PEAK ARCHITECTURE

Architectural Specification

QLCHT 35,39,53,57 Gillespie Street, Hawea

General specification

Appendix

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1210 PROJECT.

1 GENERAL

1.1 PROJECT

Street address:	35,39,53 & 57 Gillespie Street, Lake Hawea
Legal description:	LOT 350, 348, 488, 490 DP 596384
Site area:	Refer to site plan
Project type:	New build
Intended use:	residential
Intended life:	Indefinite but not less than 50 years

1.2 PROJECT DESCRIPTION

Erect new residential Type 1A & 1B, dwelling with 3 bedrooms, 1 bathroom, single garage open kitchen and living.

1.3 LBP REQUIREMENT

Any site license LBP's shall have a minimum:

Site license in area of practice 1
Carpentry
Foundations 2: Concrete Foundations
Roofing 2: Profiled metal roof and/or wall cladding

1.4 OWNER

Name:	Queenstown Community Housing Trust

1.5 DESIGNER

Name:	Simon Garth
Mailing address:	302 Hoon Hay Road, Christchurch
Telephone:	02108873480
Email:	simon@peakarchitecture.co.nz

1.6 CONTRACTOR

Name:	Otago Projects
Mailing address:	Alexandra
Email:	saul@otagoprojects.co.nz

1.7 REVISION

Issue:	FOR CONSENT
Date	4.11.26

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1211 DOCUMENTATION

1 GENERAL

1.1 DRAWINGS

Refer to attached drawings and drawing index on sheet A0.00.

1.2 OTHER DOCUMENTS (ATTACHED)

E2 risk Matrix

H1 report
Structural Engineers foundation PS1 incl. calculations
Trusstech Truss and lintel design documentation

1.3 PRODUCER STATEMENTS

Truss and frame producers statement attached with consent docs

Structural engineers design PS1

1.4 MANUFACTURERS LITERATURE

Refer to Specification appendices for all manufacturers literature

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1212 COMPLIANCE

1 GENERAL

1.1 SITE DATA

Soil type:	Refer engineers documents (to NZS 3604, 3.2 **Soil types**)
Exposure zone:	Zone B (to NZS 3604, 4.2 **Exposure zones** or E2/AS1 Zone E severe marine)
Wind zone:	HIGH (to NZS 3604, table 5.4 **Determination of Wind Zone**)
Earthquake zone:	Zone 3 (to NZS 3604, figure 5.4 **Earthquake zones**)
Climate Zone:	Zone 6

1.2 BUILDING DATA

Building classification:	2 Importance Level (to NZS 3604, table 1.1 Classification of buildings)
Floor live load:	Up to 2 KPa max (to NZS 3604, table 1.2 Imposed floor live load reference values)
Overall height:	5.0 metres max (in accordance with NZS 3604, Fig 1.2 Buildings covered by this Standard)
Risk assessment:	Refer to E2 Risk Matrix

1.3 PRODUCER STATEMENTS

Provide Producer Statements for the following

- Truss design
- Aluminium joinery
- Glazing
- Engineers PS4

Provide Producer Statements in the required form. Where no form is specified provide in the industry/trade standard form. Provide all Producer Statements before the Building Consent Authority carries out the final inspection.

1.4 RECORDS OF WORK

Provide Records of Work for Restricted Building Work:

- Carpentry
- Roofing
- Foundations

Refer to the Building Consent for specific requirements. Provide Records of Work in the required form. Provide all Records of Work before the Building Consent Authority carries out the final inspection.

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1213 SELECTIONS

The following selections are to be read in conjunction with the related work sections, where they are available, and the general sections.

2 SITE

<< 2200 GROUNDWORKS AND PREPARATION >>

2.1 FILL FOR GROUNDWORK

Type: Refer to geotechnical report, structure engineers design.

2.2 EXCAVTION

Refer Structural Engineers Drawings

2.3 BACKFILLING

N/A

2.4 HARDFILL

Compacted Hardfill in accordance with NZS3604.2011 and geotechnical engineer report.

3 STRUCTURE

<< 3110 CONCRETE WORK >>

3.1 DAMP-PROOF MEMBRANE - UNDER SLAB

Type/thickness: 0.25mm Polyethylene DPM

3.2 INSULATION - UNDER SLAB

Type/thickness: Fully insulated Raft Slab - Refer to details
Edge insulation: 50mm edge insulation R1.0 min

3.3 CONCRETE REINFORCEMENT

Type: Refer to structural drawings

3.4 CONCRETE

Location: Refer to foundation drawings
Strength: 25MPa

<< 3800 TIMBER FRAMING >>

3.5 EXTERIOR WALL TIMBER FRAMING

Type/treatment: Radiata pine, Grade SG8, Treated H1.2
Cavity battens: Radiata pine, Treated H3.1 (non-structural)
Jamb battens: Radiata pine, Treated H3.1

3.6 ROOF TIMBER FRAMING/ PURLINS

Type/treatment: Truss framing, Rafters, Purlins, Radiata pine, Grade SG8, Treated H1.2

3.7 ROOF TRUSSES

Type/treatment: Refer to truss design manufacture documentation
Truss supplier: Refer to Truss design documentation

3.8 INTERIOR WALL TIMBER FRAMING

Type/treatment: Radiata pine, Grade SG8, Treated H1.2

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3.9 EXTERIOR EXPOSED TIMBER

Cladding & trim:	Radiata pine, Dressing, Treated H3.1
Structure:	Radiata pine, Grade SG8, Treated H3.2 CCA (preservative code 01 or 02)
Deck framing & joists:	Radiata pine, Grade SG8, Treated H3.2 CCA (preservative code 01 or 02)

4 ENCLOSURE

<< 4160 DAMP-PROOFING, UNDERLAYS AND RIGID AIR BARRIERS >>

4.1 DAMP-PROOF COURSE

Brand/Type:	Where required Supercourse 500 or similar approved complying with NZS3604.2011

4.2 ROOF UNDERLAY

Brand/Type:	Bayonet BayoWrap Roof Underlay or similar approved

4.3 WALL UNDERLAY

Brand/Type:	James Hardie RAB

4.4 WINDOW FLASHING TAPE

Brand/Type:	As per details and manufacturers specification Thermaflash or similar

<< 4220 WALL CLADDING >>

4.5 CLADDING

Brand/Type:	Abodo WB18 Vertical Shiplap Cladding
Fixings:	45mm H3.1 cavity batten, Concealed fixings
Jointers:	As per manufacturers specification
Finish:	Machine Coated refer to specificaiton

4.6 CLADDING

Brand/Type:	JH Axon Panel Smooth Board with Hardie™ Axent™ Trim.
Fixings:	19mm CLD structural Cavity Batten. Fixed as per attached manufacture literature
Jointers:	As per manufacturers specification
Finish:	Painted

<< 4239 SOFFIT LINING >>

4.7 SOFFIT

Brand/Type/thickness:	4.5mm Hardiflex or similar approved Painted White with Expressed joint
Fixings:	As per attached manufacture literature
Finish:	Paint finish Flaxpod or similar approved to match joinery
Fascia	280x30 H3.2 PRE-PRIMED TIMBER FASCIA

<< 4240 METAL WALL CLADDING >>

4.8 METAL CLADDING

Brand/Type/thickness:	0.55mm BMT Corrugate Colorsteel wall cladding
Fixings:	20mm H3.1 cavity batten, Concealed fixings
Finish/colour:	Refer elevations
Profile direction:	Vertical

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<< 4310 ROOFING >>

4.9 ROOFING

Brand/Type:	0.40mm BMT Corrugate Colorsteel Roof cladding
Flashings:	0.55mm Colorsteel
Fixings:	As per manufactures instructions
Colour:	Refer Roof plan

<< 4520 ALUMINIUM WINDOWS AND DOORS >>

4.10 ALUMINIUM WINDOWS AND DOORS

Brand/Type:	Thermal Heart Centrafix, Metro Series and Residential Seires, Thermally broken Double glazed aluminum suite
Finish/colour:	Refer Elevations
Reveals:	Timber reveals as per drawings with paint finish
Flashings:	Refer Elevations

<< 4555 GARAGE DOORS >>

There is no work section specification relating to the following selections

4.11 GARAGE DOOR

Brand/Type:	Dominator Garage Doors, Low Head Automatic
Face panel:	Insulated sectional door
Finish:	Refer Elevations

<< 4610 GLAZING >>

4.12 GLAZING - ORDINARY (DOUBLE GLAZED, THERMALLY BROKEN)

Location:	As per drawings refer to window and door schedule
Type:	Clear float glass

4.13 GLAZING - SAFETY (DOUBLE GLAZED)

Location:	As per drawings refer to window and door schedule
Type:	Toughened safety glass in accordance with NZBC and NZS 4223

4.14 GLAZING - SHOWER SCREENS

Brand/Type:	In accordance with proprietary shower specifications and NZS4223
Hardware:	Refer offer document

4.15 GLAZING - MIRRORS

Location:	To bathrooms
Type:	Safety Glass

<< 4710 THERMAL INSULATION >>

4.16 UNDERFLOOR INSULATION

Brand/Type:	INSULSLAB 50mm EPS EDGE INSULATION

4.17 WALL INSULATION

Brand/Type:	Eliment or similar approved
R value/Thickness:	R4.1 140mm as per drawings

4.18 CEILING/ROOF INSULATION

Brand/Type:	Eliment or similar approved
R value/Thickness:	R3.6 (Layer1) R3.6 (Layer 2)

<< 4820 FLASHINGS >>

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4.19 FLASHINGS - GENERALLY

Type: 0.55mm Colorsteel

4.20 FLASHINGS - CONCEALED

Type: 0.7mm Colorsteel

5 INTERIOR

<< 5110 INTERIOR LININGS AND TRIM >>

5.1 WALL LININGS

Location: To walls as per drawings
Brand/Type/thickness: 10mm Standard, Aqualine, brace line plasterboard and 12mm ply (garage)
Finish: Paint finish

5.2 CEILING LININGS

Location: To ceilings as per drawings
Brand/Type/thickness: GIB 13mm Standard and Aqualine plasterboard
Finish: Paint finish

5.3 INTERIOR TRIM

Skirtings: Beveled Skirting
Architraves: Refer to drawings

<< 5230 INTERIOR DOORS & FRAMES >>

5.4 INTERIOR DOORS

Location: As per drawings
Leaf type/finish: Hollow core/Solid core timber doors with paint finish
Frame type/finish Timber paint finish
Hardware: Confirm selection with client

<< 5510 JOINERY FIXTURES AND FITTINGS >>

5.5 FABRICATED JOINERY ITEMS

Location/item: Contractor to confirm joinery design with client prior to installation

There is no work section specification relating to the following selections

<< 5520 HARDWARE >>

All hardware to be fit for purpose, refer fittings and fixtures hardware

<< 6300 FLOOR COVERING >>

6 FINISH

6.1 WET AREA WATERPROOFING

Location: Main Bathroom, shower walls
Brand/type: Acrylic shower lining to shower walls

6.2 TIMBER OVERLAY FLOORING

Location: Refer drawings
Brand/Type/finish: Vinyl planking (similar approved)
Laying method: A per manufacturers specification

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6.3 CARPET

Location:	Refer drawings
Brand/Type:	Confirm selection with client
Underlay:	As per selection above
Skirting	Refer drawings

<< 6700 PAINTING >>

6.4 EXTERIOR PAINTING

Soffit	Paint finish to soffit

6.5 INTERIOR PAINTING

	ALL COLOURS FROM A WHITE BASE
Walls	Low Sheen Finish Paint finish to Level 4
Ceiling:	Flat Finish Paint finish to Level 4
Doors	Paint finish to Level 4 (Reveals and Bathrooms: Satin Enamel Finish)
Cabinetry:	Paint finish to Level 4
Trim:	Paint finish to Level 4
Bathroom:	Paint finish to Level 4 (Reveals and Bathrooms: Satin Enamel Finish)

7 SERVICES

<< 7120 WATER SYSTEM >>

7.1 WATER SYSTEM

Water heater type:	300L MAINS PRESSURE EXTERIOR HOT WATER CYLINDER
Water heater brand/model:	Refer Specification.

<< 7150 SANITARYWARE, TAPWARE & ACCESSORIES >>

7.2 SANITARYWARE

All sanitary ware and tapware to be confirmed with client. Fixtures to be installed in locations as shown on drawings.

<< 7410 RAINWATER SPOUTING SYSTEM >>

7.3 SPOUTING

Brand/type/size:	Colorsteel 125mm Quad Gutter with brackets allowing overflow along gutter

7.4 DOWNPIPES

Brand/type/size:	Colorsteel round, sizes as per drawings

<< 7430 DRAINAGE SYSTEMS >>

7.5 CHANNEL DRAIN

Type:	ACO drain with steel grate

<< 7700 ELECTRICAL >>

7.6 ELECTRICAL OUTLETS AND SWITCHES

Brand/type:	All electrical outlets including placement to be confirmed by contractor and client

7.7 LIGHT FITTINGS

Brand/type:	All light fittings to be confirmed by contractor and client

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7.8 SMOKE ALARMS

Brand/type/reference: Battery powered smoke alarms min, to locations as shown on drawings

7.9 EXTRACT SYSTEMS

Kitchen extract: Extract Hood
Bathroom extract: MVHR system refer to electrical drawings

8 EXTERNAL

<< 8000 LANDSCAPE >>

There is no work section specification relating to the following selections

8.1 DRIVEWAY

Type/finish: Exposed aggregate (CONFIRM WITH CLIENT/CONTRACTOR)

8.2 FENCES & GATES

Type/finish: As per developers requirements



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1220 GENERAL REQUIREMENTS

1 GENERAL

1.1 THE WORKS

The works are as described in this specification and shown on the drawings.

1.2 PERSONNEL

Owner: The person defined as "owner" in the New Zealand Building Code.

Contractor: The person contracted by the owner to carry out the contract.

1.3 THE SITE

The site of the works, the site address and the legal description are listed under the sections 1210 PROJECT. Confine access and work to the area of site indicated on the drawings.

1.4 SPECIFICATION SECTIONS

Sections are for reference and convenience only and do not constitute individual trade sections or work elements. Read all sections together and read this section with all other sections.

1.5 INTERPRETATIONS

Required:	Required by the documents, or by a statutory authority.
Proprietary:	Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
Approval:	Approval in writing.
Direction:	Direction in writing.
Notified:	Notified in writing.

1.6 ABBREVIATIONS

The following abbreviations are commonly used throughout the specification:

AS	Australian Standard
AS/NZS	Joint Australian/New Zealand Standard
BCA	Building Consent Authority
BRANZ	Building Research Association of New Zealand
LBP	Licensed Building Practitioner
NZBC	New Zealand Building Code
NZS	New Zealand Standard
NZS/AS	Joint New Zealand/Australian Standard
NUO	Network Utility Operator
OSH	Occupational Safety and Health
RBW	Restricted Building Work
TA	Territorial Authority

1.7 INCONSISTENCIES

If there are any inconsistencies, errors or omissions in or between documents, the contractor must seek direction in resolving it. Figured dimensions take precedence over scaled dimensions; drawings to a larger scale take precedence over drawings to a smaller scale and drawings take precedence over specification.

1.8 SUBSTITUTIONS

A substitution may be proposed where specified products are not available, or if substitute products are brought to the attention of and are considered by the owner as equivalent or superior to those specified. Except where a specified product is not available, the owner is not bound to accept any substitutions.

Notify proposed substitution of specified products. Include sufficient information to allow the owner to confirm that the substitution is equivalent or superior to that specified. Advise the owner whether an amendment will or may be required to the Building Consent and the expected costs of such amendment.



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1.9 THE WORDS "PROVIDE" OR "FIX"

The words "provide" (or "supply") or "fix" if used separately mean "provide and fix" unless explicitly stated otherwise.

