Steve Henderson NZCAD Ltd

P R O J E C T S P E C I F I C A T I O N

Proposed Alterations to Probst Residence

37 Devon Street

Arrowtown

Wakatipu

Issued for Consent

09 Oct 2026

26-04

PROJECT OVERVIEW

Scope

Alterations to the existing dwelling comprising modifications to the first-floor light timber-framed structure supported on the existing masonry block basement. Work includes SED-designed structural elements to support the altered first-floor layout, associated plumbing and drainage alterations, replacement of internal plumbing fixtures, and a full reclad of the first-floor exterior walls. All work is limited to the existing building footprint and does not involve changes to the basement structure.

Address

Site Address	37 Devon Street
Suburb	Arrowtown
Region	Wakatipu
Lot #	17
DP #	11754

Site Conditions

Wind Zone	M - Medium Wind Speed
Earthquake Zone	Zone 3
Exposure Zone	Zone B - Low
Snow Loading Zone	Zone N4

Related Parties

Structural Engineer

Gridline Ltd , Warrick Weber, warrick@gridline.co.nz

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1 WATERPROOFING

1.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

1.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

3740:2010(AS)	Waterproofing of domestic wet areas
4858:2004(AS/NZS)	Wet area membranes
NZBC E3/AS1	Internal Moisture

1.3 Mapei Liquid Applied Waterproofing Systems

1.3.1 Scope

Supply and install the specified Waterproofing Systems from Mapei to the locations identified on the drawings, complete with accessories. All aspects of this work shall be in complete accordance with Mapei product technical literature (check www.mapei.co.nz, or call 09 921 1994 for the latest editions), associated Mapei BRANZ Appraisals, other relevant product manufacturers' recommendations, and as shown the drawings.

No substitutions are permitted for the specified Waterproofing Systems from Mapei.

1.3.2 Workmanship

Where required by the NZ Building Act 2004 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

All installation work shall be carried out by experienced Mapei Approved Applicators, familiar with the specified products and installation techniques, to fully comply with all Mapei NZ Ltd warranty requirements and in accordance with the manufacturer's installation requirements, relevant Mapei BRANZ Appraisals, and as noted and detailed on the drawings. All work shall be such as to leave a neat, efficient, robust and waterproof installation.

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-ordinate with other trades to install Mapei waterproofing products as required.

Application of the specified product(s) shall not be undertaken when the ambient temperature is outside the manufacturer's permissible temperature range. Exterior applications shall not be

undertaken during inclement weather. As necessary, protect completed exterior work from rain and from hot dry winds and direct sunlight to aid proper drying and curing.

Protect adjacent finished work and surfaces from damage and contamination during installation. Leave completed surfaces clean, sound, and free of defects and damage.

1.3.3 Storage & Handling

Store Mapei waterproofing materials undercover, away from direct sunlight, on a flat, clean and dry surface. Keep Mapei products dry, out of direct sunlight and protected from damage, moisture and contamination while stored.

Do not use damaged, defective or contaminated products, or products that are beyond their designated shelf life.

Handle Mapei products in accordance with the manufacturer's requirements as set out in the relevant Technical Data Sheet(s) and in a manner that prevents contamination or deterioration of the material or reduces its performance.

Installers shall be familiar with and comply with the manufacturer's Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials.

1.4 ARDEX Liquid-Applied Waterproofing Membranes

1.4.1 Scope

Supply and install the specified ARDEX Liquid-Applied Waterproofing Membranes to the locations indicated on the drawings, complete with all system components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with the manufacturer's requirements and technical literature (check www.ardex.co.nz, or call 0800 227 339 for the latest editions), other relevant product manufacturers' recommendations, and BRANZ Appraisal No.472 and No. 473, and as shown on the drawings.

No substitutions are permitted for any specified ARDEX Liquid-Applied Waterproofing Membranes, or ARDEX products, or ARDEX system components or accessories.

This specification should be read in conjunction with other relevant specification sections as they may be interrelated.

The following is a list and/or general description of the extent of ARDEX Liquid-Applied Waterproofing Membranes works, which are more specifically defined in the contract documents, required for the completion of the contract works:

1.4.2 Interior Use Membrane

1.4.2.1 ARDEX WPM 300

Interior Waterproofing Membrane - ARDEX WPM 300. A water-based, 2-part liquid polyamide membrane/coating. ARDEX WPM 300 can be used as a waterproofing barrier on the negative side of below grade surfaces, including basements, liftwells, retaining walls etc.

Features:
- Water resistant.
- Prevents rising damp and efflorescence.
- Withstands hydrostatic pressure (250kPa).
- Can be applied to damp surfaces, and freshly laid, hardened concrete.
- Excellent adhesion to most substrates.
- Can be overcoated with most decorative or industrial finishing paints.
- Can be overlaid with ARDEX floor levelling compounds prior to the application of subsequent floor coverings and tiles.
- Conforms to the requirements of AS/NZS 4020 for use in contact with potable water.

Where to Use:
- On concrete structures; on new and existing concrete.
- On reinforced concrete block masonry.
- On cement/sand screeds and renders.

Limitations:
- Ardex WPM 300 is NOT classified as a trafficable membrane.

Technical Data (at +25° and 50% RH):
- Mixing Ratio: Parts A + B = 1:1 by volume.
- Application Temperature Range: from +10°C to +35°C.
- Pot Life: 1-2 hours, depending on humidity, surface temperature and porosity of substrate.
- Recoat Time: 4 hours after application.
- Full Cure Time: 7 days after application.
- Colours: Grey, Mojo Black.

Apply ARDEX WPM 300 epoxy membrane to properly prepared substrates in strict accordance with the manufacturer's requirements.

Colour:
Installed Location: BASEMENT FLOOR AND WALLS TO ENSURE MOISTURE BARRIER TO EXISTIGN STRUCTURE.

1.4.3 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.

Coordinate with other trades to install ARDEX Liquid-Applied Waterproofing Membrane systems and products as required.

1.4.4 Workmanship

Where required by the NZ Building Act 2004 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

All preparation and installation work shall be carried out by ARDEX Approved Applicators, familiar with the specified products and installation techniques, to fully comply with all ARDEX NZ Ltd warranty requirements and in accordance with the manufacturer's installation requirements, relevant ARDEX BRANZ Appraisals, and as noted and detailed on the drawings.

All work shall be such as to leave a neat, efficient, robust and waterproof installation.

Use only ARDEX-approved primers compatible with the specified membranes and substrates, and according to the membrane's application/use.

Do not install membranes in wet weather conditions, or when temperatures and humidity are outside the manufacturer's permissible range.

Make all necessary provisions to protect adjacent finished work and surfaces from damage and contamination during installation.

