay Flooring System Installation Guide 3.0.

3.22 SEALING JOINTS - TO WET AREAS

Apply D3 PVA adhesive during installation to all joints between timber overlay planks, both along the length of plank and between the ends of planks to all wet area applications. For open plan spaces, this should extend 1.5m from each sanitary fixture and sanitary appliance. Refer to Forté Timber Overlay Flooring System Installation Guide 3.0 for details.

Installation - miscellaneous

3.23 LAYING - STAIRCASES AND LANDINGS

Check for moisture content and suitability of substrate prior to installation. Adhesive fix flooring and nosings to stair treads, risers and landings.

3.24 EXPANSION GAPS, PERIMETERS

Calculate expansion gaps strictly in accordance with Forte Flooring's requirements, to suit the environment, size of the installation and product type.

3.25 EXPANSION JOINTS

Cover by timber or aluminium trim to allow unrestricted movement of the flooring.

3.26 SEALANT TO PERIMETER - TO WET AREAS

After installation of timber overlay is complete apply water-resistant caulking silicone gap filler in accordance with the manufacturer's requirements and in accordance with Forté Timber Overlay Flooring System Installation Guide 3.0, to seal around the expansion gaps to perimeter and around any fixed items in the floor area. For open plan spaces, this should extend 1.5m from each sanitary fixture and sanitary appliance.

3.27 EDGES

Install skirting after installation of the timber floor covering to cover the required expansion gap.

Completion

3.28 FLOORING SURFACES

Leave flooring surfaces free of adhesive, dirt and debris. Vacuum off, damp mop with a low-foam neutral detergent and allow to dry.

3.29 PROTECT FINISHED SURFACE

Protect the surface using Protectaboard or similar approved until completion of the contract works, or until acceptance/sign-off by Contract Administrator. Refer to Forté Flooring for details.

3.30 COMPLETION MATTERS

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

4 SELECTIONS

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

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Forté Prefinished Engineered Flooring Plank

4.1 FORTE MODA 15mm COLLECTION - PREFINISHED ENGINEERED FLOORING PLANK

Location:	Kitchen / Dining / Living Spaces
Application:	Direct stick
Product/code no:	Feature Plank
Colour:	Isola
Plank size:	220mm wide x 2200mm long
Plank thickness:	15mm with 4mm European Oak Veneer
Surface texture:	Brushed
Finish:	NatureMatte Lacquer
Surface fire:	Critical Radiant Flux 2.2kW/m²
Slip resistance:	49 SRV / 0.70 COF

Components

4.2 MOISTURE BARRIER

Location:	For sealing concrete slabs - where RH exceeds 70%
Product:	Mapei Mapeproof 1K Turbo or Selley Liquid Nails VBS
Note:	Use timber floor adhesive over from same manufacturer

4.3 LEVELLING COMPOUND - CONCRETE SUBSTRATE

Location:	For levelling concrete slabs - where unevenness still exceeds 3mm variation over a 3m length after grinding
Primer:	Appropriate Mapei primer to suit substrate
Levelling:	Mapei Ultraplan Eco self-levelling compound

4.4 LEVELLING COMPOUNDS - TIMBER SUBSTRATE

Location:	For levelling timber substrates - where unevenness still exceeds 3mm variation over a 3m length after sanding
Primer:	Appropriate Mapei primer to suit substrate
Levelling:	Mapei Fiberplan self-levelling compound

4.5 ADHESIVES

Location:	For application of direct stick timber overlay flooring and if required for acoustic underlay
Product:	Mapei Ultrabond Eco S955 or Ultrabond Eco 995 or Selley Timberflex

4.6 JOINT ADHESIVES - FOR WET AREA APPLICATIONS

Location:	To all joints in timber overlay flooring in wet area applications
Product:	PVA D3 Adhesive

4.7 SEALANT - FOR WET AREA APPLICATIONS

Location:	To expansion gaps to perimeter and around any fixed items in the floor area to wet area applications
Product:	Aquaseal Flex
Colour:	Colour closest to floor colour. Contact Forte for options

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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 6192 FLOORING SUBSTRATE PREPARATION for preparation of flooring substrate.