1.10 MANUFACTURERS AND SUPPLIERS

Manufacturers and suppliers requirements, instructions, specifications or details are those issued by them for their particular material, product or component and are the latest edition.

1.11 REFERENCED DOCUMENTS

Reference is made to various New Zealand Building Code (NZBC) acceptable solutions (AS) and verification methods (VM) for criteria and/or methods used to establish compliance with the Building Act 2004. Reference is also made to various Standards produced by Standards New Zealand (NZS, AS/NZS) and to listed Acts, Regulations and various industry codes of practice and practice guides. The latest edition (including amendments and provisional editions) at the date of this specification applies unless stated otherwise. Documents cited both directly and within other cited publications are part of this specification.

1.12 PRECEDENCE OF REFERENCED DOCUMENTS

This specification takes precedence in the event of it being at variance with and requiring a higher standard than, the cited documents. Resolution of any variance must be confirmed in writing and where Building Consent is affected, the change notified to the BCA for advice as to whether an amendment is required to the Building Consent Authority.

1.13 BUILDING CONSENT COMPLIANCE

It is an offence under the Building Act 2004 to carry out any work not in accordance with the Building Consent. Refer the resolution of matters concerning compliance to the owner for a direction. Where Building Consent is affected refer any change to the BCA for advice as to whether an amendment is required to the Building Consent.

1.14 STATUTORY OBLIGATIONS

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

1.15 BUILDING CONSENT

Obtain the original or copies of the Building Consent form and documents from the owner and keep on site. Liaise with the BCA and/or the building certifier for all required notices and all inspections required during construction to ensure compliance. Return the consent form and documents to the owner on completion.

1.16 INSPECTIONS

Do not proceed with work noted on the Building Consent for inspection until it has been inspected and passed by the BCA inspector.

1.17 KEY PERSONNEL

Provide names and contact detail of LBP's/ key personnel. Prior to Restricted Building Work being carried out, provide names, registrations numbers (where appropriate) and contact detail of LBP's that are required for RBW by the Building Consent Authority as part of the Building Consent.

Include the following as applicable:

- Person with the appropriate site license
- Carpenter
- Registered drainlayer
- Registered plumber
- Registered electrician
- Roofer
- External window manufacturer

1.18 PRODUCER STATEMENTS AND LBP DOCUMENTATION

When Records of Work or producer statements verifying construction are required, for the application for the Code Compliance Certificate, provide copies to both the BCA and the owner. Provide LBP documents and producer statements in the form required by the BCA.



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1.19 CERTIFICATE OF COMPLIANCE

Provide Certificates of Compliance for electrical and gas work carried out.

1.20 CODE COMPLIANCE CERTIFICATE

Provide documentation that the Owner requires in order to obtain a Code Compliance Certificate for the consented work.

1.21 TRADE GUARANTEES AND WARRANTIES

Where specific trade guarantees/warranties are offered covering materials and/or execution of proprietary products or complete installations, or are required as a condition of Building Consent, provide guarantees/warranties to the owner.

1.22 HEALTH AND SAFETY

Make the works safe and provide and maintain a safe working environment, to the requirements of the Health and Safety at Work Act 2015. Ensure that all those working on or visiting the site are aware of the rules governing site safety, are properly supervised and are not unnecessarily exposed to hazards and risks. Peak Architecture has taken all reasonable steps to identify hazards associated with the design and in the event that a design related hazard becomes apparent to the client and/or contractor, they shall immediately notify Peak Architecture of these issues at which point a design review to identify the appropriate risk mitigation methods will be undertaken.

1.23 PROTECT THE WORKS

Protect parts of the work liable to damage until completion of the works. Take all precautions necessary to protect the works from damage by unauthorised entry or inclement weather. Brace and support all parts of the works against damage during construction.

1.24 STORAGE AND PROTECTION

Provide temporary storage areas and protective covers and screens. Fillet stack and protect all framing and structural members from moisture and contamination. Completely protect finishing materials from the weather and damage and store in accordance with the manufacturer's requirements. Protect fabricated elements from the weather and damage, and store in accordance with suppliers requirements.

1.25 ANTIQUITIES AND ITEMS OF VALUE AND INTEREST

Report immediately the finding of any fossils, antiquities, pre-1900 items, or objects of value. Ensure they remain undisturbed until approval is given for their removal.

1.26 MEANS OF COMMUNICATION

All directions and approvals in writing.

1.27 QUALITY ASSURANCE

Carry out and record regular checks of material quality and accuracy. Provide all necessary materials, equipment, plant, attendances, supervision, inspections and programming to ensure required standards are met.

1.28 DAMAGE AND NUISANCE

Prevent damage and nuisance from water, fire, smoke, vehicles, dust, rubbish, noise and other causes resulting from the contract works. Comply with the requirements of the TA and relevant Acts and Standards.

1.29 SET-OUT AND DATUM

Set out the works to conform with the drawings. Establish a permanent site datum to confirm the existing ground floor level and its relationship to other existing and new building levels.

1.30 EXECUTION OF THE WORK

Conform to the requirements of this specification. Ensure work is level, plumb, and true to line and face. Employ only experienced workers familiar with the materials and techniques specified.

1.31 MATERIALS AND PRODUCTS

Use only new materials and products, unless stated otherwise, of the specified quality and complying with cited documents.



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1.32 COMPATIBILITY

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

1.33 COMPLETE ALL SERVICES

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

1.34 CLEAR AWAY

Regularly clear away trade debris, unused materials and elements from the site. On completion of the work leave the building clean and ready for occupancy, with all services operating and mechanical parts in good working order. Remove temporary markings, coverings and protective wrappings.

1.35 CLEAN

Clean and wash down external surfaces to remove dirt, debris and marking. Clean interior surfaces including floors, glass, cabinetwork, joinery, sanitary and hardware items.

1.36 SITE BARRIERS

Provide where required 1.8m High site barrier fence to perimeter of the site to restrict public.

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1233 DOCUMENTS REFERENCED

1 GENERAL

Documents listed below are, when referred to in the text, part of this specification. However, this specification takes precedence in the event of it being at variance with and requiring a higher standard than any cited document.
The latest edition of the cited document (including amendments and provisional editions) at the date of this specification applies unless stated otherwise.

1.1 ACTS AND REGULATIONS

Building Act 2004

Gas (Safety and Measurement) Regulations 2010
Health and Safety at Work Act 2015
Health and Safety at Work (Asbestos) Regulations 2016
Electricity (Safety) Regulations 2010 (Reprint as at 21 January 2019).
Plumbers, Gasfitters and Drainlayers Act 2006

1.2 NEW ZEALAND BUILDING CODE VERIFICATION METHODS

NZBC E2/VM1	Cladding systems of buildings up to 10 m in height – including junctions with windows, doors and other penetrations

1.3 NEW ZEALAND BUILDING CODE ACCEPTABLE SOLUTIONS

NZBC B1/AS1	Structural provisions for buildings
NZBC B2/AS1	Durability provisions for building elements
NZBC C/AS2	Protection from fire for buildings other than risk group SH
NZBC D1/AS1	Access routes
NZBC E1/AS1	Surface water
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
NZBC E3/AS1	Internal moisture
NZBC F2/AS1	Hazardous building materials
NZBC F4/AS1	Safety from falling
NZBC G1/AS1	Personal hygiene
NZBC G10/AS1	Piped services - Gas
NZBC G11/AS1	Gas as an energy source
NZBC G12/AS1	Water supplies
NZBC G12/AS3	Water supplies
NZBC G13/AS1	Foul water - Sanitary plumbing
NZBC G13/AS2	Foul water - Drainage
NZBC G13/AS3	Foul water - sanitary plumbing and drainage
NZBC H1/A1	Energy efficiency
NZBC H1/AS2	Energy efficiency

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1.4 NEW ZEALAND STANDARDS

AS/NZS 1604.1	Preservative-treated wood-based products - Part 1: Products and treatment
NZS/AS 1884	Floor coverings - Resilient sheet and tiles - Installation practices
AS/NZS 2269.0	Plywood - Structural - Specifications
AS/NZS 2455.1	Textile floor coverings - Installation practice - General
AS/NZS 2455.2	Textile floor coverings - installation practice - Carpet tiles
AS/NZS 2492	Cross-linked polyethylene (PE-X) pipes for pressure applications
AS/NZS 2537.1	Mechanical jointing fittings for use with crosslinked polyethylene (PE-X) for pressure applications -Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) - General
AS/NZS 2537.2	Mechanical jointing fittings for use with crosslinked polyethylene (PE-X) for pressure applications - Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) –Fittings
AS/NZS 2537.3	Mechanical jointing fittings for use with crosslinked polyethylene (PE-X) for pressure applications - Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) -Fitness for purpose of the system
AS/NZS 2537.4	Mechanical jointing fittings for use with crosslinked polyethylene (PE-X) for pressure applications - Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) -Guidance for the assessment of conformity
AS/NZS 2589	Gypsum linings - Application and finishing
AS/NZS 2642.1	Polybutylene pipe systems - Polybutylene (PB) pipe extrusion compounds
AS/NZS 2642.2	Polybutylene pipe systems - Polybutylene pipe for hot and cold water applications
AS/NZS 2642.3	Polybutylene pipe systems - Mechanical jointing fittings for use with polybutylene (PB) pipes for hot and cold water applications
AS/NZS 2699.1	Built-in components for masonry construction Wall ties
AS/NZS 3000	Electrical installations (known as the Australian/NZ Wiring Rules)
NZS 3101.1	Concrete structures standard
NZS 3103	Sands for mortars and plasters
NZS 3104	Specification for concrete production
NZS 3109	Concrete construction
NZS 3114	Concrete surface finishes
AS/NZS 3500.2	Plumbing and drainage - Sanitary plumbing and drainage
AS/NZS 3500.3	Plumbing and drainage - Stormwater drainage
NZS 3501	Specification for copper tubes for water, gas and sanitation
NZS 3602	Timber and wood-based products for use in building
NZS 3603	Timber structures standard
NZS 3604	Timber-framed buildings
NZS 3622	Verification of timber properties
NZS 3631	New Zealand national timber grading rules
NZS 4210	Masonry construction materials and workmanship
NZS 4211	Specification for the performance of windows
NZS 4223.1	Glazing in buildings - Glass selection and glazing
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 actions
NZS 4229	Concrete masonry buildings not requiring specific engineering design
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential buildings
NZS 4251.1	Solid plastering - Cement plasters for walls, ceilings and soffits

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NZS 4514	Interconnected smoke alarms for houses
AS/NZS 4666	Insulating glass units
AS/NZS 4671	Steel for the reinforcement of concrete
AS/NZS 4858	Wet area membranes
AS/NZS 5601.1	Gas installations - general installations
NZS 6803	Acoustics - Construction noise

1.5 BUILDING RESEARCH ASSOCIATION OF NEW ZEALAND (BRANZ)

Weathertight Solutions Vol. 2: Stucco

Good practice guide: Membrane roofing
Bulletin 519 - Fasteners selection
Bulletin 601 - Sealed for Cladding Joints

1.6 OTHER DOCUMENTS

Concrete NZ

- CCANZ CP 01: Code of practice for weathertight concrete and concrete masonry construction

WorkSafe New Zealand (OSH)

- Good Practice Guidelines - Excavation Safety
- Repainting lead based paints
- Management and Removal of Asbestos (Approved CoP)

Waterproofing Membrane Association Inc.

- WMAI Code of Practice for Below-Grade Tanking Membranes
- WMAI Code of Practice for Interior Wet Area Membranes
- WMAI Code of Practice for Reinforced Modified Bitumen Membrane (RMBM) Systems for Roofs and Decks

New Zealand Demolition and Asbestos Association (NZDAA)

- Best Practice Guideline for Demolition in New Zealand.

New Zealand Metal Roofing Manufacturers Inc

- NZMRM COP: NZ Metal roof and wall cladding: Code of practice

Window & Glass Association NZ (WGANZ)

- PQAS: Powder Coating Quality Assurance System
- Window Installation Guide: Guide to Window Installation as described in E2/AS1.

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2200 GROUNDWORKS & PREPARATION

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work using persons competent and experienced in the trade.

1.2 SITE SAFETY

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

2 PRODUCTS

2.1 FILLING MATERIALS

Volcanic tuff:	Scoriaceous tuff of variable grading excluding silt or clay material, capable of being placed and compacted as specified.
Rock fill:	Hard material comprising rock, broken stone, hard brick, concrete, run of pit scoria, or other comparable inert material capable of being placed and compacted as specified.
Sand fill:	Clean sand of such grading in particle size as to allow for mechanical compaction to 90% maximum density.
Hardcore:	Scoria or crushed rock to GAP (General All Passing) 40 grading.
Granular base:	Screened crushed gravel or scoria graded in size from 20mm to 7mm, clean. When tested with a standard sieve of 4.75 opening no material is to pass.
Dressing course:	Scoria to GAP 20 grading, or "dirty footpath scoria", or equivalent "all in" graded crushed metal aggregate.
Free-draining aggregate:	Scoria or crushed gravel graded 50 to 14 clean.

3 EXECUTION

3.1 EXCAVATION GUIDELINES

Carry out excavation to the guidelines set in WorkSafe, Good Practice Guidelines - Excavation Safety.

3.2 PROTECT EXISTING

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

3.3 SURFACE PREPARATION

To NZS 3604, 3.5 **Site preparation**, remove all turf, vegetation, trees, topsoil, stumps and rubbish from the area being built on.

3.4 UNDERGROUND ELEMENTS AND SERVICES

Break out and remove underground elements and redundant services. Report for instructions when unexpected voids, made-up ground or services are encountered. Seal off the ends of drains or remove to NUO approval.

3.5 STOCKPILE TOPSOIL

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

3.6 GENERAL EXCAVATION

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

3.7 EXCAVATION FOR FOUNDATIONS

Take foundation excavations to depths shown. Keep trenches plumb and straight, bottoms level and solid, stepped as detailed and clean and free of water. READ IN CONJUNCTION WITH RIBRAFT SPECIFICATION.

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3.8 INADEQUATE BEARING

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

- ALL BACKFILL TO BE IN ACCORDANCE WITH GEOTECHNICAL REPORT
- Below slabs on grade: Hardfill compacted in 150mm layers
- Below footings: 10 MPa concrete

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

3.9 GRANULAR BASE FOR SLABS

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

3.10 GENERAL BACKFILLING

Compact backfilling in 150mm layers, with the last 200mm in clean topsoil, lightly compacted and neatly finished off.

3.11 SOIL BEARING CAPACITY

IN ACCORDANCE WITH GEOTECHNICAL REPORT. Contractor to test bearing capacity prior to poring floor, test in accordance with section 3.3 NZS3604:2011 Test method for soil bear capacity. Refer to section 3.1 NZS3604:2011 soil bearing capacity. In addition refer to Firth Rib Raft Floor System specification included in specification appendix.

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3110 CONCRETE WORK

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

Refer to Structural Design drawings. Structural Design takes precedence.

1.1 QUALIFICATIONS

Carry out work using persons competent and experienced in the trade. Structural and foundation work to be carried out by or supervised by the appropriate LBP.

2 PRODUCTS

2.1 REINFORCEMENT

Bars to AS/NZS 4671, grade 300E deformed, other than for ties, stirrups and spirals, unless shown otherwise on the drawings. Welded reinforcing mesh to AS/NZS 4671 Class E. Mild drawn steel tying wire not less than 1.2mm diameter.

2.2 MESH FOR SLABS TO NZS 3604 OR NZS 4229

For slabs on ground, welded reinforcing mesh to AS/NZS 4671, minimum to NZBC B1/AS1 - Grade 500E, 2.27kg/m2 (1.14kg/m2 in each direction).