As necessary, protect installed membranes from damage and contamination during subsequent construction activities until permanently covered/enclosed.

1.4.5 Delivery & Handling

Store ARDEX waterproofing products inside, in a weatherproof environment, clear of the floor, on a flat, even and level surface. Keep stored products dry, out of direct sunlight and protected from damage, moisture and contamination.

Do not use damaged, defective or contaminated products, or products that are beyond their designated shelf life.

Should a problem be encountered with any ARDEX product, immediately contact the ARDEX Technical Hotline on 0800 227 339. Do not continue to use the product that is not performing to specification or expectation. Keep samples of the product in question and where possible, document batch numbers and/or manufacturing dates.

Handle ARDEX waterproofing products in accordance with the manufacturer's requirements as set out in the relevant Technical Data Sheet(s), and in a manner that prevents contamination or deterioration of the material and does not reduce its performance.

Installers shall be familiar with and comply with the manufacturer's Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials.

Conform with all relevant WorkSafe NZ Guidelines and Codes of Practice - including the OSH Guidelines For the Provision of Facilities and General Safety in the Construction Industry.

1.4.6 Preparation

1.4.6.1 General

Substrates shall be structurally sound and dimensionally stable, even and smooth, clean, dry, and free from dirt, dust, grease, oil, wax, paint residue, loose plaster and laitance, curing compounds and other materials and contaminants likely to cause damage to the waterproofing membrane or affect its bonding and performance.

Carry out all necessary inspections and preparatory work to all substrates in accordance with the manufacturer's product Technical Data Sheet prior to application of ARDEX surface primers and waterproofing membranes.

Check that the substrate is free of voids and depressions, and is in correct alignment - true to line, level and/or plumb and to the falls indicated on the drawings.

Check that all embedded items are correctly installed, and that all substrate edges are completed as detailed.

Confirm the location of all movement control joints prior to commencement of the works, and ensure that they are appropriately treated. Do not cover or bridge control joints without the use of the manufacturer's recommended bond breaker tapes, flexible waterproofing bands, corners, sleeves, sealants etc, appropriate for the application and the ARDEX waterproofing membrane.

Allow floor levelling compounds and mortar screeds to properly cure in accordance with the manufacturer's recommendations before commencing waterproofing.

The commencement of work on each section of waterproofing shall be deemed to indicate full acceptance by the ARDEX Approved Applicator that all preparatory works by other trades are appropriate to achieve the required finished results.

Carry out all necessary substrate priming in accordance with ARDEX requirements.

1.4.6.2 Concrete Slabs

Reinforced Concrete Slabs - check all aspects of preparatory works, including but not limited to:
- Concrete slab surface finishes must be compliant with NZS 3114 'U3 Surface Finish'.
- New concrete must have aged for a minimum of 28 days prior to application of ARDEX waterproofing membranes.
- Old or soiled concrete must be thoroughly cleaned and washed and allowed to dry prior to application of waterproof membranes.
- Check the surface for damage and defects - have any surface damage and defects appropriately remedied.
- Check junctions with adjacent substrates and elements, ensuring that all necessary works have been completed as detailed.

- Ensure the substrate is dry and free of all loose material, sharp protrusions, hollows, etc., prior to priming and membrane application.
- Carry out all necessary substrate priming in accordance with ARDEX requirements.

1.4.6.3 Concrete Masonry Walls

Concrete Masonry Walls - check all aspects of preparatory works, including but not limited to:
- Old or soiled blockwork must be thoroughly cleaned and washed and allowed to dry.
- Check that mortar joints have been struck flush with the concrete blocks and tooled tight.
- Check the surface for damage and defects - have any surface damage and defects appropriately remedied.
- Check junctions with adjacent substrates and elements, ensuring that all necessary works have been completed as detailed.
- Ensure the substrate is dry and free of all loose material, sharp protrusions, hollows, etc., prior to priming and membrane application.
- Carry out all necessary substrate priming in accordance with ARDEX requirements.

1.4.7 Completion

Check that ARDEX liquid-applied waterproofing membranes have been applied and installed correctly, with all edges, penetrations, outlets, movement control joints and other detailing correctly finished.

Check waterproofing membranes for defects, surface damage and punctures - carry out any repairs in strict accordance with the manufacturer's instructions before permanently covering. Replace damaged membranes when beyond repair.

As necessary, flood test waterproofing membranes in accordance the manufacturer's requirements and time frames - carry out any additional works necessary as a result of the testing.

Ensure waterproofing membranes are adequately protected from damage and contamination until permanently covered or enclosed.

Leave this work complete, watertight and leak-free, and to the required standard in accordance with ARDEX NZ Ltd requirements.

Clean up thoroughly, and leave adjacent surfaces and finished work clean and free of damage and contamination. Remove all associated rubbish from site.

Issue to the Owner a copy of the manufacturer's maintenance requirements (if applicable), and a copy of the ARDEX NZ Ltd Warranty.

2 CARPENTRY

2.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

2.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

1734:1997(AS/NZS)	Aluminium and aluminium alloys - Flat sheets, coiled sheet and plate
2295:2006(NZS)	Pliable, permeable building underlays
2588:2018(AS|NZS)	Gypsum plasterboard
2589:2017(AS/NZS)	Gypsum linings - Application and finishing
2904:1995(AS/NZS)	Damp-proof courses and flashings
3602:2003(NZS)	Timber and wood-based products for use in building
3604:2011(NZS)	Timber-framed buildings
3617:1979(NZS)	Specification for profiles of weatherboards, fascia boards, and flooring
3631:1988(NZS)	New Zealand timber grading rules
4200.1:2017(AS|NZS)	Pliable building membranes and underlays - Part 1: Materials
4200.2:1994(AS/NZS)	Pliable building membranes and underlays - Installation requirements
4389:2015(AS/NZS)	Roof safety mesh
NASH Standard	Residential and Low-rise Steel Framing - Part 1: Design Criteria
NZBC B2/AS1	Durability
NZBC C/AS2-AS6	Protection from Fire
NZBC G6	Airborne and Impact Sound
SNZ HB 3604:2011	Timber-framed buildings - Selected extracts from NZS 3604:2011

2.3 General

This section includes the receiving, stacking and storage of all Carpenter's materials and the fabrication, erection and fixing of all framing, sheathings and finishing timbers, including all work incidental to neatly finishing in other trades and all temporary work and temporary bracing.

The Carpenter shall attend upon all trades, and shall supply and fix all obviously necessary but not specifically mentioned fixings and materials.