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

Warranties

1.3 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.

1.4 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

1.5 QUALIFICATIONS

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

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

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.

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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.

2.6 STAIR NOSING
Refer to SELECTIONS for type.

Accessories

2.7 ADHESIVE, UNDERLAY
To AS/NZS 2455.1, clause 1.5.3. and underlay manufacturer's requirements.

2.8 ADHESIVE, CARPET
To AS/NZS 2455.1, clause 1.5.3. and carpet manufacturer's requirements.

2.9 TAPE
To carpet manufacturer's requirements.

2.10 FLOOR LEVELLING COMPOUND
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.

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.

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.

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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 CONCRETE FLOOR

To be level, smooth, clean, cured and dry. Remove loose material and dust.

3.12 PREPARING NEW WOOD PRODUCT FLOOR

To be level, sanded smooth and dry with loose material and dust removed.

3.13 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.

3.14 PREPARING EXISTING TIMBER OR WOOD PRODUCT FLOOR

Remove existing coverings completely including tacks, adhesives, bituminous materials, waxes and paints. Check for soundness, replace any substandard boards or panels and nail down loose boards. Sand smooth and remove loose material and dust.

3.15 SHEET UNDERLAYS FOR EXISTING TIMBER OR WOOD PRODUCT FLOORS

Refer to 6192 FLOORING SUBSTRATE PREPARATION for hard sheet underlays on existing floors.

Application - carpet laying

3.16 INSTALLATION, UNDERLAY

Installation to underlay manufacturer's requirements. Lay at right angles to the carpet direction.

3.17 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.

3.18 INSTALLATION, DIRECT STICK SYSTEM

Direct stick install to AS/NZS 2455.1, section 3. Apply adhesive evenly over the entire substrate surface to the carpet manufacturer's requirements. Lay carpet with all edges, selvages and joins tightly butted and completely bonded to the floor surface. Roll the carpet with a clean 25 kg roller and ensure complete contact with adhesive.

3.19 INSTALLATION, DOUBLE BOND SYSTEM

Double bond install to AS/NZS 2455.1, section 3. Apply adhesive on the underlay to the carpet manufacturer's requirements. Lay carpet with edges, selvages and joins tightly butted and completely bonded to the underlay surface.

3.20 LAYING TO STAIRS

Install on stairs in accordance with AS/NZS 2455.1.

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3.21 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.

Completion

3.22 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 UNDERLAY

Location	Brand	Type/thickness /weight
Carpet Generally	High density bonded polyurethane foam (PBF)	7mm

4.2 CARPET

Location	Brand/type /weight/code	Installation method
Okiwi Bay, Beech	39.4/10 cm (1/10 gauge)	**Conventionally laid over proprietary carpet underlay; power-stretched and secured to perimeter smooth-edge carpet grippers.** Heat-bond seams where required.

4.3 STAIR CARPET TO AS/NZS 2455.1

Location	Brand/type /weight/code	Installation method
Okiwi Bay, Beech	39.4/10 cm (1/10 gauge)	**Conventionally laid over stair-grade underlay; stretched and secured to smooth-edge grippers at tread/riser junctions, tightly formed over nosings and securely tucked/fixed.**

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7151AS ATLANTIS SHOWER SYSTEMS

1 GENERAL

This section relates to the supply and installation of Atlantis Shower Systems.

It includes:

- Shower bases
- Shower wall liners
- Glass shower screens
- Accessories and components to complete installation

1.1 RELATED WORK

Refer to 6211 WALL TILING SYSTEMS
Refer to 6221 FLOOR TILING SYSTEMS

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

FFL	Finished Floor Level
TANZ	Tile Association of New Zealand

Documents

1.3 DOCUMENTS

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

NZBC E3/AS2	Internal Moisture - Internal Wet-area Membrane Systems
AS/NZS 2208	Safety Glazing Materials in Buildings