2.3 SPACERS AND CHAIRS

Precast concrete or purpose made moulded PVC. Use concrete spacer blocks only where the concrete surface is not exposed in the finished work.

2.4 CONCRETE

Strength as selected. Ready-mix normal concrete, maximum aggregate size 19mm to NZS 3104. Site mixed prescribed mix concrete, using either separate batching of sand and coarse aggregate, or builder's mix, to NZS 3104.

3 EXECUTION

3.1 HANDLE AND STORE REINFORCING

Handle and store reinforcing steel and accessories without damage or contamination. Ensure reinforcement is clean and remains clean and free of contamination that may reduce bonding capacity.

3.2 FALSEWORK AND FORMWORK

Use falsework and formwork of sufficient strength to retain and support the wet concrete to the required profiles and tolerances. Select formwork finish to produce the specified finished quality.

3.3 CUT AND BEND

Cut and bend bars using proper bending tools to avoid notching and to the requirements of NZS 3109. Do not rebend bars without written approval. Bend main reinforcing bars, stirrups and ties to the former pin diameters as given in NZS 3109, figure 3.1, **Standard bend, hook and stirrup**.

3.4 SECURE REINFORCEMENT

Secure reinforcement adequately with tying wire and place, support and secure against displacement when concreting. Bend tying wire back well clear of the formwork. Spacing as dimensioned, or if not shown, to the clear distance minimums laid down in NZS 3109, 3.3.**Hooks and bends**.

3.5 LAPPED SPLICES

Set length of laps, where not dimensioned on the drawings, in accordance with NZS 3109: 3.7, **Splices in reinforcement**. Plain bars lapped splices must be hooked.

3.6 MESH LAPS FOR SLABS TO NZS 3604 OR NZS 4229

For slabs on ground, mesh to be lapped and tied, so the outermost wires overlap by the greater of:- the spacing of the cross wires plus 50mm or, 150mm or, manufacturer's requirements. Do not count bar extensions beyond the outermost cross wire.

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3.7 REINFORCEMENT COVER TO NZS 3604

Minimum cover to all reinforcing bars, stirrups, ties and spirals, as shown on drawings. Where cover is not shown on drawings provide minimum cover to NZS 3604 requirements.

3.8 REINFORCEMENT COVER TO NZS 4229

Minimum cover to all reinforcing bars, stirrups, ties and spirals, as shown on drawings. Where cover is not shown on drawings provide minimum cover to NZS 4229 requirements.

3.9 CONCRETE PLACEMENT

To comply with NZS 3109.

3.10 SURFACE FINISHES

To comply with NZS 3114, section 105 **Specification of finishes**, or as denoted on the drawings. Formwork linings and surface finishes as nominated for both fair face and concealed or exposed surfaces. Surface tolerances to comply with NZS 3114, section 104 **Surface tolerances** and 105.3.2.

3.11 DAMP-PROOF MEMBRANE

Apply membrane to prepared basecourse with 150mm laps between sheets. Tape seal laps and penetrations with 50mm wide pressure sensitive plastic tape. Refer to drawings for perimeter details.

3.12 CASTING IN

Build in grounds, bolts and fixings for wall plates and bracing elements, holding down bolts, pipes, sleeves and fixings as required. Form pockets, chases and flashing grooves as required. No grounds exceeding 100mm in length. Minimum cover on conduits 40mm. Do not encase aluminium items in concrete. Do not paint steel embedded items more than 25mm into the concrete encasement. Cut back form ties to specified cover and fill the cavities with mortar. Wrap all pipes embedded in concrete with tape to break the bond and to allow for expansion.

3.13 FLOOR SLABS TO NZS 3604

Slabs on ground to NZS 3604 as modified by NZBC B1/AS1 and NZBC E2/AS3. Construct to NZS 3604, 4.5 **Concrete and concrete masonry** and NZS 3604, 7.5, **Concrete slab-on-ground floors in timber buildings** as modified by NZBC B1/AS1, 2.3 **Timber**. Lay to true and straight surfaces, screeded, floated and steel (manual or power) trowelled finish. Tolerance on flatness: maximum 3mm gradual deviation over a 3 metre straight-edge, to NZS 3114, 304, **Surface tolerances**. Allow for free joints maximum 24m centres to NZBC B1/AS1, paragraph 2.3.7.6, NZS 3604 **New clause**.

In the Canterbury Earthquake Region comply with the changes to NZS 3604 in NZBC B1/AS1.

3.14 FLOOR SLABS TO NZS 4229

Slabs on ground to NZS 4229 as modified by NZBC B1/AS1 and NZBC E2/AS3. Construct to NZS 4229, 6, **Footings** and NZS 4229, 7, **Foundation walls and concrete slab-on-ground** as modified by NZBC B1/AS1, 2.1 **Masonry**. Lay to true and straight surfaces, screeded, floated and steel (manual or power) trowelled finish. Tolerance on flatness: maximum 3mm gradual deviation over a 3 metre straight-edge, to NZS 3114, 304, **Surface tolerances**. Allow for free joints maximum 18m centres to NZS 4229, 7.8.5.3 **Free joints**.

In the Canterbury Earthquake Region comply with the changes to NZS 4229 in NZBC B1/AS1.

3.15 SAW CUTS TO NZS 3604

Cut slabs where indicated on the drawings as required to control shrinkage cracking. Form by saw cutting the slab (blade width approximately 5 mm) to a quarter of the depth of the slab after it has hardened (saw cutting shall take place no later than 24 hours after initial set for average ambient temperatures above 20 ºC, and 48 hours for average ambient temperatures below 20 ºC). If saw cuts are not indicated on the drawings, than provide saw cuts as per the requirements for shrinkage control joints in NZS 3604.

For saw cuts filled with sealant, increase width of cut to suit sealant.

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3.16 SAW CUTS TO NZS 4229

Cut slabs where indicated on the drawings as required to control shrinkage cracking. Form by saw cutting the slab (blade width approximately 5 mm) to a quarter of the depth of the slab after it has hardened (saw cutting shall take place no later than 24 hours after initial set for average ambient temperatures above 20 ºC, and 48 hours for average ambient temperatures below 20 ºC). If saw cuts are not indicated on the drawings, than provide saw cuts as per the requirements for shrinkage control joints in NZS 4229.

For saw cuts filled with sealant, increase width of cut to suit sealant.

3.17 SAW CUTS

Cut slabs where indicated on the drawings and as required to control shrinkage cracking. Carry out cutting as soon as possible, without causing tear-out of aggregate and before shrinkage cracking has occurred, generally within 24 hours of pouring. For saw cuts filled with sealant, increase width of cut to suit sealant.

3.18 SURFACE REPAIRS

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

3.19 CURING OF CONCRETE

Keep damp for not less than seven days. Ensure curing of slabs commences as soon as possible after final finishing, by the use of continuous water sprays, or ponding. Alternately, apply a curing membrane. Ensure any membrane used will not affect subsequent applied finishes.

3.20 STRIKE FORMWORK

Strike formwork without damaging or overloading structure.

3.21 CLEAN OUT

Clean out saw cuts. Fill with cement grout where the floor will be covered with carpet or vinyl.

3.22 WATERPROOFING EXTERIOR OPENINGS

Apply a waterproofing of 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.

Do not use bituminous coatings.



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3800 TIMBER FRAMING

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

Use experienced competent carpenter familiar with the materials and techniques specified. Work to be carried out by or supervised by the appropriate LBP.

2 PRODUCTS

2.1 TIMBER FRAMING GENERALLY

Species, grade and level of treatment to NZBC B2/AS1, NZS 3602, tables 1 to 3 **Requirements for wood-based building components**…, and moisture content to NZS 3602, table 4 **Allowable moisture content**….. Structural Grade (SG) to NZS 3604, NZS 3622 with properties to NZS 3603.

2.2 TIMBER TRUSSES

To FTMA Code of Practice. Moisture content 16% at supply.

2.3 ACCESSORIES

Damp-proof course:	High impact embossed polyethylene
Stud straps	Polypropylene tape run horizontal at 300mm centres over flexible wall underlay, for drained cavities with stud spacings greater than 450mm.
Nails, bolts and screws:	Steel, stainless steel, galvanized steel of pattern to suit the location and to BRANZ BU 519: Fasteners selection. To NZS 3604, 4 **Durability** and NZBC E2/AS1.
Nail plates connectors:	Stainless steel and/or galvanized steel toothed or nailed plates to the plate manufacturer's design for the particular locations as shown on the drawings and to NZS 3604, 4 **Durability**. Galvanized steel and stainless steel connectors and brackets to the connector manufacturer's design for locations shown on drawings and to NZS 3604, 4 **Durability** and NZBC E2/AS1
Corrosion risk	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). For interior timber, treated with copper-based timber preservatives (H3.2 or higher), use a minimum of hot-dipped galvanized steel fixings and fasteners.

3 EXECUTION

3.1 ATTENDANCE

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

3.2 MOISTURE CONTENT

Maximum allowable moisture content to NZS 3602, table 4 **Allowable moisture content…**, for framing supporting interior linings:

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

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3.3 EXECUTION GENERALLY

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

3.4 INSTALL FLOOR, WALL AND ROOF FRAMING

Floors and bottom plates framed and fastened to NZS 3604, 7 **Floors**. Frame walls to required loading and bracing complete with lintels, sills and nogs, all fabricated and fastened to NZS 3604, 8 **Walls**. Frame roof to required loading and bracing complete with valley boards, ridge boards and purlins to NZS 3604, 10 **Roof framing**. Design and fit roof trusses complete with anchorage. All fabricated and fastened to NZS 3604, 9 **Posts**, and NZS 3604, 10 **Roof framing**.

3.5 BATTENS

For drained cavity construction nominal 20mm H3.1 cavity battens (non-structural) to NZBC E2/AS1, 9.1.7 Drained cavities. For direct fix cladding window and door openings nominal 20mm H3.1 jamb battens to NZBC E2/AS1, Figure 9.1.9.4: General window and door opening for direct fixed.



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4171HR JAMES HARDIE® RIGID AIR BARRIERS

1 GENERAL

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

- RAB™ Board - 6mm

1.1 RELATED WORK

Refer to 4220 for Wall Cladding.

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

FRR	Fire resistance rating
SED	Specific engineering design

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

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

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

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

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

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS

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

1.7 SAFE WORKING

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

1.8 NO SUBSTITUTIONS

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

Performance - Wind

1.9 PERFORMANCE, WIND

The design wind pressures are to NZS 3604, up to and including Very High Wind Zone. This is within the scope of the manufacturer's literature and details.

1.10 PERFORMANCE, WIND

The design wind pressures are to NZS 3604, up to and including Extra High Wind Zone. This is within the scope of the manufacturer's literature and details.

1.11 PERFORMANCE, SPECIFIC DESIGN, WIND

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

Performance - Bracing

1.12 BRACING REQUIREMENTS

Provide the HomeRAB™ PreCladding/RAB™ Board bracing system. Refer to Bracing Design Manual for selection.

Performance - Fire

1.13 FIRE RATING REQUIREMENTS

Provide the RAB™ Board fire rated system. Refer to SELECTIONS for system/FRR.

1.14 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.

1.15 EXTERNAL FIRE SPREAD - CLADDING MATERIALS

James Hardie® HomeRAB™ PreCladding and RAB™ Board tested to AS/NZS 3837 and to specific requirements of C/AS1 or C/AS2 achieving Type A classification (peak heat release rate ≤ 100 kW/m², total heat release rate ≤ 25 MJ/m²).

Performance - Acoustic

1.16 ACOUSTIC REQUIREMENTS

Refer to James Hardie Acoustic Systems for details.

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2 PRODUCTS

Materials

2.1 HOMERAB PRE-CLADDING

Hardie™ HomeRAB™ Pre-Cladding, 4.5mm thick, manufactured from treated cellulose fibre, Portland cement, sand and water, cured by high pressure autoclaving manufactured to AS/NZS 2908.2, face and edge sealed.

2.2 RAB BOARD

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

Components

2.3 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 20, Material selection, and NZBC E2/AS1, Table 21, Compatibility of materials in contact, for selection of suitable fixing materials and their compatibility with other materials.

Zone	Fixings Material
Zone D, Zone E	Grade 316 Stainless
Zone B, Zone C	Hot-dipped galvanized or Grade 316 Stainless

2.4 GALVANIZED NAILS

Hot-dip galvanized nails to James Hardie® requirements. Refer to SELECTIONS.

2.5 STAINLESS STEEL NAILS

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

2.6 HORIZONTAL FLASHING - HOMERAB™ PRE-CLADDING

HomeRAB™ 4.5 Horizontal Flashing (uPVC) for horizontal joints.

2.7 HORIZONTAL FLASHING - RAB™ BOARD

RAB™ uPVC Horizontal Flashing for horizontal joints.

Accessories

2.8 SEALING TAPE - VERTICAL JOINTS/CORNER JOINTS

Thermakraft™ Premium Jointing Tape.

2.9 FLASHING TAPE / WINDOW FLASHING TAPE

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

3 EXECUTION

Conditions

3.1 STORAGE

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

3.2 HANDLING

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

3.3 PRE-INSTALLATION REQUIREMENTS

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

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3.4 FRAMING - RAB™ BOARD

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

3.5 BRACING SYSTEM RAB™ BOARD

Fix sheets in accordance with the Bracing Design Manual by James Hardie®. Refer to the bracing manual bracing table for specific requirements.

Application - generally

3.6 PENETRATIONS AND FLASHINGS

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

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

3.7 CUT EDGES

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

Install Rigid Air Barriers

3.8 SHEET LAYOUT

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

3.9 VERTICAL JOINTS

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

3.10 HORIZONTAL JOINTS

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

3.11 EXTERNAL AND INTERNAL CORNERS

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

3.12 FIXING SHEETS

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

3.13 PENETRATIONS

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

3.14 OPENINGS

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

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3.15 FLASHINGS AND JUNCTIONS

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

3.16 AT SOFFITS

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

3.17 BASE CLEARANCES

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

Completion

3.18 ROUTINE CLEANING

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

3.19 REPLACE

Replace all damaged or marked elements.

3.20 LEAVE

Leave work to the standard required for following procedures.

3.21 REMOVE

Remove debris, unused materials and elements from the site.

3.22 BRACING ELEMENT HOLD DOWN - CONCRETE FLOOR

Ramset bracing anchor kit Concrete or GIB Handibrac® with 15kN anchor to suit brace type.

4 SELECTIONS

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

4.1 RAB™ BOARD - BRACING SYSTEMS

Refer to Bracing Design Manual by James Hardie®. For bracing element location refer to drawn documentation.

4.2 RAB™ BOARD - RIGID AIR BARRIER 6MM

Brand/type:	Hardie™ RAB™ Board
Sheet length:	~
Sheet thickness:	6mm
Nails:	~
Primer:	~to exposed cut edges

4.3 HOMERAB™ PRE-CLADDING - RIGID AIR BARRIER 4.5MM

Brand/type:	Hardie™ HomeRAB™ Pre-Cladding
Sheet length	~
Sheet thickness:	4.5mm
Nails:	~
Primer:	~to exposed cut edges

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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

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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

- 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.

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.

2.3 INTERNAL & EXTERNAL CORNER MOULDS

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

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2.4 EAVES MOULDS

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

Components

2.5 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.

2.6 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING

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

2.7 FLASHINGS

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

Fixings

2.8 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.

2.9 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.

2.10 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.

2.11 MOULDING FIXINGS

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

2.12 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.

2.13 SEALANT

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

Timber coatings

2.14 STAIN FINISH

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

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

3.2 ROUTINE MATTERS

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

3.3 PRE-INSTALLATION REQUIREMENTS

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

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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.

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.