2.4 Ecoply Barrier

2.4.1 Scope

Supply 7mm H3.2 CCA treated Ecoply Barrier and install it as a rigid air barrier to the outside face of the external timber framed walls where noted. All aspects of this work shall be in full accordance with NZS 3604 and NZBC E2/AS1 and Carter Holt Harvey Woodproducts 'Ecoply Barrier Specification and Installation Guide' (Ph 0800 326 759 to confirm the date of the most recent edition).

For technical information on products to attach to this project, please visit productspec.co.nz/en/supplier/chh%20plywood.

2.4.2 Preparation

Check that the timber wall framing complies with NZS 3604, or specific design, has studs at maximum 600mm centres and nogs at maximum 1200mm centres, is plumb and in true alignment, includes all blocking required for Ecoply Barrier fixing at openings, joints, corners and soffits etc., and (preferably) has a maximum moisture content of 20% at the time of Ecoply Barrier installation. Ensure that bottom plate hold-downs for bracing panels are correctly installed. Upon delivery store plywood on four evenly spaced level bearers, and protect the plywood from rain dirt etc

2.4.3 Installation

Ecoply Barrier installation work shall be carried out by competent tradesmen, observing recommendations within the Material Data Safety Sheet for H3.2 CCA Ecoply. Handle the plywood carefully, and reject any sheets with damaged edges or faces.

Fix sheets vertically. Sheets setout neatly from corners, incorporating 2 - 3mm expansion gaps at all joins. All sheet edges fully supported. Install with cut sheet ends to the top, and with other cuts sealed with flashing tape (Metalex Clear can be used on cut edges additionally if this is desired). Fix with 40x2.5mm clouts or Paslode Impulse 50x2.8mm ring round head drive nails, all hot dipped galvanised or better. Fix at 150mm centres to all sheet edges, 7mm in from the sheet edge, and at 300mm centres to all intermediate supports.

Install Ecoply PVC Z flashing (from E2 Flashing Solutions) to horizontal joints. Seal all vertical joints and corners with Ecoply Sealing Tape, installed on clean surfaces. Ensure that base clearances to E2/AS1 are provided. Ensure that the overcladding is installed within 6 months of Ecoply Barrier installation.

2.5 Shadowclad

2.5.1 Scope

12mm 'Shadowclad Natural Groove' H3.1 LOSP treated plywood cladding to the wall surfaces shown on the drawings. All aspects of the work shall be in full accordance with the Shadowclad Specification and Installation Guide (Ph 0800 326 759 to confirm date of the most recent edition).

2.5.2 Preparation

2.5.2.1 Timber Frame, Building Wrap, Vented Cavity

Coordinate with all other trades to achieve correct conditions for the cladding installation.

Check that the timber wall framing complies with NZS 3604,or specific design, has studs at maximum 600mm centres and dwangs at maximum 800mm centres, is plumb and in true alignment, includes all blocking required for cavity battens fixing at openings, joints, corners and soffits etc., and has a maximum moisture content of 20% at the time of Shadowclad installation.

Check that the building wrap as specified has been installed in accordance with NZBC requirements and the manufacturers recommendations, and with all finishing tapes, flashings etc. at windows, doors, corners and penetrations all correctly incorporated to provide a continuous seal.

Where the studs are at greater than 450mm centres, check that appropriate additional restraint is correctly installed to the wrap, to keep bulk insulation from pushing the wrap into the cavity.

Check that all preparatory materials are lapped such that any water will run down to the exterior.

2.5.3 Vertical Sheet Joins

Shiplap spaced 9mm.

2.5.4 Panel Finish Coating

Paint or film-forming stain, minimum film build 90 microns.

Location:

2.5.5 Aluminium Flashing Finish

Anodised Natural.

2.5.6 Workmanship

All Shadowclad installation work shall be carried out by skilled tradesmen experienced in cladding work and in full compliance with NZBC E2/AS1. Upon delivery, store plywood on four evenly spaced level bearers, and protect the plywood and flashings from rain dirt etc. Handle the plywood carefully, and reject any sheets with damaged edges or faces.

2.5.7 Installation

2.5.7.1 Durability Zone B or C (Cavity, Timber Frame)

Install the ventilated cavity base strip, the cavity battens, and the Shadowclad flashings in accordance with all NZBC E2/AS1 and Shadowclad requirements. Ensure additional cavity battens are provided for cladding junctions, openings edges, corners etc. as detailed or required. Cavity battens fixed sufficiently to hold in place until the cladding is installed. Ensure special nailing pattern is followed for cavity battens where Shadowclad is used as a bracing element.

Sheet setout as drawn for expressed or battened joints, otherwise neatly set out from corners, incorporating expansion gaps at vertical joins as noted. All sheet edges fully supported. Seal all cut edges of Shadowclad with Metalex Clear, and seal 150mm up the back face in potentially damp situations.

Fix at 150mm centres to all sheet edges, 7mm in from the sheet edge (except at top or bottom laps), and 300mm centres to all intermediate supports. Minimum timber framing fixings for cavity fix are 60 x 2.8 nails or 8g x 65mm screws, use hot dip galvanised (or better) fixings.

Note: special fixing requirements are required when the Shadowclad forms part of the bracing element, and allow additional length to suit when fixing over a rigid air barrier.

2.5.8 Completion

Ensure base clearances to E2/AS1 are provided. Ensure that those selecting the finish coating are aware that it must have a Light Reflectance Value of 40% or more for 50 year durability of bracing panels. Ensure the appropriate persons are aware of the Shadowclad maintenance requirements noted in the Shadowclad specification literature.

2.6 GIB® Plasterboard Linings

2.6.1 Scope

Supply and install GIB® Plasterboard Linings specified herein, as sheet lining materials to the walls, ceilings and other elements identified on the drawings, complete with all accessories required for proper installation, finishing and performance. All aspects of this work shall be in complete accordance with the current GIB® Site Guide and relevant GIB® Systems literature (check www.gib.co.nz, or call 0800 100 442 for the latest editions), and other relevant product manufacturers' recommendations.

No substitutions are permitted for GIB® Plasterboard Linings, GIB® Systems or GIB® System components and accessories.

This specification must be read in conjunction with relevant GIB® Systems specifications - GIB® EzyBrace® Systems, GIB® Fire Rated Systems, GIB® Noise Control Systems, GIB® Aqualine® Wet Area Systems, GIB® X-Block® Systems, GIB® Quietline®, GIB® Intertenancy Barrier System, and GIB® Rondo® Metal Batten Systems - and other specifications sections, as they are interrelated

2.6.2 Requirements

2.6.2.1 Safety

Comply with the Health and Safety at Work Act 2015 (HSWA), and with all relevant Health and Safety at Work Regulations 2016, and with all relevant WorkSafe New Zealand (WorkSafe) Approved Codes of Practice and WorkSafe Information and Guidance, particularly those for construction and building maintenance.