Plumbers, Gasfitters and Drainlayers Act 2006

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
Atlantis shower system brochures
Atlantis shower system installation guides
Atlantis shower system drawings
Atlantis shower system BPIRs.
TANZ appraisal 12124 - Atlantis Linea Quattro shower base - expires 14/03/2027
TANZ appraisal 12125 - Atlantis EasyTile shower base - expires 14/03/2027
Atlantis cleaning & maintenance guide

Manufacturer/supplier contact details

Company:	Atlantis Bathroom Style Limited
Trading as:	Atlantis Bathrooms
Web:	www.atlantis.co.nz
Email:	support@atlantis.co.nz
Telephone:	0800 428 526

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

25 years	For Linea Quattro shower bases
25 years	For EasyTile shower bases
25 years	For Accessible shower bases
10 years	For Ebony & Ivory shower bases
10 years	For Verve shower bases
7 years	For Black Pearl shower bases
7 years	For Quub shower bases
7 years	For Ellure Tile Look Walls

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7 years	For Acrylic Wall Liners
25 years	For EasyNiche Tile Over Shelf
7 years	Foe EasyNiche Retrofit
7 years	For EasyNiche Exposed
5 years	For Glass Shower Screens
5 years	For Shower Hardware
2 years	For Architectural Finishes

- 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 workmanship

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 QUALIFICATIONS WORKERS – INDUSTRY QUALIFICATION REQUIREMENTS

Workers or supervisors of plumbing work are required to be a Certifying Plumber under the Plumbers, Gasfitters and Drainlayers Act 2006. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.9 NO SUBSTITUTIONS

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

1.10 INFORMATION FOR OPERATION AND MAINTENANCE

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

- Atlantis cleaning & maintenance guide

Provide this information prior to practical completion.

2 PRODUCTS

Materials

2.1 LINEA QUATTRO SHOWER SYSTEM

TANZ appraised as compliant with NZBC E3/AS2. Fibreglass reinforced acrylic, ready to tile shower base with tile-in channel drain. Available in a range of two-wall or three-wall sizes and configurations, with step or level entry, and 1:80 fall to waste. 2160mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 with CristalVision Nano-Coating. Available with fixed (walk-in), hinged, angled or sliding door entry options. Refer to SELECTIONS.

2.2 EASYTILE SHOWER SYSTEM

TANZ appraised as compliant with NZBC E3/AS2. Fibreglass reinforced acrylic, ready to tile shower base with square tile-in waste, available in a range of two-wall or three-wall sizes and configurations. 1960mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 available with hinged or angled entry door options. Refer to SELECTIONS.

2.3 EBONY AND IVORY SHOWER SYSTEM

Pre-formed, pre-finished, solid LiberettoStone™ shower base with mini channel drain available in a range of two-wall or three-wall sizes and configurations. 2150mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 with CristalVision Nano-Coating. Available with fixed (walk-in), hinged or sliding entry door options. Refer to SELECTIONS.

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2.4 VERVE SHOWER SYSTEM

Pre-finished, matte fibreglass reinforced acrylic shower base with matching acrylic-top waste. Available in a range of two-wall or three-wall sizes and configurations. 2050mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 with CristalVision Nano-Coating. Available with hinged, angled or sliding entry door options. Refer to SELECTIONS.

2.5 BLACK PEARL SHOWER SYSTEM

Pre-finished, gloss white fibreglass reinforced acrylic shower base with stainless steel-top waste. Available in a range of two-wall or three-wall sizes and configurations.

2060mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 with CristalVision Nano-Coating. Available with hinged, angled or sliding entry door options. Refer to SELECTIONS.

2.6 QUUB SHOWER SYSTEM

Pre-finished fibreglass reinforced acrylic shower base with matching acrylic-top waste. Available in a range of two-wall or three-wall sizes and configurations. 1960mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 available with hinged or angled entry door options. Refer to SELECTIONS.

2.7 ACCESSIBLE SHOWER SYSTEM

Prefinished or ready to tile fibreglass reinforced acrylic shower base with centre waste. 1200mm x 1200mm two-wall or three-wall configuration with step entry, level entry or seamless entry install options.