Installation

3.9 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.

3.10 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.

3.11 INSTALL FLASHINGS

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

3.12 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.

3.13 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.

3.14 FIX WEATHERBOARDS - STRUCTURAL CAVITY BATTEN

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

3.15 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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3.16 FIX CORNER MOULDS

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

3.17 FIX EAVES MOULDS

Nail fix eaves moulds to weatherboards.

3.18 FINISHING - PROTECTOR STAIN FINISH

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

Completion

3.19 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:	Refer to details
Supplier:	Abodo Wood
Profile:	WB18 profile
Series/Grade:	Archtiectural Series
Face finish:	-
Installation type:	Refer manufacturers specification
Fixings:	Refer manufacturers specification
Board joint type:	Batten over joint

4.3 ABODO VULCAN EAVES MOULD

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

Components

4.4 CAVITY BATTENS - STRUCTURALLY FIXED

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

4.5 CAVITY CLOSER/VERMIN-PROOFING

Type:	Sigma cavity closure
Material:	Aluminium

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4.6 FLASHING

Type:	Refer to drawings
Material:	Aluminium

Coatings

4.7 COATING - STAIN

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

Sealant

4.8 SEALANT

Type/Brand:	Sikaflex 11FC or equivalent

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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.

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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)
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.

2 PRODUCTS

Materials

2.1 RIGID AIR BARRIERS

Refer to section 4171HR JAMES HARDIE RIGID AIR BARRIERS.

2.2 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.

2.3 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING

Perforated uPVC, with upstands.

2.4 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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2.5 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

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

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

Refer to SELECTIONS.

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

Over flexible wall underlay:	65mm x 2.8mm RounDrive ring shank nail
Over 9mm RAB™ Board or where building height >10m:	75mm x 3.06mm RounDrive ring shank nail

Refer to SELECTIONS.

2.8 NAIL - AXON™ PANEL FIXING TO HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN

Axon™ Panel fixings to Hardie™ CLD™ Structural Cavity Batten, as follows:

For wind pressure up to 3.2kPa:

- stainless steel C-25 'T' Head brad nail.

2.9 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.

2.10 NAIL - AXON™ PANEL DIRECT FIX

40mm x 2.8mm Hardie™Flex nails.

2.11 NAIL - AXENT™ TRIM

40mm brad nails.

Accessories

2.12 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.

2.13 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.

2.14 ALUMINIUM ACCESSORIES

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

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2.15 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.

2.16 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.

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 - generally

3.6 RIGID AIR BARRIER

Refer to 4171HR JAMES HARDIE RIGID AIR BARRIERS.

3.7 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.

3.8 PENETRATIONS AND FLASHINGS

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

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

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Install Axon™ Panel cladding

3.9 PANEL LAYOUT

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

3.10 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.

3.11 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.

3.12 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.

3.13 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.

3.14 VERTICAL JOINT

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

3.15 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.

3.16 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.

3.17 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.

3.18 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.

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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.

3.19 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.

3.20 FINISHING

Refer to painting section/s for protective coating system.

Completion

3.21 REPLACE

Replace all damaged or marked elements.

3.22 LEAVE

Leave work to the standard required for following procedures.

3.23 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
Fastener type:	40mm x 2.8mm Hardie™ Flex nails
Fastener finish:	304 Stainless seal and paint
Fixing centres:	800mm

4.2 HARDIE™ CLD™ STRUCTURAL CAVITY BATTENS - TIMBER FRAME

Brand/type:	Hardie™ CLD™ Structural Cavity batten
Thickness:	19mm
Fastener type:	65mm x 2.8mm RounDrive ring shank nails
Fastener finish:	Hot-dipped galvanized
Adhesive:	Sika Sikaflex 11FC

4.3 JAMES HARDIE AXON™ PANELS - SHEET CLADDING PANELS

Brand/type:	James Hardie Axon Panel Smooth
Thickness:	9mm
Fastener type:	316 Stainless Steel
Fastener finish:	75mm x 3.15mm Hardie™Flex nail over rigid air barrier
External corner type:	Hardie™ Axent™ Trim

4.4 JAMES HARDIE AXENT™ TRIM

Brand/type:	Hardie™ Axent™ Trim
Thickness:	19mm
Width:	45mm

Finishing

4.5 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 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

1.2 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

1.3 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.

1.4 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 standard form in the general section 1237WA WARRANTY AGREEMENT)

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- Commence the warranty from the date of purchase

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 NO SUBSTITUTIONS

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

1.7 INFORMATION FOR OPERATION AND MAINTENANCE

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

James Hardie® Eaves and Soffit Care and Maintenance

Performance

1.8 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.

1.9 PERFORMANCE - EXTRA HIGH WIND ZONE

The design wind speeds/zones are to NZS 3604, up to and including Extra High Wind Zone. Eaves and Soffits Installation Manual by James Hardie® requirements are suitable for these conditions.

1.10 PERFORMANCE - SPECIFIC DESIGN - WIND

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

2 PRODUCTS

Materials

2.1 HARDIE™ FLEX EAVES LINING

James Hardie® Hardie™ Flex Eaves Lining 4.5mm and 6mm 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.

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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.

Components - Hardie™ Flex Eaves Lining

2.7 SOFFIT JOINTERS AND MOULDS
Extruded uPVC jointer, capping and scotia mould.

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

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

2.10 ADHESIVE
Refer to SELECTIONS.

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

2.12 POLYPROPYLENE TAPE
Polypropylene tape, 30mm minimum width.

Components - Hardie™ Groove Soffit Lining

2.13 SCOTIA MOULD
Extruded uPVC two piece scotia mould

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

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

2.16 ADHESIVE
Refer to SELECTIONS.

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

2.18 BASE COMPOUND
Hardie™ Base Coat.

Components - Villaboard™ Soffit Lining

2.19 SOFFIT JOINTERS
Extruded uPVC jointer.

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

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

2.22 POLYPROPYLENE TAPE
Polypropylene tape, 30mm minimum width.

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2.23 CONTROL JOINT
Refer to SELECTIONS.

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

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

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

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

2.28 SEALER
Multiplast resin by Plaster systems

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

2.30 JOINT REINFORCING TAPE
52mm wide perforated paper tape.

2.31 BEDDING COMPOUND
Hardie™ Base Coat compound powder.

2.32 FINISHING COMPOUND
Hardie™ Top Coat topping compound premixed.

Components - General

2.33 FLEXIBLE JOINT SEALANT
Refer to SELECTIONS.

Accessories

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

3 EXECUTION

Conditions

Installation/application

3.1 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.

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

Application - general

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

3.4 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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3.5 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.

3.6 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.

3.7 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.

3.8 INSTALL HARDIE™ FLEX EAVES LINING

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

3.9 SEAL EDGES

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

3.10 BUTT JOINT

Paint sheet edges prior to installation.

3.11 CONTROL JOINT

Install control joint to James Hardie® installation manual requirements.

3.12 FASTENER - SIZE AND LAYOUT

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

3.13 INSTALL FASTFIX FASTENERS

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

3.14 ADHESIVE

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

3.15 SEALANTS

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

3.16 FINISHING OVER DRIVEN FASTENERS

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

3.17 PAINTING

Refer to painting section/s for protective coating system.

Completion

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

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Materials

4.1 HARDIE™ FLEX EAVES LINING

Location:	Refer drawings
Brand/type:	James Hardie® Hardie™ Flex Eaves Lining
Thickness:	4.5mm
Width:	1200
Fixing Method:	Hardie Flex nails
Fixing type:	Stainless nail
Joint detail:	Express joint with inseal tape10mm max gap

Painting

4.2 PAINTING

Refer to painting section/s for details.



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4241M METALCRAFT ROOFING PROFILED CLADDING

1 GENERAL

This section relates to the supply and fixing of **Metalcraft Roofing** profiled cladding complete with accessories.
It includes:

- Corrugated cladding profile

1.1 RELATED WORK

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

Refer to 1213 for SELECTIONS.

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:

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

Documents

1.3 DOCUMENTS

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

NZBC C/VM2	Protection from fire
NZBC E2/AS1	External moisture
AS/NZS 1170.2:2011	Structural design actions - Wind actions
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
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
NZS 3602	Timber and wood-based products for use in building
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's and supplier's documents relating to this part of the work:

Metalcraft Roofing Metdek500 product literature
Metalcraft Roofing Metdek855 product literature
Metalcraft Roofing Metrib760 product literature
Metalcraft Roofing MC760 product literature
Metalcraft Roofing T-Rib product literature
Metalcraft Roofing MC1000+700 product literature
Metalcraft Roofing Metcom7 product literature
Metalcraft Roofing Metcom930+700 product literature
Metalcraft Roofing Metcom965 product literature
Metalcraft Roofing Kahu® product literature
Metalcraft Roofing Metclad850 product literature
Metalcraft Roofing Corrugate product literature
Metalcraft Roofing Bevelback Weatherboard product literature
Metalcraft Roofing Alsynite Topglass® product literature

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Manufacturer/supplier contact details

Company:	**Metalcraft Roofing**
Web:	www.metalcraftgroup.co.nz
Email:	technical@metalcraftroofing.co.nz
Telephone:	09 274 0408

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years	Failure of coating adhesion (manufacturer's standard warranty)
30 years	Weatherproofing failure caused by material penetration as a result of corrosion (manufacturer's standard warranty)

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

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years	for workmanship

- Provide this warranty on the material manufacturers standard warranty form.
- Commence the warranty from the date of date of completion of installation.

Include a copy of the Metalcraft Roofing maintenance requirements with the warranty.

Requirements

1.7 NO SUBSTITUTIONS

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

1.8 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

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
- Producer Statement - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.

Performance - General

1.10 CO-ORDINATE

Co-ordinate to ensure substrate and preparatory work is complete and other work programmed in the order required for access and completion of the wall cladding.

1.11 PERFORMANCE

Accept responsibility for the weather-tight performance of the completed wall cladding system, including all penetrations through the walls and junctions with other cladding materials and parapets.

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Performance - Fire

1.12 EXTERNAL FIRE SPREAD - NON-COMBUSTIBLE MATERIAL

Zincalume®, COLORSTEEL® Maxam™, COLORSTEEL® Maxam™ Dridex® and COLORSTEEL Altimate™ are non-combustible materials with a surface finish no more than 1mm in thickness applied directly to the non-combustible substrate.

1.13 EXTERNAL FIRE SPREAD - CLADDING MATERIAL, CLASSIFICATION

COLORSTEEL® Maxam™ and COLORSTEEL® Maxam™ Dridex® have 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).

1.14 SURFACE FIRE PROPERTIES FOR LININGS

Zincalume®, COLORSTEEL® Maxam™, COLORSTEEL® Maxam™ Dridex® and COLORSTEEL® Altimate™ have been tested to ISO 5660.1 & ISO 5660.2 and have been assigned the following Group Numbers in accordance with Appendix A, NZBC C/VM2:

Zincalume®	Group Number 1-S
COLORSTEEL® Maxam™	Group Number 1-S
COLORSTEEL® Maxam™ Dridex®	Group Number 1-S
COLORSTEEL Altimate®	Group Number 1-S

2 PRODUCTS

Materials

2.1 EXTERIOR CAVITY WALL BATTENS - WITH DRAINED CAVITY

Proprietary horizontal cavity batten system.

2.2 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING

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

2.3 STEEL - TYPE AM COATING (ALUMINIUM/ZINC/MAGNESIUM ALLOY), PREPAINTED

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

Fixings

2.4 FASTENERS GENERALLY

Minimum Class 4 durability and not less than the cladding material being fixed. Screw fasteners to be head stamped identifying the manufacturer and class.

2.5 FIXING SCREWS

To AS 3566. Screws appropriate to the roofing material and the supporting structure, and wind load as required by Metalcraft Roofing, and with a durability not less than the material fixed.

2.6 RIVETS

Sealed aluminium, minimum diameter 4.8mm.

2.7 FLASHINGS GENERALLY

To NZBC E2/AS1, 4.0, Flashings.

Formable grade 0.55 BMT for galvanized, Type AZ or Type AM - coated and pre-painted steel and 0.90 BMT for aluminium, to the same standards as the profiled sheets, notched where across profile or provided with a soft edge.

2.8 WALL AND PARAPET FLASHINGS

Supplied by Metalcraft Roofing to match or to suit the cladding.

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Accessories

2.9 UNDERLAY AND REFLECTIVE FOIL

Refer to 4161 UNDERLAYS, FOIL AND DPC.

2.10 SEALANT

Neutral curing silicone or polymer sealant as required by Metalcraft Roofing and used as directed.

2.11 CLOSURE STRIPS

Polyurethane profiled closed cell foam strips to fit the sheet profile.

Brand:	Ecofoam
Profile:	To suit selected cladding profile

3 EXECUTION

Conditions

3.1 INSPECTION

Inspect the wall framing and supporting structure to ensure that it is complete and fully braced ready for cladding and free from any misalignments or protrusions that could damage the cladding.

3.2 FRAMING TIMBER MOISTURE

When continuous metal cladding runs along a long continuous timber member and is directly fixed to it, the timbers equilibrium moisture content (EMC) to be 18% or less. For flashings in this situation (sometimes called transverse flashings) the framing EMC to be maximum 16%, and preferably as low as 12%. Transverse flashings can be temporarily tacked in place and final fixing done when moisture content is acceptable.

3.3 STORAGE

Take delivery of and accept packs of cladding dry and undamaged on delivery. Reject all damaged material. Store on a level firm base clear of the ground, with packs well ventilated and completely protected from weather and damage. Do not allow moisture to build up between sheets.

3.4 HANDLING

Avoid distortion and contact with damaging substances, including cement. Do not drag sheets across each other or other materials. Protect edges and surface finishes from damage. Use soft, flat sole shoes when fixing and for all other work on the wall.

3.5 SEPARATION

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

Application

3.6 FIX INSULATION

Refer to thermal insulation sections.

3.7 VERTICAL SET-OUT

Set cladding to vertical plumb lines and maintain verticality. Carefully set out to allow cover flashings of equal width at the ends of the building. Lay sheets with side laps away from the line of sight ensuring ends of sheets are true to line. Check during fixing to eliminate creep or spread and to keep fastenings in line. Ensure all exposed fastenings are set to a line.

3.8 FORMING

Form stop-ends and downturns to Metalcraft Roofing recommendations.

3.9 END LAPS

End laps are not recommended, except where specifically detailed to Metalcraft Roofing requirements.

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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

Roof fixing and jointing to conform with Metalcraft Roofing requirements for thermal movement.

3.12 FIXING GENERALLY

Install and fix in accordance with the Metalcraft Roofing installation manual and the NZMRM CoP and to Metalcraft Roofing required fixing patterns and details for each area of the building roofing. Use only screws as required by Metalcraft Roofing. Paint colour matched fixings and accessories before installation.

3.13 WALL UNDERLAYS

Ensure that the appropriate wall underlays have been installed and fixed correctly, before proceeding with installation of the cladding.

3.14 INSTALL DRAINED CAVITY - HORIZONTAL PROPRIETARY CAVITY BATTEN SYSTEM

Drained cavity to NZBC E2/AS1, 9.0 **Wall claddings**, where required. Fix horizontal proprietary cavity battens to wall framing studs in accordance with manufacturer's requirements.

3.15 PENETRATIONS

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

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

3.16 MARKING AND CUTTING

Cut only by shearing tools. Do not use black lead pencils for marking Zincalume®, Colorsteel® products. Use ink pen, chalk line or coloured pencil for marking cladding sheets prior to cutting.

3.17 FIX SHEETS

Fix sheets in place using the fastening system required by Metalcraft Roofing for specified profiles, making due allowance for dynamic local wind pressures on the building and thermal movement in the sheet.