2.6.2.2 Warranty

GIB® Product & System Warranty:

GIB Systems Durability.
The following systems have, unless stated otherwise in GIB® technical literature, a serviceability life in excess of that stated and satisfy the requirements of NZBC Clause B2 Durability:
15 Years:
- GIB Aqualine® Wet Area Systems.

50 Years:
- GIB® Fire Rated Systems
- GIB EzyBrace® Systems
- GIB X-Block® Systems
- GIB Noise Control® Systems.

Provide the GIB® Product & System Warranty on the manufacturer's standard warranty form. Commence the warranty from the date of practical completion of the contract works.

Include with the warranty: a copy of the completed GIB® Installation Sign-Off sheet, and the GIB® Plasterboard Lining Systems Care and Maintenance bulletin.

2.6.2.3 AWCI Membership

Installation of GIB® Plasterboard Linings and associated GIB® Systems shall be carried out by a registered member of the Association of Wall and Ceiling Industries of New Zealand Inc. (AWCI). If not already provided and if requested, submit evidence of AWCI membership and relevant experience.

2.6.2.4 Quality Assurance

Ensure that the installation and finishing of GIB® Plasterboard Linings and associated GIB® Systems comply in all respects with the approved design drawings and specifications, and Building Consent.

Maintain and comply with industry-recognised quality control and assurance procedures to ensure that all stages of work are carried out to the highest standard.

2.6.2.5 Inspection & Acceptance of GIB® Plasterboard Linings

Carry out all necessary pre-installation, installation and finishing inspections of GIB® Plasterboard Linings for each area of work in accordance with the requirements of the GIB® Site Guide and associated industry Code of Practice (AWCI) recommendations.

Complete the GIB® Site Guide Pre-Installation Checklist prior to installing GIB® plasterboard linings, and relevant GIB® Performance Systems Installation Checklists.

Complete the GIB® Interior Plasterer/Stopper Installation Sign-Off Certificate upon completion and before handover for subsequent decoration.

2.6.2.6 Defective Materials & Work

Should defective materials and/or work be found at any time before the final acceptance of the work, it shall be rejected. Rejected GIB® Plasterboard Linings and GIB® Systems materials and work shall be repaired and/or replaced to the satisfaction of the Architect/Designer, without delay and at no additional cost to the Principal.

2.6.2.7 Producer Statement (other manufacturer's system)

Producer Statement PS1 - where required. Where GIB® Plasterboard Linings are installed as a component of another manufacturer's proprietary system, the system manufacturer shall furnish a completed Producer Statement PS1 (Design) as confirmation that the specified proprietary system as designed and documented complies with the relevant clauses of the New Zealand Building Code. The PS1 Producer Statement shall not serve as a product warranty or guarantee of compliance.

2.6.2.8 Substitution of GIB® Plasterboard Linings

GIB® plasterboard linings shall be as specified herein and as indicated on the approved drawings. The substitution of GIB® branded plasterboard linings and GIB® System components for alternative brands is not permitted under any circumstances.

The substitution of a specified GIB® plasterboard lining for an alternative GIB® plasterboard lining by the Contractor shall be in strict accordance with the requirements of the GIB® Site Guide: 2.3 - Board Substitution Options, and relevant GIB® Systems literature. Such substitutions shall only be permitted with the Architect's/Designer's written authorisation, and shall be at no additional cost to the Principal. Should any resultant extra work and/or redesign work be required to accommodate alternative GIB® Plasterboard Linings to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Contractor.

2.6.3 Performance

2.6.3.1 Limitations of GIB® Plasterboard

GIB® plasterboard products must NOT be:
- used in external situations, or
- exposed to water or be installed in situations where extended exposure to humidity above 90% RH can reasonably be expected, or
- exposed to temperatures in excess of 52°C for prolonged periods.

2.6.3.2 Bracing Performance - Timber Framing

Bracing Performance - GIB EzyBrace® Systems - Timber Framing. To the timber framed elements noted as 'Bracing' on the drawings, additionally comply with all relevant aspects of the GIB EzyBrace® Systems (2016) publication and GIB Ezybrace® Bracing Software according to the specified bracing unit rating, BRANZ Appraisal No.928, and other relevant product manufacturers' recommendations. Refer to separate specification GIB EzyBrace® Systems.

2.6.3.3 Wet Areas

Wet Area Plasterboard Linings - GIB Aqualine® Wet Area Systems. To the areas noted as ‘Wet Area’ on the drawings, additionally comply with all relevant aspects of the GIB Aqualine® Wet Area Systems publication, BRANZ Appraisal No.427 (2021), and other relevant product manufacturers' recommendations. Refer to separate specification GIB Aqualine® Wet Area Systems.

2.6.4 GIB® Plasterboard Linings

2.6.4.1 GIB® Standard Plasterboard, 13mm

GIB® Standard Plasterboard, 13mm. A 13mm thick standard plasterboard interior lining. Suitable for use in residential and commercial applications on walls and ceilings. Manufactured to exceed the requirements of AS/NZS 2588. Refer to the GIB® Site Guide.

Installed Location:

2.6.4.2 GIB Braceline® & GIB Noiseline®, 10mm

GIB Braceline® & GIB Noiseline®, 10mm. A 10mm thick dual purpose plasterboard interior lining, with a high-density core for extra bracing and noise control performance. Suitable for use in residential and commercial applications on walls and ceilings where increased bracing and noise control performance is required. Manufactured to exceed the requirements of AS/NZS 2588. Refer to the GIB® Site Guide.

Installed Location:

2.6.4.3 GIB Aqualine®, 13mm

GIB Aqualine®, 13mm. A 13mm thick moisture resistant plasterboard interior lining, with a water resistant polymer impregnated core to help prevent moisture penetration. Suitable for use in residential and commercial applications on walls and ceilings in spaces at risk from water or moisture damage. Manufactured to exceed the requirements of AS/NZS 2588. Refer to the GIB® Site Guide.

Installed Location:

2.6.5 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-operate with the Decorator to ensure that the specified Finish Levels for plasterboard jointing and finishing is achieved before decorating commences.

Coordinate with other trades to install GIB® Plasterboard Linings as required, and to ensure that:
- appropriate tolerances and clearances allow for adjacent internal linings, fixtures, fittings, services, etc; and
- the linings correctly allow for proper door and window installation; and
- penetrations for building services are correctly handled to maintain sheet integrity and system performance.

2.6.6 Workmanship

Where required by the NZ Building Act 2004, it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

Installation and finishing work of GIB® Plasterboard Linings shall be carried out by qualified and experienced tradespersons, familiar with the specified materials and installation and finishing techniques, in accordance with the GIB® Site Guide and the relevant GIB® product technical literature,

and to fully comply with all warranty requirements. Submit evidence of experience on request, e.g. National Certificate of Interior Systems, or Certified Business Member of AWCINZ.