2160mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 with CristalVision Nano-Coating available with fixed (walk-in), hinged or sliding entry door options. Refer to SELECTIONS.

2.8 NAKED FRAMELESS SHOWER SCREENS

2120mm high frameless 8mm toughened glass shower screens to AS/NZS 2208 with CristalVision Nano-Coating. Available in a range of two-wall or three-wall sizes and configurations with either fixed (walk-in), hinged, angled or sliding entry door options.

Components

2.9 ACRYLIC SHOWER LINER

Gloss White Sanitary Grade Acrylic liner folded to suit shower unit. 2mm thick, height to match shower screens.

2.10 ACRYLIC SHOWER LINER - ELLURE

4.5mm thick, 2400mm high, tile-look acrylic shower wall panel system. Gloss or matte finish available in subway or simply white tile patterns. Available in sheets up to 1600mm wide, with powder coated aluminium joiners to create two-wall, three-wall or single panel configurations, with satin anodised aluminium finishing trim. Refer to SELECTIONS.

2.11 FLOOR TILES

Refer to 6221 Floor Tiling Systems.

2.12 WALL TILES

Refer to 6211 Wall Tiling Systems.

Accessories

2.13 EASY NICHE

One-piece acrylic recessed wall shelf or footrest to suit 90mm wall cavity. Available as pre-finished acrylic or tile-over in a range of sizes. Refer to SELECTIONS.

2.14 STONE FLOOR OVERLAY

Factory fitted, single piece LiberettoStone™ stone floor overlay for Linea Quattro shower base. Available in a range of colours. Refer to SELECTIONS.

2.15 HARDWARE

Glazing channels, trims and shower door hardware available in a range of finishes. Refer to SELECTIONS.

2.16 SILICONE

Bostik V60 single component, neutral cure silicone.

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2.17 CONSTRUCTION ADHESIVE

B Fuller - Sturdi Bond Construction Adhesive or Soudal - Gorilla Grip Construction Adhesive for applications in temperatures under 5°C.

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.

3.5 INSTALLATION GENERALLY

Install Atlantis shower systems and accessories in accordance with the relevant Atlantis installation guide.

Install - Shower base

3.6 PREPARE SUBSTRATE - FLOORS

Clear floor of all debris and dust.

3.7 PREPARE LEVEL ENTRY

Use Floor Levelling Compound to bring the floor recess to the correct height to suit FFL prior to tray installation.

3.8 PREPARE WASTE

Provide a hole for the waste fitting to the minimum size stated in the installation guide and in the correct position to suit the shower base, allowing for some flexibility/movement in the waste body for ease of installation. Separate the components of the waste and connect the waste body to the pipework, ensuring that the sealing ring is in the correct position on the body, and that the waste lines up with the outlet hole in the shower base.

3.9 PREPARE WASTE - LINEA QUATTRO

Provide a 600mm long x 150mm wide x 150mm deep waste recess to suit the shower tray. Connect plumbing to waste position, allowing for 5mm tolerance when the tray is fitted. Dry fit the tray prior to setting plumbing in final position and ensure the swivel outlet is firmly tightened.

3.10 DRY FIT SHOWER TRAY

Dry fit the shower base to verify that it can be installed level and that the waste body is in the correct position.

3.11 INSTALL SHOWER TRAY

Apply adhesive liberally to the base and install shower base in the final position, level and with the inside face of the upstand flush with the inside face of the wallboard. Weigh the tray down to prevent movement while curing.

3.12 COMPLETE WASTE INSTALLATION

Firmly secure the waste upper down to the waste body and fit the waste cover into position.

3.13 INSTALL TILED INSERT

Apply a small amount of mortar or construction adhesive to the corners of the underside of the tile insert waste bottom, packing it to the required height and allowing water to drain freely. Adjust the tile insert waste top to the required height using grub screws. Cut the tile to size to suit the waste top, then silicone tile in place, ensuring the tile is level with the top edge of the waste top. Fit tiled waste top into position.

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3.14 PREPARE SHOWER BASE FOR TILING

Sand the acrylic surface of the shower base with 120 grit sandpaper prior to tiling.