Screw-fixed cladding to be screwed through pans.

3.18 FIX FLASHINGS AND CAPPINGS

Flash parapets, walls and penetrations, cap corners and edges to detail in Metalcraft Roofing installation manual and to the NZMRM CoP and Metalcraft Roofing requirements. Cut accurately and fix using sealant and rivets/ screws to detail to form a weatherproof cover. Ensure flashings are designed and installed to avoid water ponding.

Completion

3.19 REPLACE

Replace damaged or marked elements. Do not attempt to repair coatings by applying colour match paint to pre-finished surfaces.

3.20 LEAVE

Leave this work complete with all necessary flashing and capping all properly installed as the work proceeds so the finished cladding is completely weathertight.

3.21 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

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

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Cladding - corrugate profile

4.1 METALCRAFT - CORRUGATE PROFILE CLADDING

Location:	Refer to drawings
Manufacturer:	Metalcraft Roofing
Profile:	Corrugate
Dimensions:	Sheet width 851mm, cover 760mm, rib height 18mm, and roll formed to any length
BMT/material:	0.55mm Steel
Coating system:	COLORSTEEL® Maxam™
Coating colour:	Sandstone
Batten material:	Timber
Fixings:	Class 4 12G x 55mm or 12G x 65mm with load spreading washer

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4311M METALCRAFT PROFILED ROOFING

1 GENERAL

This section relates to the supply and fixing of Metalcraft Roofing Ltd profiled roofing complete with accessories.

It includes:

- Trough section roofing profiles
- Asymmetrical rib roofing profiles
- Corrugated roofing profile
- Translucent roofing

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
NZMRM	New Zealand Metal Roofing Manufacturers Inc

Documents

1.3 DOCUMENTS

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

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 1170.2:2011	Structural design actions - Wind actions
AS 1397	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
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
NZS 3604	Timber-framed buildings
AS 4256.3	Plastic roof and wall cladding materials, Glass fibre reinforced polyester
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:

Metalcraft Roofing Metdek 500 product literature
Metalcraft Roofing Metdek 855 product literature
Metalcraft Roofing Metrib 760 product literature
Metalcraft Roofing MC760 product literature
Metalcraft Roofing T-Rib product literature
Metalcraft Roofing MC1000 product literature
Metalcraft Roofing Metcom 7 product literature
Metalcraft Roofing Metcom 930 product literature
Metalcraft Roofing Metcom 965 product literature
Metalcraft Roofing Kahu® product literature

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Metalcraft Roofing Corrugate product literature
Metalcraft Roofing Building Product Information Sheet
COLORSTEEL® Maintenance Recommendations
Alsynite One Translucent Roofing Catalogue
Alsynite One Fibreglass Sheeting BPIR

Manufacturer/supplier contact details

Company:	Metalcraft Roofing Ltd
Web:	www.metalcraftgroup.co.nz
Email:	technical@metalcraftroofing.co.nz
Telephone:	09 274 0408

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER - METALCRAFT ROOFING

Provide a material manufacturer/supplier warranty:

18 years	for failure of coating adhesion
50 years	for weatherproofing by material penetration

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

Refer to the general section 1237 WARRANTIES for additional requirements.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years	for installation

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 QUALIFICATIONS GENERALLY

Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.8 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

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

1.9 NO SUBSTITUTIONS

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

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:

- COLORSTEEL® Maintenance Recommendations

Provide this information prior to practical completion.

Compliance information

1.11 COMPLIANCE - PROPOSED ALTERNATIVE SOLUTION

Metalcraft Roofing trough roofing profiles Metdek 500 and Metdek 855 are presented as an alternative solution for:

NZBC Clause E2-External moisture

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Performance: E2.3.1 Roofs must shed precipitated moisture.
E2.3.2 Roofs must prevent the penetration of water that could cause undue dampness, damage to building elements, or both.

Proposed alternative solution is supported by:

- Metalcraft Roofing Ltd standard details and installation guidelines
- NZMRM CoP incorporates trough sections up to 250mm between crests
- In-service history and previously accepted Alternative Solution

Performance

1.12 DESIGN PARAMETERS WIND - NON SPECIFIC DESIGN

The design wind pressures are to NZS 3604, table 5.4.

Refer to general section 1220 PROJECT for details.

1.13 DRINKING WATER

Roofing for collecting potable water to NZBC G12/AS1.

2 PRODUCTS

Materials

2.1 STEEL - TYPE AM COATING (ALUMINIUM/ZINC/MAGNESIUM ALLOY), PREPAINTED

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

Fixings

2.2 FASTENERS GENERALLY

Fixings and fasteners are to be compatible with all materials and have a durability no less than the material being fastened.

2.3 FIXING SCREWS

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

2.4 RIVETS

Sealed aluminium, minimum diameter 4.0mm.

Components

2.5 FLASHINGS GENERALLY

To NZBC E2/AS1, 4.0 Flashings.

Formable grade 0.55 BMT or 0.75 BMT for steel and 0.90 BMT for aluminium. Flashings coated to the same standard as the roofing sheets, notched where across profile or provided with a soft edge. Refer to SELECTIONS.

2.6 BOOT FLASHINGS

EPDM proprietary boot flashing designed to weatherproof cylindrical penetrations.

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 cure silicone or MS polymer sealant.

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2.10 CLOSURE STRIPS

Polyurethane profiled closed cell foam strips to fit the sheet profile.

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:	18% maximum

3.4 SEPARATION

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

Installation/application

3.5 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.6 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.

3.7 END LAPS

End laps are not recommended.

3.8 THERMAL MOVEMENT

Provide for thermal expansion to NZMRM CoP.

3.9 FIXING GENERALLY

Install and fix in accordance with NZBC E2/AS1, NZMRM CoP, and Metalcraft Roofing required fixing patterns and details for each area of the roof. Paint colour matched fixings and accessories before installation.

3.10 MARKING AND CUTTING

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

3.11 FIXING SHEETS

Fix sheets in place using the fastening system required by Metalcraft Roofing for specified profiles, making due allowance for dynamic local wind pressures on the building and thermal movement in the sheet.

Timber purlins:	Screw minimum 35mm embedment into structure
Steel purlins:	Screw minimum 3 threads beyond drill point

3.12 STOP ENDS AND DOWNTURNS

With purpose made tools, form stop-ends at the upper end of sheets. Form downturns at the gutter line where the roof pitch is less than 8 degrees.



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3.13 INSTALL FLASHINGS

Flash roof to parapets, walls and penetrations to detail. Where no detail is provided, flash to NZBC E2/AS1, NZMRM CoP, and Metalcraft Roofing details. Cut accurately and fix using sealant and rivets to detail and to Metalcraft Roofing requirements to form a weatherproof cover. For visible flashings, plan joints/junction to take account of the aesthetic requirements.

3.14 USE OF SEALANTS

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

3.15 FLASHING PENETRATIONS

Flash all penetrations through the roof. Fit proprietary boot flashings to Metalcraft Roofing requirements, 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

3.16 COMPLETION MATTERS

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

4 SELECTIONS

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

Roofing - corrugate profile

4.1 METALCRAFT - CORRUGATE PROFILE ROOFING

Location:	Refer to drawings
Supplier:	Metalcraft Roofing Ltd
Profile:	Corrugate Straight
Dimensions:	Sheet width 851mm, cover 760mm, rib height 18mm
Roof pitch:	35°
BMT/material:	0.40mm Steel
Coating system:	COLORSTEEL® Maxam®
Coating colour:	Sandstone
Purlin material:	Timber
Fixings:	Class 4 12G galvanized screws

Accessories

4.2 FLASHINGS - GENERALLY

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

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4520 ALUMINIUM WINDOWS & DOORS

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

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

1.2 CERTIFICATION

Provide documentation that the windows and doors comply with NZS 4211 and safety glass complies with NZS 4223.3.

1.3 WIND LOADINGS

Refer to section 1212 COMPLIANCE for wind zone.

2 PRODUCTS

2.1 WINDOW AND DOOR REVEALS

As selected, manufactured to comply with NZS 4211. Timber jamb liners to NZS 3602.

2.2 FLASHINGS

To NZBC E2/AS1, 9.1.9 Windows and doors, and as required.

2.3 POWDER COATING FINISH

To Window & Glass Association NZ: Powder Coating Quality Assurance System. All finished surfaces to show uniformity of gloss and colour (to match sample) free of all coating defects.

2.4 SEALANT, GLAZING TAPE AND GASKETS

To the window manufacturer's requirements.

2.5 FIXINGS

Ensure fixings and bracketing are compatible with aluminium. Do not use electroplated zinc fasteners or brass fastenings.

3 EXECUTION

3.1 OPENING PREPARATION

Confirm framing openings (including jamb battens for direct fix cladding) on site for dimension, plumb and straightness prior to fabrication or ordering of aluminium joinery. Prepare and trim to Window & Glass Association NZ: Guide to Window Installation requirements. For openings over 600mm wide on cavity construction provide sill support bars.

3.2 EXECUTION GENERALLY

To NZBC E2/VM1 and NZBC E2/AS1. Install to the Window & Glass Association NZ: Guide to Window Installation requirements.

3.3 HANDLING

Avoid distortion of elements during transit, handling and storage. Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement. Do not deliver to site any elements which cannot be immediately unloaded into suitable conditions of storage.

3.4 CORROSION PROTECTION

Seal or suitably coat cut ends and holes drilled in aluminium before the frames are installed. Before fixing, apply bituminous coatings, slips or underlays between dissimilar metals in contact, or aluminium in contact with concrete.

3.5 FIX FRAMES

Fix frames rigidly in place without distortion, to the window manufacturer's requirements and to NZBC E2/AS1, paragraph 9.1.9.10, plumb, true to line and face, weathertight and with all openings operating freely.

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3.6 DRAINAGE

Anti-condensation channels to sills. All sills to sashes and fixed lights to incorporate positive drainage to the exterior.

3.7 GLAZING INSTALLATION

All glass held in aluminium beads and black PVC gaskets.

3.8 SAFETY GLASS INSTALLATION

Use in doors, sidelight panels, low level windows and all other locations to comply with NZS 4223.3.

3.9 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 on head flashings to match window finish.

3.10 SEAL FRAMES ON SITE

Seal frames to each other and to adjoining structure and finishes, all as required by the window manufacturer and to make the installation weathertight. Provide a continuous internal air seal between reveals and framing, using sealant over a backing rod.

3.11 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. Permanent manifestations, if required, to NZS 4223.3, 2.2 Manifestation (making glass visible).

3.12 CLEAN GLASS AND FRAMES

Clean off or remove glass indicators at completion of the building. Clean glass inside and out to a shining finish. Clean down both sides of window and door frames using the methods required by the window and door manufacturer.



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4521AR APL RESIDENTIAL ALUMINIUM WINDOWS & DOORS

1 GENERAL

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

1.1 RELATED WORK

Refer to appropriate AGP glazing sections for glass types.

~

1.2 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

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

Documents

1.3 DOCUMENTS

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

NZBC E2/AS1	External moisture provisions for timber-framed buildings up to 10 m in height
NZBC F4/AS1	Safety from falling
NZBC G4/AS1	Ventilation of buildings
NZBC H1/AS1	Energy efficiency for all housing and buildings up to 300m²
NZBC H1/AS2	Energy efficiency for buildings greater than 300m²
NZBC H1/VM1	Energy efficiency for all housing and buildings up to 300m²
NZBC H1/VM2	Energy efficiency for buildings greater than 300m²
AS/NZS 1734	Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate
AS/NZS 1866	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
NZS 4211	Specification for performance of windows
NZS 4223.3	Glazing in buildings - Human impact safety requirements
AS/NZS 4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
BS EN 673	Glass in building - Determination of thermal transmittance (U-value) - Calculation method
AAMA 2603	Voluntary specification, performance requirements, and test procedures for pigmented organic coatings on aluminium extrusions and panels (with coil coating appendix)
AAMA 2604	Voluntary specification, performance requirements and test procedures for high performance organic coatings on aluminium extrusions and panels
AAMA 2605	Voluntary specification, performance requirements and test procedures for superior performing organic coatings on aluminium extrusions and panels
ISO 10077-1	Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - General
ISO 10077-2	Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Numerical method for frames

Window & Glass Association NZ (WGANZ) documents:

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

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

US Federal Specification:

TT-S-001543A	Sealing compound, silicone rubber base (for caulking, sealing and glazing in buildings and other structures)
TT-S-00230C	Sealing compound, elastomeric type, single component (for caulking, sealing and glazing in buildings and other structures)

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

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

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

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

Manufacturer/supplier contact details

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

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

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

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

Refer to the general section 1237 WARRANTIES for additional requirements.

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1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years: For installation

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

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

Compliance Information

1.7 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.

1.8 COMPLIANCE - BRANZ APPRAISAL

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

Performance

1.9 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.

1.10 THERMAL PERFORMANCE - WINDOWS & GLAZED DOORS, HOUSING ONLY

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

2 PRODUCTS

2.1 WINDOWS

Refer to SELECTIONS.

2.2 DOORS

Refer to SELECTIONS.

Materials

2.3 ALUMINIUM EXTRUSIONS

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

2.4 ALUMINIUM SHEET AND STRIP

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

Alloy designation: 5251 - H16 or 5005 - H16

2.5 STAINLESS STEEL SHEET AND STRIP

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

2.6 GLASS

Refer to the glazing section for glass types and installation.

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Reveals

2.7 REVEALS - TIMBER PAINTED

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

Flashings

2.8 FLASHINGS GENERALLY

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

Components for installation - cavity systems

2.9 CENTRAFIX SILL SUPPORT BAR

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

Components

2.10 GLAZING GASKETS

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

2.11 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.

2.12 SAFETY STAYS

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

2.13 FIXING BRACKETS

Designed by manufacturer to specific design.

2.14 WEATHERING/INSTALLATION SEALANT

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

Finishes

2.15 DURATEC POWDER COATED ALUMINIUM

High-performance polyester powder coating in accordance with WGANZ PQAS and AAMA 2604. 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/application

3.4 INSTALLATION GENERALLY

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

Fabrication

3.5 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.

3.6 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.

Installation - windows and doors

3.7 SUPPLY OF FIXINGS

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

3.8 EXPOSED FIXINGS AND FASTENINGS

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

3.9 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.

3.10 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.

3.11 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.

3.12 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.

3.13 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.14 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.

3.15 INSTALL FLASHINGS

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

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

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

3.16 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.

3.17 FIX HARDWARE

Fix all sash and door hardware and furniture as scheduled.

Application - jointing and sealing

3.18 SEAL FRAMES ON SITE

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

3.19 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.

3.20 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.

3.21 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.

3.22 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.

3.23 SAFETY

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

Completion & Commissioning

3.24 COMPLETION MATTERS

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

4 SELECTIONS

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

4.1 SUPPLY AND INSTALLATION

Supply and installation of the specified APL aluminium joinery.

Supply:	By fabricator
Installation:	By main contractor

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Performance

4.2 THERMAL PERFORMANCE - WINDOWS & DOORS

Window /Door Number:	Construction R-value:
Centrafix	0.50
Metro Series	0.47

Finishes - Powder Coating

4.3 DURATEC - POWDER COATING FINISH

Type: Polyester organic powder coating
System integrity: Minimum 20 years film integrity, up to 20 years colour integrity
Colour: Refer to elevations
Finish: Refer to elevations

Glazing

4.4 GLASS

Type/thickness: Refer to glazing section/s for type and thickness.