GIB® Plasterboard Linings shall be jointed and finished to the specified Finish Levels in accordance with AS/NZS 2589 and GIB® Site Guide. Make all necessary arrangements for the quality assessment of plasterboard jointing and finishing Finish Levels prior to commencing decorating.

All cutting, fixing, jointing, finishing and sealing techniques shall be exactly as recommended by the manufacturer. All work shall be such as to leave a neat, efficient and robust installation, to the required standard and free from damage and defects.

Protect surrounding surfaces and areas from jointing compound splashes and sanding dust.

2.6.7 Delivery & Handling

Store GIB® Plasterboard Linings indoors, in neat, flat stacks off the floor, in dry conditions and without any sagging or distortion, in accordance with the GIB® Site Guide. Keep plasterboard linings, compounds and accessories dry, out of direct sunlight, and protected from damage, moisture and contamination at all times.

Do not use damaged or defective materials and products, or products that are beyond the designated shelf life.

Should a problem be encountered with any GIB® product during installation or delivery, immediately contact the GIB® Helpline on 0800 100 442. Do not continue to use the product that is not performing to specification or expectation. Keep samples of the product in question and where possible, document batch numbers and/or manufacturing dates.

Handle all products and materials in accordance with the manufacturer's requirements and relevant Product Data Sheets and GIB® Site Guide, and in a manner that prevents damage. Carry plasterboard sheets on edge, and avoid damage to sheet edges, ends, and surfaces.

Installers shall be familiar with and comply with the requirements of the GIB® Site Guide precautions for use, and use appropriate safety gear when handling materials.

Installers shall conform with all relevant WorkSafe NZ Guidelines and Codes of Practice.

2.6.8 Completion

Check that GIB® Plasterboard Linings have been installed in accordance with the GIB® Site Guide and GIB® Systems literature, and are finished to the specified finish levels.

Check for any damage and defective work - repair or replace as necessary to the required standard.

Ensure that inspection and assessment of the plasterboard Finish Level has been carried out, and that written agreement stating the completed jointing and finishing is acceptable for subsequent surface sealing and decoration has been provided.

Ensure that the GIB® Installation Sign-Off Certificate has been completed and signed by the Interior Plasterer/Stopper.

Leave all of this work complete and to the required standard in accordance with the manufacturer's warranty requirements, as shown on the drawings and the conditions of the Building Consent.

Clean up thoroughly and leave the finished work and surrounding surfaces clean and free of contamination from compound splashes and dust. Remove all associated rubbish and excess material from the site.

Issue to the Owner a copy of the GIB® Plasterboard Lining Systems Care and Maintenance bulletin, and a copy of the GIB® Product and System Warranty.

2.7 Thermakraft Underlay, DPM, DPC & Tapes

2.7.1 Scope

Supply and install Thermakraft Underlays and Membranes, as specified herein, to the locations identified on the drawings, complete with all accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with Thermakraft Ltd technical information and installation requirements (check www.thermakraft.co.nz, or call 0800 806 595 for the latest editions), other relevant product manufacturers' recommendations, and as shown on the design drawings.

No substitutions are permitted for the specified products from Thermakraft Ltd.

The following is a list and a general description of the extent of the Thermakraft Underlays and Membranes works, which are more specifically defined in the contract documents, required for the completion of the contract works:

2.7.2 Requirements

2.7.2.1 Safety

Comply with the Health and Safety at Work Act 2015 (HSWA), and with all relevant Health and Safety at Work Regulations 2016, and with all relevant WorkSafe New Zealand (WorkSafe) Approved Codes of Practice and WorkSafe Information and Guidance, particularly those for construction and building maintenance.

2.7.2.2 Warranty

Kingspan Thermakraft Product Warranty Statement:

- 15 Years Warranty - for all Thermakraft warranted products installed, according to the warranty conditions.
- Provide the Thermakraft Ltd Product Warranty on the manufacturer's standard warranty form.
- Commence the warranty from the date of permanent installation.

2.7.2.3 Substitutions

Thermakraft Ltd products shall be as specified herein and as indicated on the approved drawings. The substitution of Thermakraft branded products for alternative brands is not permitted under any circumstances.

The substitution of a specified Thermakraft product for an alternative Thermakraft branded product by the Contractor shall only be permitted with the Contract Administrator's written authorisation, and shall be at no additional cost to the Principal. Should any resultant extra work and/or redesign work be required to accommodate alternative Thermakraft branded products to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Contractor.

2.7.3 Damp-Proof Membrane

Thermathene Black (250µm). A 250 micron thick (0.25mm), tear resistant, recycled polyethylene film sheet concrete underlay. Coloured black.

Installed over nominal 10mm (max. 25mm) thick compacted sand blinding layer, over a properly prepared base course, as a moisture vapour barrier under concrete slabs on-ground (prior to concreting), in accordance with the manufacturer's requirements and as shown on the drawings (Install Guide).

Thermathene Black must be laid in a continuous manner with all laps minimum 150mm, and penetrations to be taped with Thermakraft White General Purpose Tape. Tape-seal around penetrations. Inspect immediately before pouring concrete and repair any holes or other damage.

Installed Location: ANY NEW CONCRETE PLACEMENT WORK - ENTRY STEPS

2.7.4 Damp-Proof Course

Supercourse 500 DPC. A 0.75mm thick, high-impact, single-layer Polyethylene film, embossed on both sides. Available in 50mm 75mm, 90mm, 100mm, 150mm, 200mm, 250mm, 300mm, and 500mm roll widths. Supercourse 500 DPC is suitable for use as a separation barrier between most incompatible and dissimilar materials.

Used as a general damp proof course (DPC) for separating timber and wood-based products and metal from concrete, masonry, brick, and stone surfaces, and as a moisture barrier (Install Guide).

Also used as a concealed flashing behind brick veneer cladding in accordance with NZS 4229 and NZBC E2/AS1.

Installed in accordance with the manufacturer's requirements, BRANZ Appraisal No.329, and as shown on the drawings.

2.7.5 Roof Underlay

Covertek 407. A self-supporting, fire-retardant, absorbent, breathable, synthetic non-woven polyolefin underlay.

Can only be used in lined applications. Section E2 of the NZBC defines a lining as "the rigid sheet covering for a wall, ceiling or other interior surface." Must not be used in unlined buildings such as unlined garages, sheds, soffits or canopies.

Covertek 407 is CodeMark assured with the NZ Building Code: CodeMark Certificate of Conformity No:CM30028-RevI, issued by Global-Mark Pty Ltd.