Install - Shower liner

3.15 PREPARE SUBSTRATE - WALLS

Remove dust.

3.16 INSTALL ACRYLIC SHOWER LINER

Measure and drill tapware penetrations and cut liner to suit floor glazing channel where required. Mark the adhesive area and dry fit the liner to confirm accurate alignment to the tray and penetrations, trimming the bottom edge where required.

Apply adhesive in 6mm vertical beads at 70mm centres starting 30mm from corners. Apply a continuous 10mm horizontal bead of silicone 15mm below the top of the tray upstand, returning it down to the edge of the liner and shower tray at each end.

With protective film intact, fit the liner in position and, using a padded block or rubber roller, press firmly from the corners outward to expel air and achieve full contact with the wall and upstand. Provide temporary support. Wipe off excess silicone and adhesive and peel back the protective film.

3.17 INSTALL ELLURE ACRYLIC WALL PANELS

Trim Ellure wall panels to height as required and drill tapware penetrations. Mark adhesive area and dry fit panels and corner extrusions to confirm accurate alignment to the tray and penetrations.

Install the first corner extrusion by applying a continuous 10mm vertical bead of silicone to the rear edges and pressing the extrusion firmly into the corner. Apply a further 10mm bead of silicone to each front face of the extrusion, stopping 15mm from the bottom, then apply a continuous 10mm horizontal bead of silicone 15mm below the top of the tray upstand, returning it down to the edge of the liner and shower tray at each end and to the glazing channel where fitted. Apply wall adhesive in 6mm vertical beads at 70mm centres starting 30mm from the corners.

For three-wall configuration, fix second corner extrusion to rear panel with silicone before installing the panel.

Remove rear protective film from Ellure wall panel and fit into position. Using a padded block or rubber roller, press firmly from the corner outward to expel air and achieve full contact with the wall and upstand. Provide temporary support. Repeat this process with the remaining panels then wipe off excess silicone and adhesive.

Where a panel jointer is required, apply silicone to the rear face and each front face and firmly press into position.

3.18 INSTALL GLAZING CHANNEL & TRIMS - ACRYLIC WALL LINER

Fix wall glazing channels into position with provided screws and Flexicone then fix selected trims to conceal exposed edges of the shower liner.

3.19 INSTALL GLAZING CHANNEL & TRIMS - ELLURE WALL PANELS

Fix Ellure trims to conceal exposed panel edges, then install the wall glazing channel by applying a bead of silicone to the rear of the channel and inserting in into the trim void, then screwing into position. Where a void remains, fill it with the supplied acrylic strip.

3.20 INSTALL GLAZING CHANNEL - TILED WALLS

After waterproofing but before tiling, fix wall glazing channels into position with provided screws and Flexicone.

Install - Shower screens & accessories

3.21 INSTALL SHOWER SCREENS

Fit fixed glass panels into glazing channels, checking for plumb before tightening in place. Position and fit door to fixed panels in accordance with doorset installation guide.

3.22 INSTALL ACCESSORIES - EASYNICHE

Install EasyNiche in accordance with the relevant installation guide.

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Completion & Commissioning

3.23 COMPLETION MATTERS

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

4 SELECTIONS

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

Materials

4.1 EASYTILE SHOWER SYSTEM

Location:	Showers Generally
Type:	EasyTile Shower System
Supplier:	Atlantis Bathroom Style Limited
Configuration/Size:	2 Wall and 3 Wall | Variety refer to drawings 900mm x 1200mm & 1200mm x 1200mm
Base finish:	Tiled - up to 12mm thick
Wall finish:	Tiled
Hardware:	Chrome
Shower screen:	HR - Hinged Door

Accessories

4.2 EASY NICHE

Location:	Showers Generally
Type:	EasyNiche
Supplier:	Atlantis Bathroom Style Limited
Style:	Tile Over
Size:	Refer to manufacturer for size options

4.3 ADHESIVE

Location:	Showers Generally
Type:	HB Fuller - Sturdi Bond Cons

4.4 SILICONE

Location:	Showers Generally
Type:	Bostik V60

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