Hardware

4.5 HARDWARE FINISH

Finish: Powder coat
Colour: TBC

Flashings and Sealant

4.6 FLASHINGS

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

4.7 WEATHERING SEALANT

Type: 1-part polyurethane moisture curing, elastic joint sealant
Colour: MS Sealant

Reveals

4.8 TIMBER JAMB REVEALS

Timber species: Radiata Pine
Grade/treatment: H3.1
Thickness: 25mm
Reveals: Refer to details

Window and door system - RESIDENTIAL SERIES

4.9 APL RESIDENTIAL AWNING WINDOW

Type: APL Residential Series
Frame type: Facing
Window No.: Refer to window schedule
Fastener range: Urbo Helix

Window and door system - METRO SERIES

4.10 APL METRO SERIES THERMAL HEART SLIDING DOOR

Type: APL Metro Series
Window No.: Refer to door schedule

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Window and door system - Metro Series ThermalHEART with Centrafix

4.11 APL METRO SERIES THERMALHEART WITH CENTRAFIX HINGED DOOR

Type:	APL Metro Series ThermalHEART® with Centrafix™
Door No.:	Refer to door schedule
Frame Type:	Facing
Exterior colour:	Refer to elevaitons

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4610 GLAZING

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

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

1.2 CERTIFICATION

If not supplied with windows, provide documentation that the safety glass complies with NZS 4223.3.

2 PRODUCTS

2.1 GLAZING TAPE

Pressure sensitive, self-adhesive vinyl foam tapes, selected to suit the glazing detail.

2.2 GLASS THICKNESS

As selected and to NZS 4223.1, NZS 4223.3, NZS 4223.4.

2.3 FLOAT GLASS

Clear ordinary annealed glass for general window glazing. Thickness as required by NZS 4223.1.

2.4 TOUGHENED GLASS

To NZS 4223.3.

Heat soaked toughened glass to NZS 4223.1, Appendix E required for critical areas (balustrades etc) to reduce inclusion failure.

2.5 INSULATED GLASS UNITS

As selected and to AS/NZS 4666. and NZS 4223.2

2.6 MIRROR GLASS

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

2.7 SETTING BLOCKS

Neoprene, 80-90 Shore A hardness, set at quarter points or to detail, at the base of glass panes.

3 EXECUTION

3.1 EXECUTION GENERALLY

To NZS 4223.1, and for human impact safety glazing to NZS 4223.3. Insulating glass units to AS/NZS 4666 and NZS 4223.2.

3.2 INSTALL GLASS TO ALUMINIUM FRAMES

Install glass to NZS4223.1.

- Bead glaze to Section 4 Glazing.
- Channel glaze to Section 4 Glazing, and Section 5 for Framed, Unframed, Partly Framed Glass Assemblies.

3.3 SAFETY GLASS INSTALLATION

Use in doors, sidelight panels, low level windows, bathrooms and all other locations to comply with NZS 4223.3.

3.4 INSTALL MIRRORS

Install mirrors as detailed. Seal to vanities and basins where required.

3.5 SAFETY

Indicate the presence of transparent glasses, with whiting, tape or signs compatible with the glass type. Do not apply indicators other than whiting to the glass surface. Permanent manifestations if required, to comply with NZS 4223.3, 2.2 Manifestation (making glass visible).

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3.6 CLEAN

Clean off or remove indicators at completion of the building. Clean glass inside and out to a shining finish.

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4710 THERMAL INSULATION

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

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

2 PRODUCTS

2.1 THERMAL INSULATING PADS

Rectangular insulating pads manufactured from fibreglass, polyester, wool or similar.

2.2 THERMAL INSULATING BLANKET

Roll form insulation blanket manufactured from fibreglass or polyester.

2.3 CELLULAR PLASTIC RIGID BOARD

Polystyrene foam board manufactured from fire retardant grade resin.

3 EXECUTION

Conditions

3.1 INSTALL INSULATION - GENERAL

Lay, install, fit and fix insulation without gaps, tucks, folds and over compaction to NZBC H1/AS1 or AS2 and insulation manufacturer's requirements. For all housing and buildings up to 300m install in accordance to NZS 4246 sections 5 Walls, 6 Ceilings & Roofs, 7 Underfloor - Suspended Framed Floors and 10 Concrete Slab-on-Ground Insulation, for residential light timber or steel framed buildings.

3.2 FIT THERMAL INSULATING PADS

Friction fit insulating pads in place to completely fill the whole of the cavities. Carefully scribe cut insulating pads slightly oversize to maintain friction fit to each other, to smaller spaces and around penetrations. Leave no gaps between, and maintain full thickness of the insulating pads over the whole of the installation. Do not cover vents.

3.3 FIT THERMAL INSULATING BLANKET

Install in ceiling/roof cavity and mid-floor cavity were specified Slightly oversize length for friction fit and tear by hand across pad and fill cavity. Tear to smaller pieces for smaller spaces and around penetrations. Leave no gaps between, and maintain full thickness of the insulating segments over the whole of the installation. Do not cover vents.

3.4 FIT CELLULAR PLASTIC RIGID BOARD

Friction fit board after roof and wall claddings have been installed. Cut oversize lengthways for a tight compression fit between framing. Leave no gaps between, and maintain full thickness of the insulating segments over the whole of the installation. Fit board between floor joists and timber framing using proprietary fixing clips. Ensure separation from electric cabling. Do not cover vents. Leave a 200mm clear gap around recessed light fittings and metal flues. In windy locations secure floor insulation with proprietary support brackets.

3.5 INSULATION CLEARANCES

Provide insulation clearances to NZS 4246 and for recessed luminaires AS/NZS 3000, 4.5.2.3. 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.

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5110 INTERIOR LININGS & TRIM

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 FRAMING MOISTURE CONTENT

Maximum allowable moisture content to NZS 3602, table 4 **Allowable moisture content…**.

1.2 PROTECT

Protect joinery, fittings and finishes already in place from water staining or damage from lining installation. Ensure building is weatherproof before lining work commences.

2 PRODUCTS

2.1 PLASTERBOARD

Gypsum plaster core encased in a durable face and backing paper formed for standard use, bracing use, fire rated use and water resistance use.

2.2 PLASTERBOARD ACCESSORIES

External angles:	Slim type 0.5mm galvanized steel.
Casing bead:	Slim type 0.5mm galvanized steel or PVC.
Cornice:	Plasterboard scotia type.
Nails:	Galvanized clouts 40mm x 2.5mm.
Screws:	40mm x 6 gauge zinc electro-plated bugle head gypsum drywall screws
Jointing compound & paper tape:	To the board manufacturer's requirements.
Adhesive:	Multi-purpose water based wallboard adhesive.

2.3 FIBRE CEMENT SHEET

Cellulose cement autoclaved sheets.

2.4 PLYWOOD

Appearance grade plywood sheet

2.5 NAILS

Zinc-plated steel, stainless steel and galvanized steel of pattern to suit location and to BRANZ BU 519: **Fasteners selection**.

2.6 INTERIOR FINISHING TRIM

Timber selection to NZS 3602, table 3 **Requirements for wood-based building components….** Profile as selected or to match existing. Jointer profiles to suit location.

3 EXECUTION

3.1 SUBSTRATE

To NZS 3604, section 8 **Walls**, section 10 **Roof framing**, section 12 **Interior linings**, section 13 **Ceilings**, and the standard required by the lining manufacturer's requirements. Ensure moisture content of timber framing is at or below specified levels.

3.2 CONFIRM LEVELS OF PLASTERBOARD FINISH

Before commencing work, confirm the surface finish assessment procedures necessary to ensure the specified levels of finish will be obtained. Provide levels of finish as laid down in AS/NZS 2589.

3.3 LINE PLASTERBOARD CEILINGS AND WALLS

Line walls and ceilings with plasterboard sheets, fastened to the plasterboard manufacturer's requirements.

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3.4 SPECIAL PLASTERBOARD LININGS

Line wet area walls with water resistant plasterboard sheets using adhesive and nail fixing to studs at centres to suit the surface finish. Form bracing panels using high density plasterboard sheets fixed with clout-washers and clouts and to conform to NZS 3604, 5.4 **Wall bracing design**, and 13.5 **Structural ceiling diaphragms**. Form sound rated panels following the sheet manufacturer's specifications and details for the required sound rating. Form fire rated panels following the sheet manufacturer's specifications and details for the required fire rating.

3.5 FIX PLASTERBOARD EXTERNAL ANGLES

Fix full length to external corners, with clouts at 100mm each side staggered.

3.6 FIX PLASTERBOARD CORNICE

Fix with adhesive and with joints scribe-fitted to the plasterboard manufacturer's requirements.

3.7 PLASTERBOARD JOINTING AND STOPPING

Fill joint recess with bedding compound, centre the paper tape, apply second coat of bedding compound followed by a coat of finishing compound. Allow to dry and lightly sand off. Fill nail holes and flush up external angles with two successive coats of bedding compound followed by a coat of finishing compound. Allow to dry and lightly sand off. All to the plasterboard manufacturer's requirements.

3.8 LEVELS OF FINISH

Provide levels of finish to standards laid down by AS/NZS 2589 as follows:

Level 4:	For thin coating finishes (paint) and surfaces receiving light texture or wall covering finishes
Level 5:	Where specifically detailed for surfaces receiving thin coating finishes (paint).

3.9 INSTALL FIBRE CEMENT SHEET LININGS

Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.

3.10 INSTALL PLYWOOD LININGS

Adhesive and nail to timber framing with jointing as detailed and to the panel manufacturer's requirements. Punch nails and fill to suit finish required.

3.11 INSTALL TRIM

Scribe and fit reveal linings to exterior timber joinery, architraves to interior joinery, skirtings to walls and timber beads to wall/ceiling junctions, and other trim as detailed.

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5113G GIB® PLASTERBOARD LININGS

1 GENERAL

This section relates to the supply and installation of Winstone Wallboards Ltd GIB® plasterboard linings to walls and ceilings.

1.1 ABBREVIATIONS AND DEFINITIONS

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

The following abbreviations apply specifically to this section:

BMT	Base metal thickness
FRR	Fire resistance rating
IIC	Impact insulation class
Rw	Weighted sound reduction index
STC	Sound transmission class

Documents

1.2 DOCUMENTS

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

BPS	Building Product Specifications
AS/NZS 2588	Gypsum plasterboard
AS 1530.4	Methods for fire tests on building materials, components and structures - Fire-resistance tests for elements of construction
ISO 5660.1	Reaction-to-fire tests – heat release, smoke production and mass lose rate – Heat release rate (cone calorimeter method)
ISO 5660.2	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Smoke production rate (dynamic measurement)
BRANZ Technical Paper P21	A wall bracing test and evaluation procedure (2010)

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

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

GIB® Noise Control Systems Specification and Installation Manual (September 2017)
GIB® Fire Rated Systems Specification and Installation Manual (September 2024)
GIB® Wet Area Systems Specification and Installation Manual (February 2021)
GIB Weatherline® Rigid Air Barrier Systems Design and Construction Manual (March 2021)
GIB Curveline® Specification and Installation Manual for Curved Walls and Ceilings (November 2025)
GIB Ezybrace® Systems Specification and Installation Manual (August 2016)
GIB Ezybrace® Bracing Design Software
GIB Ezybrace® for Light Steel Frame Systems (March 2017)
GIB® Tough Systems Design and Installation Guide (May 2025)
GIBFix® Framing System (August 2016)
GIB® Rondo® Metal Batten Systems Specification and Installation Manual (September 2024)
GIB® Site Guide
GIB® Product BPIS
GIB® Plasterboard Lining Systems Care and Maintenance
GIB® Product and System Warranty
BRANZ Appraisal 289 (2024) GIB® Fire Rated Systems
BRANZ Appraisal 394 (2025) GIB® Noise Control Systems
BRANZ Appraisal 427 (2021) GIB® Wet Area Systems
BRANZ Appraisal 928 (2021) GIB EzyBrace® Systems
BRANZ Appraisal 1048 (2025) GIB Weatherline® Rigid Air Barrier Systems

Manufacturer/supplier contact details

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

Warranties

1.4 NO SUBSTITUTIONS

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

1.5 QUALIFICATIONS GENERALLY

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 information

1.9 COMPLIANCE - BRANZ APPRAISAL 427

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

1.10 COMPLIANCE - BRANZ APPRAISAL 928

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

Performance

2 PRODUCTS

Materials

2.1 GIB® STANDARD PLASTERBOARD

Paper-bound gypsum plaster core sheet lining, manufactured to AS/NZS 2588. Refer to SELECTIONS.

2.2 GIB-COVE®

Paper-encased gypsum plaster cornice. Available in a range of profiles and sizes. Refer to SELECTIONS.

Components

2.3 GIB® RONDO® METAL BATTEN SYSTEM

Hot-dipped galvanized steel ceiling battens, batten joiners, fixing clips, and perimeter channel. Refer to SELECTIONS.

2.4 GIBFIX® ANGLES

45mm x 45mm metal angles.

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2.5 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.

2.6 TAPE ON TRIMS AND EDGES

GIB® Goldline™ tape-on trims

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

2.7 CONTROL JOINTS

GIB® Rondo® P35 control joints.

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

Accessories

2.8 ADHESIVE

Timber frame and/or steel frame:

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

2.9 JOINTING COMPOUND

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

2.10 JOINTING TAPE

GIB® jointing tape.

2.11 FIRE/ACOUSTIC SEALANT

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

2.12 GAP FILLER

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

3 EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS

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

3.2 ROUTINE MATTERS

Refer to 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 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 CONFIRM LEVELS OF PLASTERBOARD FINISH ACCEPTANCE

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

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

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

3.6 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

3.7 INSTALL CEILING BATTENS

Install to GIB® Rondo® Ceiling Batten Systems requirements.

3.8 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.

3.9 LINING WALLS AND CEILINGS GENERALLY

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

3.10 BOARD ORIENTATION

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

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3.11 INSTALL PLASTERBOARD LININGS - GIBFIX® FRAMED WALLS

Horizontally fixed sheets: Install sheets with vertical sheet end joints fully supported. Fix to framing at 300mm centres around the wall perimeter. Fix to intermediate framing at 300mm centres with fasteners or daubs of adhesive. Fix a single fastener each side of horizontal sheet edge joints where crossing a stud.

Vertically fixed sheets: Install full-height sheets with the sheet perimeter fully supported. Fix to framing at 300mm centres around the sheet perimeter. Fix to intermediate framing at 300mm centres with fasteners or daubs of adhesive.

At GIBFix® Angle junctions, fix the sheet to the stud side first, then to the angle-only side. Where the angle-only side must be fixed first, install additional clouts into the framing at maximum 500mm centres before lining. Place fasteners 12mm from paper-bound edges, 18mm from cut edges, and 50mm in each direction from corners. Touch fit adjacent sheets. Leave a 5mm-10mm gap at floor level.

3.12 FIX GIB® SLIM ANGLE METAL TRIM

Screw fix metal trims over plasterboard at 300mm centres.

Completion & Commissioning

3.13 COMPLETION MATTERS

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

4 SELECTIONS

GIB® Plasterboard

4.1 GIB® STANDARD SYSTEMS WALLS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Refer drawings	GIB® Standard plasterboard	10mm	4
Refer drawings	GIB® Standard plasterboard	13mm	4

4.2 GIB® PLASTERBOARD - GIBFIX® TIMBER FRAMED WALLS

Location: ~
Lining: ~
Fixing angles: GIBFix® Angle
Fasteners: ~
Adhesive: ~
Finish level: ~

4.3 GIB® STANDARD SYSTEMS CEILINGS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Refer drawings	GIB® Standard plasterboard	13mm	4

4.4 GIB® WATER RESISTANT SYSTEMS CEILINGS

Location	Plasterboard type / Lining requirements	Thickness	Finish Level
Refer drawings	GIB Aqualine® plasterboard	13mm	4

4.5 GIB® BRACING SYSTEMS

Refer to:

- GIB Ezybrace® Systems

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For bracing element location refer to drawn documentation.