Installed as a roof underlay over timber or steel roof framing in accordance with the manufacturer's requirements and BRANZ Appraisal No.651.

Covertek 407 roof underlay can be used directly under direct-fixed roof claddings, or directly under roof cavity battens or tile battens in accordance with Thermakraft requirements.

Covertek 407 roof underlay must installed in a manner that prevents ponding of water. Refer to Covertek 407 Installation guide for underlay support requirements. Support requirements are dependent upon pitch, purlin spacing and installation direction of underlay.

Do not leave Covertek 407 exposed on roofs for more than a total of 7 days before covering.

Installed Location:

2.7.6 Window Flashing Tape

2.7.6.1 Aluband Bituminous Adhesive Flexible Window Flashing Tape

Aluband Window Flashing Tape. A polymeric faced, bituminous modified, self-adhesive tape with a release backing paper. Must be used in conjunction with the Thermakraft Corner Moulds, and when used with the declared Kingspan Thermakraft flexible underlays is part of the Thermakraft OneWrap System.

Aluband Window Flashing Tape is part of the Thermakraft ONE WRAP System - a total building wrap solution.

Aluband Window Flashing Tape is suitable for use on timber or steel framed buildings, in conjunction with a compatible flexible underlay, around framed joinery openings as a secondary weather barrier, in NZS 3604 Wind Zones up to and including 'Extra High'.

Aluband Window Flashing Tape can be used on the sill and lintel of framed joinery openings, and to seal flashing upstands to a flexible underlay.

Physical Properties:
- Thickness: 0.65mm.
- Installation temperature range: minimum 5°C; maximum 30°C.
- Maximum UV exposure: 42 days.
- Tape width: Available in 75mm, 150mm, and 200mm wide rolls.

The width of Aluband Window Flashing Tapes used shall be selected to suit the depth of framed openings and Thermakraft installation requirements.

Installed in accordance with the requirements of the Thermakraft Aluband Application & Installation Guide and BRANZ Appraisal No.878, to the locations and details shown on the drawings.

Compatible with all Thermakraft building underlays. Unaffected by LOSP or other solvent based treated timber. However, LOSP or other solvent based treated timber must have sufficient time for the solvent chemical to flash off in well ventilated area. Recommended minimum 7 days.

Thermakraft Corner Moulds MUST be used at flashing corners (see installation guide).

Do not leave Aluband Window Flashing Tape exposed to weather and UV light for more than 42 days after installation.

Flashing Tape Size:
Installed Location:

2.7.7 Underlay Penetration Seals

2.7.7.1 OneSeal - Multi-fit pipe and cable penetration seals

Thermakraft OneSeal, multi-fit pipe and cable penetration seals. A range of pipe and service penetration seals consisting of soft, flexible EPDM membrane with a self-adhesive flange.

OneSeal multi-fit pipe and cable penetration seals are part of the Thermakraft ONE WRAP System - a total building wrap solution, and are a patented airtight solution for round or rectangular pipes, cables or conduits when passing through underlay barriers.

Pipe Seals
Four pre-notched rings for pipes sized from 15mm to 110mm diameter.

Cable Seals
1 x conduit – 55mm to 80mm diameter;
OR
2 x cables – 10mm to 22mm diameter; and
4 x cables – 7mm to 10mm diameter.
Installed in accordance with the manufacturer's requirements and BRANZ Appraisal No.942, with stand-alone flexible wall underlay over timber or steel wall framed walls on buildings situated in NZS 3604 Wind Zones up to and including 'Very High'.

Installed in accordance with the manufacturer's requirements and BRANZ Appraisal No.942, with flexible wall underlay used over a rigid wall underlay on buildings situated in NZS 3604 Wind Zones up to and including 'Extra High'.

2.7.8 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.

Coordinate with other trades to install Thermakraft Underlays, DPMs, and DPCs as required.

2.7.9 Workmanship

Where required by the NZ Building Act 2004 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

All installation work shall be carried out by experienced and competent tradespersons, familiar with the specified products and installation techniques, in accordance with the manufacturer's requirements, and to fully comply with all warranty requirements.

All cutting, joining, and fixing techniques shall be exactly as recommended by the manufacturer, and carried out with the use of suitable tools and equipment appropriate for the application. All work shall be such as to leave a neat, efficient, and weathertight installation.

2.7.10 Delivery & Handling

Store underlay rolls on end, undercover, on a flat, clean and dry surface. Keep stored materials dry, out of direct sunlight, and protected from damage and contamination at all times.

Handle materials in accordance with the manufacturer's requirements and in a manner that prevents damage to or deterioration of the product.

Do not used damaged or defective materials, or products that are beyond their designated shelf life.

Installers shall be familiar with and comply with the manufacturer's safe handling requirements and precautions for use, and shall use appropriate safety gear when handling materials.

Installers shall conform with all relevant WorkSafe NZ Guidelines and Codes of Practice - including General risk and workplace management - part 1.

2.7.11 Completion

Check that all underlays have been installed correctly and are properly supported, and that all underlay edges, joins and ends are correctly finished prior to closing off with claddings - all in accordance with Thermakraft installation requirements.

Check installed membranes and underlays for defective work and damage - replace and/or repair as necessary to the required standard.

Leave all of this work complete, and free of defects, and to the required standard in accordance with the manufacturer's warranty requirements.

Issue to the Owner a copy of the Thermakraft maintenance requirements and the Thermakraft product warranties for the installed products.

2.8 Deck

2.8.1 Preparation

Ensure that all bolts, nails, screws and structural brackets as noted for use in the deck construction are appropriate for the Exposure Zone, timber treatment etc. Ensure that all cut or drilled surfaces of H4 and H5 treated timbers are flood coat re-treated, with the product recommended by the original treatment plant, before installation. All foundations taken down to firm undisturbed ground, concrete 20MPa, and with all aspects as specified in Concretor. Bearers spaced off adjacent supporting walls and fixed as detailed, and sill junction to adjacent access doors drained, flashed, sealed and finished as detailed.

2.8.2 Installation

Accurately set up, temporarily brace, and fix as noted or detailed all timber posts, beams, joists, braces, etc. as shown on the drawings, with all joints neatly fitted to ensure close contact over the full surface of the joint. Bolt holes 1mm larger than the bolt, and bolts re-tightened just prior to completion to remove any slack consequent on timber shrinkage. Very slightly arris timber edges where appropriate to avoid splintering, and cut any required rebates, grooves, etc. before erection.

2.9 Timber Weatherboard Cladding

2.9.1 Scope

Supply and install the selected Timber Weatherboard Cladding type(s) to the locations shown on the drawings, complete with all accessories. All aspects of this work shall be carried out to comply with the requirements of the New Zealand Building Code, relevant Standards, and in accordance with any specific manufacturer's requirements, other relevant product manufacturers' recommendations, and as noted and detailed on the drawings.

The following is a list and a general description of the extent of Timber Weatherboard Cladding work, which are more specifically defined in the contract documents, required for the completion of the contract works:

PROPSOED CLADDING TO REPLACE EXISITN PLASTER AND FIBRE CEMENT CLADDING ON LEVEL ONE OF BUILDING.

2.9.2 Horizontal Weatherboard Profile

Standard Bevel-back Weatherboard: ex.200mm x 25mm, machined to NZS 3617 and/or BRANZ Bulletin 411. Manufactured from the selected timber species to the finish specified.

Installed Location:

2.9.3 Timber Species & Face Finish

Standard Bevel-back Weatherboard shall be run from H3.1 treated, finger-jointed dressing-grade Pinus Radiata. Durability shall be to NZS 3602 Table 2A and NZBC B2/AS1, and materials compatibility through all cladding elements shall comply with E2/AS1 tables 20, 21 and 22.
Handle the weatherboards carefully to avoid damage to edges and faces, store flat and keep

packaged until required for installation, and check that the boards moisture content at installation is approx. 14% mid-summer through to 18% midwinter. Ensure that all cut edges and ends are fully primed prior to fixing.

2.9.4 Weatherboard Finish

Standard Bevel-back Weatherboards run from H3.1 treated Pinus Radiata shall be pre-primed to AS/NZS 2311 with a factory-applied oil based primer to all four sides.

2.9.5 Preparation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-ordinate with other trades to ensure that the weatherboards correctly allow for door and window installation, and for the locations of pipes, outlets, and fittings installed by others.

Horizontal Weatherboards Cavity-Fixed on Timber Framing - check all aspects of preparatory works, including, but not limited to:
- Check that the timber wall framing complies with the approved design drawings, is plumb and in true alignment, has studs at maximum 600mm centres and nogs/dwangs at maximum 800mm centres for horizontal cladding, that any additional framing required for fixing at corners, openings and soffits is correctly in place, and has a maximum moisture content of 20% at the time of weatherboard cladding installation.
- Check that the flexible wall underlay, as specified, has been installed in accordance with the manufacturer's recommendations and NZBC requirements, with all finishing tapes, flashings, etc., at windows, doors, corners and penetrations all correctly incorporated to give a continuous seal, and that all preparatory materials are lapped such that any water will run down to the exterior
- Check that the cavity battens and base vent strip are correctly installed and appropriate for the weatherboard cladding installation.
- For cavity construction without a rigid wall underlay and where the studs are at greater than 450mm centres, check that appropriate additional restraint is correctly installed against the underlay to prevent bulk insulation from pushing the underlay into the cavity space.
- Check junctions to all other building elements and cladding systems and ensure that all necessary works have been completed that will enable the weatherboards to be installed, and that the work of other trades does not negatively impact on or reduce the minimum clearances required by the NZ Building Code between the cladding and ground, roof and/or deck junctures.

2.9.6 Fixing

Fix pre-primed Pinus Radiata Standard Bevel-back Weatherboards with hot-dipped galvanised jolt head nails, length to embed minimum 35mm into the framing, holes pre-drilled 1mm less than the nail gauge where liable to splitting, and the nail at a slight upward slope into the framing.
Install the weatherboards with one nail positioned 10mm above the top of the lower board at each stud. Punch nails 3mm below the board surface, prime nail holes and fill prior to sand and finishing.
All soakers and flashings hot-dipped galvanised steel.

Fix pre-primed Standard Bevel-back Weatherboards with Grade 316 stainless steel, annular grooved jolt head nails, length to embed minimum 35mm into the framing, holes pre-drilled 1mm less than

the nail gauge where liable to splitting, and the nail at a slight upward slope into the framing.
Install the weatherboards with one nail positioned 10mm above the top of the lower board at each stud. Punch nails 3mm below the board surface, prime nail holes and fill prior to sand and finishing.
All soakers and flashings stainless steel.

2.9.7 Flashings

Flashing materials shall be in accordance with the requirements of NZBC E2/AS1 Sections 2.2 Materials, 4.0 Flashings, Table 20 - Material Selection, Table 21 - Compatibility of Materials in Contact, and Table 22 - Compatibility of Materials Subject to run-off, and as noted on the drawings.
All flashings around windows, doors and other openings and apertures, at internal and external corners, inter-storey junctions, soffit junctions, and at junctions with other building elements and cladding systems, etc., shall all be carefully constructed, fixed and finished to the details shown on the drawings.

2.9.8 Installation

2.9.8.1 Bevel-back Weatherboard - Cavity Fix

Back flash all internal and external corners as detailed.
Carefully set-out Standard Bevel-back Weatherboard cladding horizontally over the cavity battens and fix the base weatherboard to the framing, level and true to line along the base line, 50mm minimum or as detailed, below the bottom plate or floor structure. From the base board upwards, install the weatherboards over the cavity battens and fix to the framing, keeping cladding lines consistent, level and true along walls and around corners.
Install full length weatherboards where possible. Where joints are unavoidable, scarf the weatherboards at 45º and fix to solid framing through the overlapping board just clear of scarf join - stagger weatherboard joints to avoid clustering. Where boards are coated, ensure all cut ends and fresh timber is double coated with a suitable sealer/primer.
Finish Standard Bevel-back Weatherboards, weatherboard trim, flashings and accessories at internal and external corners, window and door openings, parapets, and at junctions with other building elements and cladding systems exactly to the details shown on the drawings.

2.9.9 Delivery & Handling

2.9.9.1 Delivery & Handling

Upon delivery to site, inspect weatherboards and accessories and reject any items found to be damaged, defective or substandard. Contact the manufacturer/supplier for replacement.

Store weatherboards, flashings and accessories undercover, flat and true, clear of the ground by at least 150mm and supported on dry, clean timber bearers at maximum 900mm centres, or as recommended by the weatherboard manufacturer. Keep stored materials and accessories dry and protected from damage and contamination at all times, and free from bending, distortion or excessive compression. Do not allow water to enter the stack.

Do not use damaged or defective weatherboards or accessories. Dock any oversized knots, unacceptable grade characteristics or damaged areas of weatherboard.

Weatherboards must be dry prior to installation. Do not install weatherboards during periods of wet weather. Seal all cut ends and fresh-cut timber with two coats of the selected exterior primer or coating.

Handle weatherboards in accordance with the manufacturer's recommendations and in a manner that prevents damage to or deterioration of the material, including surface marking.

Installers shall be familiar with and comply with the manufacturer's safe handling requirements and precautions for use, and shall use appropriate safety gear when handling materials.