Accessories

4.6 GIB® RONDO® CEILING BATTENS

Brand/type: GIB® Rondo® Ceiling battens

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5230 INTERIOR DOORS & FRAMES

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Trades people qualified or experienced in those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, and stairs).

2 PRODUCTS

2.1 DOORS GENERALLY

As selected. Refer to door schedule and detailed notes.

2.2 INTERNAL JOINERY FRAMES

Fabricate as detailed. Refer to door schedule and detailed notes.

2.3 DOOR HINGES

Type:	As per manufactures requirements. Contractor to confirm type and finishes with client prior to installation.

2.4 INTERIOR SLIDING DOOR GEAR

To suit door size and weight and as detailed.

2.5 DOOR HARDWARE

As selected. Contractor to confirm type and finishes with client prior to installation.

2.6 NAILS

Zinc-plated steel, stainless steel and galvanized steel of pattern to suit location and to BRANZ BU 519: **Fasteners selection**.

3 EXECUTION

3.1 PROTECT

Protect joinery, fittings and finishes already in place from water staining or damage from lining installation. Ensure building is weatherproof before lining work commences.

3.2 FIT INTERNAL JOINERY FRAMES

Wedge and rigidly fix in place without distortion, plumb, and true to line and face.

3.3 FIT HARDWARE

Fit hardware selected and provided, all in accordance with the hardware manufacturer's requirements.

3.4 CHECK

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

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5410 FLOORS

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

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

2 PRODUCTS

2.1 PARTICLEBOARD FLOORING

Flooring grade high density resin bonded.

2.2 PLYWOOD FLOORING

Structural plywood for bracing and floors, F11, CD grade, sanded face, H3.2 CCA.

2.3 TIMBER STRIP FLOORING

T&G profile, to NZBC B2/AS1, NZS 3602, table 1 **Requirements for wood-based building components…**, and to match existing or dressing grade to NZS 3631, section 4.4 **Dressing grade**.

2.4 NAIL FIXING PARTICLEBOARD OR PLYWOOD

Hand-driven 60 x 3.15mm hot-dipped galvanized csk annular grooved flooring nails, or power-driven 65 x 2.87mm hot-dipped galvanized annular grooved flooring nails, along with one-component polyurethane based construction adhesive or elastomeric construction adhesive. Increase nail lengths for flooring over 21mm thick.

2.5 SCREW FIXING PARTICLEBOARD OR PLYWOOD

Sure-fast type countersunk 50mm x 10 gauge screws, with one-component polyurethane based construction adhesive or elastomeric construction adhesive. Increase screw lengths for flooring over 21mm thick.

2.6 NAILS FOR TIMBER STRIP FLOORING

50mm x 2.4mm steel wire floor brads.

3 EXECUTION

3.1 LAY PARTICLEBOARD FLOORING

Fasten to the flooring manufacturer's requirements and NZS 3604, 7.2.3 **Wood-based sheet flooring**. Punch nails, fill holes, then sand with one coarse and one fine paper, hand sanding into corners.

3.2 LAY PLYWOOD FLOORING

Fix to the plywood manufacturer's requirements and to NZS 3604, 7.2.3 **Wood-based sheet flooring**. Punch nails, fill holes, then sand , hand sanding into corners.

3.3 LAY TIMBER STRIP FLOORING

Moisture content maximum 10-12%. Lay, cramp and fasten to NZS 3604, 7.2.2 **Timber strip flooring**. Punch nails, fill holes, then sand off with one coarse and one fine paper, hand sanding into corners.

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6300 FLOOR COVERING

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Use flooring trades people appropriately experienced with the materials and techniques specified.

1.2 SLIP RESISTANCE - NON RESIDENTIAL

Accessible routes slip resistance to NZBC D1/AS1, 2.1 Slip resistance.

1.3 SURFACE FIRE PERFORMANCE - NON RESIDENTIAL

Critical Radiant Flux to NZBC C/AS2, 4.12.3 Flooring. Refer to 1213 SELECTIONS for requirements.

2 PRODUCTS

2.1 ADHESIVES COMPATIBILITY

Use only compatible adhesives approved by the respective manufacturers.

2.2 RESILIENT FLOOR COVERING

Includes vinyl, linoleum or rubber, either sheet or tile

2.3 ACCESSORIES - RESILIENT FLOOR COVERING

Rigid sheet underlay:	Wood based sheet overlays for uneven timber floors
Primer and sealers:	To the adhesive manufacturer's requirements for the particular substrate.
Adhesive:	To the manufacturer's requirements.
Trims and edging:	As supplied by the manufacturer to complete the work.

2.4 CARPET

Textile floor coverings to, AS/NZS 2455.1 for broadloom or AS/NZS 2455.2 for tiles.

2.5 ACCESSORIES - CARPET

Rigid sheet underlay:	Wood based sheet overlays for uneven timber floors
Underlay:	To AS/NZS 2455.1 Soft underlay and underlays manufacturer's requirements.
Adhesives:	To the manufacturer's requirements.
Edge grippers:	To the manufacturer's requirements.
Tape:	To the manufacturer's requirements.
Trims and edging:	Binder bars, divider strips and nosings to complete the work.

2.6 TIMBER OVERLAY FLOORING

Laminated timber overlay flooring strips/planks for floating floor installation.

2.7 ACCESSORIES - TIMBER OVERLAY FLOORING

Rigid sheet underlay:	Wood based sheet overlays for uneven timber floors
Primer and sealers:	To the adhesive manufacturer's requirements for the particular substrate.
Adhesive:	To the manufacturer's requirements.
Foam underlay	2mm thick, closed cell foam underlay to provide a moisture membrane.
Trims and edging:	As supplied by the manufacturer to complete the work.

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3 EXECUTION

3.1 HANDLING AND STORAGE

Maintain materials and accessories undamaged and dry. Store any rolls and other material to manufacturers requirements, on level surfaces, in non-work areas that are enclosed, clean and dry. Avoid distortion, marking and damage to edges while shifting and handling materials and accessories. Do not use faulty or damaged material.

3.2 SUBSTRATE

Ensure the building is enclosed, wet work complete, finishes and trim complete, and good lighting available. Inspect the substrate to ensure it is of the standard required for work in this section.

3.3 TEMPERATURE

Acclimatize flooring to a room temperature above 16°C to manufacturer's requirements. In air-conditioned buildings run air-conditioning to flooring manufacturer's requirements. Turn off floor heating for at least 48 hours before and after laying.

3.4 LAYOUT

Before beginning the installation confirm the proposed layout of material, location of joins and other visual considerations of the finished work.

3.5 SURFACE PREPARATION - RESILIENT FLOORING

To NZS/AS 1884 including necessary repairs and sealing. Check for moisture content to NZS/AS 1884, Appendix A, and do not commence final sanding or laying until readings for the whole area show a maximum moisture content of, 75% RH for concrete, 14% for timber or 12% for timber with air conditioning. Clean surface.

3.6 SURFACE PREPARATION - CARPET

To AS/NZS 2455.1, section 2. including necessary repairs and sealing. Check for moisture content to AS/NZS 2455.1, Appendix B, and do not commence laying until readings for the whole area show a maximum moisture content of, 75% RH for concrete, 14% for timber or 12% for timber with air conditioning. Clean surface.

3.7 SURFACE PREPARATION - TIMBER OVERLAY FLOORING

To manufacturer's requirements. Clear substrate of debris, repair and sand/grind as necessary. Check moisture content and do not commence final sanding or laying until readings for the whole area show a maximum moisture content of, 60/70% RH for concrete, 14% for timber or 12% for timber with air conditioning. For concrete apply sealer if necessary. Clean surface.

3.8 INSTALLING RIGID SHEET UNDERLAY

Over rough or uneven timber floors, lay sheet overlay with joints staggered, with a 1mm gap between sheets and 2mm at perimeters. Use 18mm divergent staples at 100mm centres throughout the whole sheet and 30mm apart, 18mm in from the edges of the sheets. Punch staples below the surface and sand joints level.

3.9 RESILIENT FLOOR LAYING

Carry out the whole of the work to NZS/AS 1884, and the flooring manufacturer's requirements.

3.10 RESILIENT FLOOR JOINTING

Provide the joints/seams described in 1213 SELECTIONS or the drawings, to NZS/AS 1884, and the flooring manufacturer's requirements.

3.11 RESILIENT FLOOR COVES

Pencil cove flooring to the specified height and finish off as detailed. Perform butterfly method to internal and external mitres. Joints to manufacturers requirements.

3.12 FIT RESILIENT SKIRTING

Fit skirting in accordance with the skirting manufacturer's requirements.

3.13 CARPET INSTALLATION, CONVENTIONAL SYSTEM

Install underlay to manufacturer's requirements, and lay at right angles to the carpet direction.

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. Fix trim.

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3.14 CARPET 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. Fix trim.

3.15 CARPET TILE INSTALLATION

Carry out the whole of the work to AS/NZS 2455.1, AS/NZS 2455.2 and the carpet tile manufacturer's own installation instructions.

3.16 TIMBER OVERLAY FLOORING, INSTALLATION, FLOATING

Install 2mm foam underlay to the total floor area, in long, continuous runs, allowing to cove up walls 50mm. Tape joints using moisture resistant tape, to create an impervious membrane. Install the timber floor strictly in accordance with the flooring manufacturer's requirements. Ensure the required expansion gap is left at perimeters and around fixed obstacles. Adhesive fix flooring to stair treads, risers and landings, to manufacturer's requirements.

3.17 TIMBER OVERLAY FLOORING, INSTALLATION, DIRECT STICK

Apply adhesive approved by the flooring manufacturer, at the required spread rate. Install the flooring to the manufacturer's requirements. Ensure the required expansion gap is left at perimeters and around fixed obstacles.

3.18 CLEAN

Upon completion clean to manufacturer's requirements.

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6700 PAINTING

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work using competent and experienced painters.

1.2 HEALTH AND SAFETY

Refer to the requirements of the Health and Safety at Work Act 2015 and if elimination or isolation is not possible, then minimise the hazards in this work. Refer to WorkSafe publication, Repainting lead based paints, for the required procedures and precautions when treating or removing lead based paint, burning or sanding off paint, or using solvent based paint removers.

1.3 SELECTIONS

Confirm all selections, colours and finishes with the owner.

2 PRODUCTS

2.1 PAINT

As selected and to the paint manufacturer's standards for exterior and/or interior primers, undercoats, sealers, stains, clear coatings, solvent-borne and water-borne paints.

2.2 GAP FILLERS

Linseed oil, putty, plastic wood, wood filler or plastic filler, to suit and to match the surface being prepared.

3 EXECUTION

3.1 INSPECT SURFACES

Inspect surfaces being painted and report to the owner any that will not, after the preparatory work laid down by the paint manufacturer, allow work of the required standard. Confirm that all areas have adequate lighting and are sufficiently free of other construction activities to enable painting work to proceed.

3.2 PROTECT

Cover up adjoining surfaces and areas liable to damage or over-painting.

3.3 REMOVE HARDWARE

Remove hardware and door/window furniture and replace on completion. Do not paint over permanently attached hinges, or any hardware items which cannot be removed.

3.4 PRIMING AND SEALING

Ensure that priming and sealing work needed before or during construction is carried out when required.

3.5 ENVIRONMENTAL CONDITIONS

Carry out work within acceptable temperature and humidity limits, with timber dry, all to the requirements of the paint manufacturer.

3.6 SHARP EDGES, CRACKS AND HOLES

Repair as required by the paint manufacturer.

3.7 PREPARE SURFACES

Prepare surfaces as required by the paint manufacturer. Make good all damage and defects.

3.8 PAINT APPLICATION

Apply paint by brush and/or roller to suit the location of the coating and to the paint manufacturer's requirements. Do not spray on site without express permission.

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3.9 MANUFACTURER'S MANUALS

Refer to the paint manufacturers' manuals and follow their preparation, sequence and application requirements applying to each system. Ensure all paint coats in any system are supplied by the same manufacturer.

3.10 SCUFF BETWEEN COATS

Scuff between all coats to remove any dust pick-up, protruding fibres and coarse particles.

3.11 FINISHED PAINT SURFACES

Finished paint surfaces to show uniformity of gloss and colour, with the correct thickness for each coat, and freedom from painting defects. Ensure finished work is clean and free of any disfigurement.

3.12 CLEAN

Clean adjoining surfaces, glass and fittings of any paint contamination.

3.13 REFIT HARDWARE

Refit hardware without damage to the hardware or the adjoining surfaces.



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7120 WATER SYSTEM

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work by or under the direct supervision of a certifying person under the Plumbers, Gasfitters and Drainlayers Act 2006.

2 PRODUCTS

2.1 POLYBUTYLENE WATER PIPE

To NZBC G12/AS1, 2 Materials. Polybutylene tubing complete with fittings and accessories brand-matched to AS/NZS 2642.1, AS/NZS 2642.2 and AS/NZS 2642.3

2.2 CROSS LINKED POLYETHYLENE WATER PIPE

To NZBC G12/AS1, 2 Materials. Proprietary high-density cross-linked polyethylene composite pipe and fittings to AS/NZS 2492 for pipes and AS/NZS 2537.1, AS/NZS 2537.2, AS/NZS 2537.3 and AS/NZS 2537.4 for fittings.

2.3 INSULATION FOR HOT WATER PIPES

Preformed closed cell foam.

2.4 EXPOSED PIPES

As selected, chrome plated copper, stainless steel or white polybutylene, pipework finish to include escutcheon plates, accessories, bends and elbows protruding from walls or fittings.

2.5 WATER METER

Meter, gate valve and back flow prevention to the requirements of the network utility operator. Minimum 25mm OD Polyethylene cold water main. Allow to excavate, install and back fill for the water main.

2.6 VALVES AND FITTINGS

All valves and fittings required for the system, to NZBC G12/AS1.

2.7 WATER HEATERS

Generally to NZBC G12/AS1, 6.0 Hot Water Supply Systems as applicable. Refer to 1213 SELECTIONS/drawings for specific water heater.

3 EXECUTION

3.1 EXECUTION GENERALLY

Carry out work and tests as applicable to NZBC G12/AS1.

3.2 INSTALL POLYBUTYLENE/ CROSS LINKED POLYETHYLENE WATER SUPPLY

Type as selected. Size the piping layout to eliminate loss of pressure at any point by simultaneous draw-off. Run pipes complete with all fittings, support and fixing, and jointed to the pipe manufacturer's specifications, all to NZBC G12/AS1, 5.0 **Water supply**. Conceal pipework and pressure test before wall linings are fixed.

3.3 OUTLET LOCATIONS

Ensure wall outlets for exposed pipes are level and centred on the fixture to ensure the neat installation of exposed pipework.

3.4 BACKFLOW PREVENTION

Fit back flow prevention devices to all outlets where it is possible for water or contaminants to backflow in to the potable water supply system.

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3.5 INSTALL HOT WATER PIPE INSULATION

Insulate hot water pipes in accordance with the insulation manufacturer's instructions. Cut insulation sections tight between timber framing and tight between the webs of steel studs. Where hair felt is used, wrap around pipes in two layers in opposite directions and secure with galvanized steel wire ties.

3.6 INSTALL WATER HEATER

Install where shown complete with all the necessary fittings to the water heater manufacturer's requirements and NZBC G12/AS1, 6.11 **Water heater installation**. Gas water heaters also to NZBC G11/AS1 and AS/NZS 5601.1.

3.7 PENETRATIONS

Provide and fit collars and escutcheon plates to match pipework at penetrations through constructions.

3.8 COMPLETION

Pressure test to ensure no leakage and leave in proper working order. Clean tapware and fittings.



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7150 SANITARYWARE, TAPWARE & ACCESSORIES

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work by or under the direct supervision of a certifying person under the Plumbers, Gasfitters and Drainlayers Act 2006.

2 PRODUCTS

2.1 SANITARY FIXTURES, TAPWARE, APPLIANCES AND ACCESSORIES

Refer to 1213 SELECTIONS and drawings for product selections.

3 EXECUTION

3.1 EXECUTION GENERALLY

Carry out installation work and tests to G1/AS1, E3/AS2, G12/AS1 or AS/NZS 3500.1 and AS/NZS 3500.4 as modified by NZBC G12/AS3 and NZBC G13/AS1 or AS/NZS 3500.2 as modified by NZBC G13/AS3, as applicable and to the fixture manufacturers requirements.

3.2 INSTALL SANITARYWARE

Fit and install sanitaryware and associated screens, elements and hardware, plumb, true to line and rigid, to the fixture manufacturer's requirements. Supply standard chrome plated brass wastes and plastic plugs on chrome plated chains with all basins, tubs and baths. Seal between all sanitary fixtures and floors, wall linings, fixtures and the tops they are in, the tops of wall linings to NZBC E3/AS1, 3.2.

3.3 INSTALL TAPWARE

Install tapware in accordance with the tap manufacturer's requirements. Flush out on completion. Check that washers or ceramic discs are operating correctly.

3.4 INSTALL SHOWER CUBICLE

Install to NZBC G1/AS1, NZBC E3/AS1 and in accordance with shower manufacturer's details and requirements. Ensure that screens and doors fit closely and accurately. Test for water egress around sides and base. Seal shower wall lining penetrations (shower head, shower hose, mixer, taps etc) to NZBC E3/AS1, Fig 6.

3.5 TEST

Test soil and waste disposal systems to ensure no leakage exists and leave in working order.

3.6 EQUIPOTENTIAL BONDING METALLIC FIXTURES

Before enclosing, co-ordinate with electrician to provide for equipotential bonding to metallic water pipes and metallic sanitary fixtures using an earth bonding conductor to requirements of NZBC G12/AS1, 9.0 Equipotential Bonding and/or AS/NZS 3000, 5.6 Equipotential Bonding.

3.7 ENSURE

Ensure all sanitary plumbing fittings and pipework are complete and operational.

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7410 RAINWATER SPOUTING SYSTEM

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 LIAISON

Ensure liaison with associated installations to ensure material selections are compatible and required flashing work is completed.

1.2 ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating contact or continuity of water between dissimilar metals.

2 PRODUCTS

2.1 ALUMINIUM/ZINC ALLOY COATED PRE-PAINTED STEEL SPOUTING

Profile, jointing, brackets and fittings brand matched and complete to the spouting manufacturer's specifications.

2.2 ALUMINIUM/ZINC ALLOY COATED PRE-PAINTED STEEL DOWNPIPES

Seam jointed and complete with stand-off brackets, galvanized screw fixed.

3 EXECUTION

3.1 RAINWATER HEADS, DROPPERS, OVERFLOWS

Fabricate and install as detailed.

3.2 INSTALL ALUMINIUM/ZINC ALLOY COATED STEEL PRE-PAINTED SPOUTING AND DOWNPIPES

Screw fix brackets, set to falls to outlets, with spouting joints silicone sealed and pop-riveted to the spouting manufacturer's requirements. Screw fix stand off brackets, set pipes plumb and clear of the wall, with joints silicone sealed. Discharge into stormwater bends.

3.3 ENSURE

Ensure rainwater services are operational, flashings complete and the building weathertight.

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7420 SANITARY WASTE SYSTEM

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work by or under the direct supervision of a certifying person under the Plumbers, Gasfitters and Drainlayers Act 2006.

2 PRODUCTS

2.1 PVC-U WASTE, SOIL AND VENT PIPES

PVC-U pipe, complete with fittings brand-matched to the pipe manufacturer's requirements.

2.2 EXPOSED PIPES AND TRAPS

As selected and to the following details:

- chrome plate on copper pipes and associated copper and brass fittings
- stainless steel pipe and associated fittings
- PVC, PE polyethylene or polypropylene pipe, including all associated fittings.

3 EXECUTION

3.1 EXECUTION GENERALLY

Carry out sanitary plumbing work and tests as applicable to one of the following:

- NZBC G13/AS1 or
- AS/NZS 3500.2, as modified by NZBC G13/AS3

3.2 ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating actual contact or continuity of water between dissimilar metals.

3.3 INSTALL TRAPS, WASTE AND VENT PIPES

Connect waste outlets to traps and run waste pipes and back vents concealed, sized and fixed to one of the following:

- NZBC G13/AS1 or
- AS/NZS 3500.2, as modified by NZBC G13/AS3

Discharge wastes into floor waste gully, drainage system stack, soil pipe, or gully trap as shown. Bird proof mesh to roof vents and vermin proof mesh to untrapped waste pipes.

3.4 PENETRATIONS

At penetrations through constructions provide and fit collars and escutcheon plates to match pipework. Exterior roof and wall penetrations to NZBC E2/AS1.

3.5 TEST

Test soil and waste disposal systems to NZBC G13/AS1 or AS/NZS 3500.2, section 15 Testing of sanitary plumbing and sanitary drainage installations, to ensure no leakage exists and leave in working order.

3.6 ENSURE

Ensure all sanitary plumbing fittings and pipework are complete and operational.

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7430 DRAINAGE SYSTEMS

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

1.2 AS BUILT DOCUMENTS

Supply a 1:100 as-built drawing to the BCA and the owner on completion.

2 PRODUCTS

2.1 MATERIALS

Concrete:	17.5 MPa prescribed grade.
Reinforcement:	Grade 300 deformed bars.
PVC-U pipes:	PVC-U pipes bends, junctions, fittings and joints.
Field drains:	Plastic pipes for field drains perforated and coiled with filter fabric over.
Drainage/filling materials	
Granular fill:	Clean gravel or crushed stone or a blend of these. Particle size from minimum 7mm to maximum 20mm.
Selected fill:	Fine grain soil or granular material suitable for bedding, excluding topsoil.
Ordinary fill:	Top soil or other excavated materials.

2.2 FITTINGS

Gully traps complete with grating:	To NZBC G13/AS2, 3.3 Gully traps, or AS/NZS 3500.2, 4.6 Gullies, as modified by NZBC G13/AS3
Strip drain channel:	Proprietary, modular, variable invert, PVC-U or precast concrete drainage channel sections and drainage sump, embedded in site concrete and fitted with selected metal gratings.

3 EXECUTION

3.1 EXCAVATE

Excavate for drains to a firm even base with correct gradients set in straight runs.

3.2 MANUFACTURER'S REQUIREMENTS

All drainage installations to the pipe and fitting manufacturer's requirements.

3.3 EXECUTION GENERALLY - WASTEWATER

Carry out drainage work as applicable to one of the following:

- NZBC G13/AS2 or
- AS/NZS 3500.2

3.4 EXECUTION GENERALLY - STORMWATER

Carry out drainage work as applicable to one of the following:

- NZBC E1/AS1, or
- AS/NZS 3500.3

3.5 LAY WASTEWATER DRAINS

Lay drains in straight runs to correct gradients, to discharge into the NUO's sewer. Set inspection fittings on a concrete base.

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3.6 INSTALL GULLY TRAPS

Set in a minimum 75mm thick concrete with top surround 25mm above paving and 75mm above other surfaces.

3.7 LAY STORMWATER DRAINS

Confirm the required location of downpipes and finished ground levels before commencing pipework. Set downpipe bends in concrete brought up to protect the top of the bend from damage. Lay drains in straight runs to correct gradients to discharge into the NUO's stormwater system.

3.8 INSTALL STRIP DRAIN CHANNEL

Excavate trench and form site concrete base to fall. Set interlocking channel sections, sumps and accessories in place, all in accordance with the channel manufacturer's requirements. Check falls and install gratings and covers.

3.9 INSTALL SURFACE WATER SUMP

Install surface water sump to one of the following:

- NZBC E1/AS1, 3.6 Surface water inlets to drains or
- AS/NZS 3500.3, section 7.

Ceramic half-siphon pipe. Cast iron frame with a lift out grating.

3.10 CONCRETE ENCASEMENT

Concrete encase shallow drains and drains under driveways, on a 100mm deep 17.5 MPa concrete bed reinforced with three 10mm mild steel bars. Surround pipes with a polythene membrane to allow movement and encase in 100mm 17.5 MPa concrete.

3.11 TESTING - WASTEWATER

Test to one of the following:

- NZBC G13/AS1, 7.1 Test Methods or
- AS/NZS 3500.2, section 15 Testing of Sanitary Plumbing and Sanitary Drainage Installations

Field test drains for watertightness to the satisfaction of the BCA inspector.

3.12 TESTING - STORMWATER

Test to one of the following:

- NZBC E1/AS1, 8.0 Drain Leakage Tests or
- AS/NZS 3500.3, section 9, as modified by NZBC E1/AS2.

Field test drains for watertightness to the satisfaction of the BCA inspector.

3.13 BACKFILL

Backfill drain lines in 100mm layers, well tamped but without disturbing the drains. Finish off garden areas with 150mm of topsoil, slightly mounded above the finished ground line. Public roads and footpaths to be made good to the controlling authority requirements.



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7700 ELECTRICAL

1 GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 COMPLY

Comply with the Electricity (Safety) Regulations 2010, AS/NZS 3000 for listed and prescribed work and with the NUO's requirements. Apply for the service connection. Arrange for the required inspections of listed work. Pay all fees.

1.2 QUALIFICATIONS

Electrical workers holding a current Practising Licence (with an appropriate Registration class) to carry out prescribed electrical work. An Electrical Worker who holds a Trainee Limited Certificate or a Limited Certificate to be supervised by a licensed electrical worker with an appropriate Registration class.

1.3 ELECTRICAL CERTIFICATE OF COMPLIANCE

At the completion of electrical work provide a Certificate of Compliance (CoC) to Electricity (Safety) Regulations 2010, regulation 65-67. Provide a copy to the Contract Administrator and NUO prior to connection and when required to the BCA for Code Compliance.

- Arrange for the NUO to inspect before the meter installation, listed work inspection, polarity check and supply becoming live.
- Arrange for an inspector to inspect high risk electrical work as required by Electricity (Safety) Regulations 2010,regulation 70 High-risk prescribed electrical work to be inspected.

1.4 ELECTRICAL SAFETY CERTIFICATE

Provide an Electrical Safety Certificate (ESC), as required by the Electricity (Safety) Regulations 2010, Reg 74A, to the owner and when required the BCA. To be provided no later than 20 working days after connection, prior to Practical Completion.

1.5 SAFETY OF INSTALLATION

When required by the Electrical (Safety) Regulations 2010, before installation work commences, provide a Certified Design to Electrical (Safety) Regulations 2010, regulations 58. This will may not be required for domestic installations or Low Risk Work.

2 PRODUCTS

2.1 METER BOARD / DISTRIBUTION BOARD / SUB BOARD

Proprietary manufactured meter board complete with flashing kit. Proprietary manufactured distribution board in accordance with AS/NZS 3000 2.10 Switchboards, complete with neutral and earth busbars, MCB's, RCD's, main switch and, if required, additional isolation switches. All protective devices: 6kA MCB's of the appropriate rating. Fit to board manufacturer's requirements where detailed. Recess into wall and ensure fire containment properties of the enclosure is maintained.

2.2 MAIN SUPPLY

Excavate, lay underground mains to NUO and AS/NZS 3000 Table 3.6, Under-Ground Wiring Systems - Minimum Depth of Cover, requirements. Install cable marker, back fill. Public roads and footpaths to be made good to the controlling authority requirements.

2.3 CABLES

Tough plastic sheathed copper conductors. Minimum sizes are indicated below. Increase these as necessary due to method of installation, cable length or load to AS/NZS 3000 Section 3 Selection and Installation of Wiring Systems.

Lighting circuits:	1.5mm2 on 10 amp MCBs for domestic construction
Power circuits:	2.5mm2 on 16 amp MCBs for domestic construction

2.4 ELECTRICAL ACCESSORIES

As selected and to the following details:

Switch units

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	Minimum 16 amp, 230 volt flush polycarbonate units. For number of switches per unit, dimmer units, neon (indicator or toggle) units, locator units and 2-way units refer to the electrical drawings.
Switched socket units:	10 amp, 230 volt flush polycarbonate 3 pin combined switch units.
Hot water system switch:	One way 20 amp switch complete with clamp for flexible PVC conduit.
Stove/range socket outlet and switch:	32 amp, 230 volt flush polycarbonate 3 pin combined switch unit, with remote isolating switch.

3 EXECUTION

3.1 CABLING

Install to AS/NZS 3000 Section 3 Selection and Installation of Wiring Systems, with a maximum of 10 light outlet units or 6 switched socket units on any circuit. Separate circuits for all electric heating appliances. All cabling run concealed. No TPS cable laid directly in concrete. Locate holes in timber framing for the passage of cables at the centre line of the timber member ensuring cables are located minimum 50mm from the surface of a wall, roof, ceiling or floor, where they are fixed in position to AS/NZS 3000, 3.9.4.

Provide main earth and equipotential bonding to AS/NZS 3000, section 5, including (if in project) for at risk; structural steel, light steel framing, concrete reinforcing (if bath, shower, swimming/spa pool involved), conductive pipes (& connected metalwork like SS sinks), conductive elements within 1.25m of swimming/spa pool edge.

3.2 INSTALL SWITCH AND SOCKET UNITS

Fit single and double switch units and socket units level and plumb where shown on the drawings. Install at the following heights (to the centre of the unit) unless shown otherwise on the drawings or to match existing.

Switch Units:	1000mm above floor
Socket Units:	400mm above floor
	150mm above work benches

Mount switches vertically and socket units horizontally. Label switch units which control electrical equipment by engraving on the rocker switch.

3.3 INSTALL LIGHT FITTINGS

Install selected light fittings in the locations and heights shown on the drawings and in accordance with the fitting manufacturer's requirements.

Install recessed fittings to manufacturer's instructions, AS/NZS 3000, 4.5.2.3 Recessed Luminaires, and NZS 4246. Residential recessed light fittings to AS/NZS 3000, 4.5.2.3.5:

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

3.4 ELECTRIC HOT WATER SYSTEM

Install to manufacturer's requirements and to AS/NZS 3000, 4.8.2 Water heaters. Wire as a separate circuit through a wall-mounted isolating switch, with the cable from switch to element encased in flexible PVC conduit, clamp fixed at each end.

3.5 GAS APPLIANCES

Wire for gas appliances including continuous flow hot water, gas fires and gas cook-tops to manufacturer's requirements and to AS/NZS 3000, 4.18 Gas Appliances and Equipment. Install a means of isolation either:

- plug to an accessible switched socket outlet
- plug to an inaccessible location with a separate switch in an accessible location
- A lockable, isolating switch operating in all active conductors

3.6 INSTALL DOMESTIC SMOKE ALARMS

Install Type 1 domestic, inter-connected smoke alarm system to NZS 4514 and to manufacturer's requirements, fitted neatly and without damage to the surrounding finish.

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3.7 INSTALL EXTRACT SYSTEMS

Install extract fans, rangehoods, ducts and grilles to NZBC G4/AS1 and manufacturer's requirements.

Household extracts for cooktops, showers and baths to have a minimum flow rate (in fans and ducts) to NZBC G4/AS1 of:

- 25 L/s for showers and baths
- 50 L/s for cooktops

3.8 ELECTRIC FITTINGS AND EQUIPMENT

Install and wire selected fittings and equipment to the individual fittings and equipment manufacturer's requirements and AS/NZS 3000. Refer to the drawings for required layouts and locations for equipment.

3.9 COMPLETION

Leave all fittings, lamps and tubes operational, with equipment and diffusers clean.

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