Installers shall conform with all relevant WorkSafe NZ Guidelines and Codes of Practice, including Best practice guidelines for working at height in New Zealand and General risk and workplace management – part 1.

3 CLADDING & PRECLADDING

3.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

3.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

3.3 StoTherm Insulated Facade System

3.3.1 Scope

Supply and install StoTherm Insulated Facade System, as specified herein, to the locations identified on the design drawings, complete with all system components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with Stoanz Ltd StoTherm Insulated Facade System technical literature and drawings (check www.sto.co.nz, or email info@sto.co.nz, or call 04 801 4749 for the latest editions), BRANZ Appraisal No.478, and other relevant product manufacturers' recommendations.

No substitutions are permitted for StoTherm Insulated Facade System.

For the purpose of this specification, all Stoanz Ltd StoTherm Insulated Facade System technical literature and drawings and BRANZ Appraisal are collectively referred to as the 'Sto Technical Literature'.

The following is a list and/or general description of the extent of the StoTherm Insulated Facade System works, which are more specifically defined in the contract documents, required for the completion of the contract works:

3.3.2 Sto Render System

3.3.2.1 StoArmat Render System

StoArmat Render System. Refer to subsequent Render System clauses.

System Renders & Protective Coatings:
- Base Render: Multiscreed, or StoLevell Novo, or StoLevell Uni.
- Reinforcement Render: StoArmat Classic Render - reinforced with Sto European Mesh.
- Finishing Render: Stolit K 1.0mm, or Stolit K 1.5mm, or Stolit K2.0mm, or Stolit K 3.0mm, or Stolit MP, or Stolit MP Natural, or Stolit Milano.
- Protective Coating - Facade Paint (Stolit K surfaces): StoColor Maxicryl, or StoColor Lastic, or StoColor Lotusan, or StoColor X-black.
- Protective Coating - Clear Sealer (Stolit MP surfaces): S-Protect SC Stay Clean Sealer.
- Waterproofing: StoFlexyl - reinforced with Sto European Mesh.

3.3.3 StoTherm Panels

3.3.3.1 StoTherm Panel M-Grade 50mm

StoTherm Panel, 50mm M-Grade. 2700 x 1200 x 50mm thick, M-Grade EPS, self-extinguishing panel expanded polystyrene with a nominal density of 20kg/m³, manufactured to AS 1366.3 by an approved manufacturer.

Installed as a component of the StoTherm Insulated Facade System in accordance with the Technical Literature. StoTherm Panels must be installed full size where possible, vertically orientated with a tight fit. Where horizontal panel joints are unavoidable, the vertical panel joints must be offset from the panels below to avoid continuous vertical joint lines. After fixing, all gaps or voids in the panel joints must be filled with Sto Adhesive Foam before proceeding with rendering.

Installed Location:

3.3.4 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the design drawings and in accordance with Sto Technical Literature.

Coordinate with trades as necessary the locations of pipes, outlets, meter boards and other fittings and equipment installed by others, and to install the StoTherm Insulated Facade System as required.

3.3.5 Workmanship

Where required by the NZ Building Act 2004 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

This work must be undertaken by a Sto registered LBP Contractor. On completion of the installation, the installing LBP (registered Sto Contractor) shall complete and sign a Restricted Building Work (RBW) memorandum and shall issue a copy to the Building Consent Authority and, where applicable, to the Main Contractor.

All associated work shall be carried out by experienced and skilled PPCS (Proprietary Plaster Cladding Systems) Registered Tradesmen, certified by Stoanz Ltd to install and apply StoTherm Insulated Facade System components and accessories, in accordance with Sto Technical Literature and warranty requirements, to best trade practice.

Carry out and complete all required Pre-cladding, Pre-coating, and Final Checklists, separately and in that order, as each stage is completed and before commencing the next stage.

Make all necessary provisions to protect adjacent finished work and surfaces from damage and contamination during installation. Mask off all windows and doors and other exposed fixtures and fittings before coatings are applied.

All cutting, jointing, fixing, sealing and finishing techniques shall be carried out using suitable tools and equipment and as recommended by Sto.

No plastering shall be undertaken during wet weather or when the air and substrate temperature is outside the range of +5°C to +30°C.

Sto coatings must be protected from rain for the first 24 hours, and from hot dry winds and direct sunlight for the first 16 hours to aid curing.

All work shall be such as to leave a neat, efficient, robust and weathertight installation, to the required standard, free from damage and defects.

The Sto registered LBP Contractor shall supply a PS3 Producer Statement at the time of application for Code Compliance Certificate.

3.3.6 Delivery & Handling

Upon delivery to site, inspect StoTherm Insulated Facade System materials and reject those items found to be damaged, defective or substandard, and contact Stoanz Ltd immediately.

Store all components and accessories undercover in accordance with Sto recommendations. Keep stored materials dry, out of direct sunlight and protected from damage, distortion and contamination.

Do not use damaged or defective materials, or products that are beyond their designated shelf life.

Should a problem be encountered with any product supplied by Stoanz Ltd, immediately contact Stoanz Ltd on 04 801 7794. Do not continue to use the item that is not performing to specification or expectation. Keep the item in question, and where possible, document numbers and/or manufacturing details.

Handle all materials in accordance with the manufacturer's recommendations, and in a manner that prevents damage and does not reduce its performance.

Sto render systems must only be applied when the air and substrate temperature is within the range of +5°C to +30°C.

Installers shall be familiar with, and comply with, the manufacturer's safe handling requirements and precautions for use, and shall use appropriate safety gear when handling materials.

Installers shall conform to all relevant WorkSafe NZ Guidelines and Codes of Practice - including the OSH Guidelines For the Provision of Facilities and General Safety in the Construction Industry.

3.3.7 Installation

3.3.7.1 General

Install StoTherm Insulated Facade System complete with all system components and accessories required for proper installation and performance, in accordance with Sto Technical Literature and as shown on the design drawings.

Ensure that the current, up-to-date Sto Technical Literature is readily available on site for reference during installation. Where there is any doubt, contact Stoanz Ltd on 04 801 4749.

Confirm the layout and location of movement control joints, the layout of cavity battens, and any specific cladding detailing requirements prior to installation.

StoTherm Panel cladding at windows, doors and other openings, corner junctions, inter-storey junctions, soffit junctions, roof/wall junctions, parapets, pipe penetrations, shall be constructed to the details shown on the design drawings.

Refer to Fixing clause for StoTherm Panel fixing type and placement etc.

3.3.7.2 Surface Preparation

Following the installation of StoTherm Panel surfaces, rasp back any excess jointing adhesive and surface irregularities before application of Sto render system coatings.

3.3.8 Fixing

3.3.8.1 StoTherm 50mm Panel Fixing, Timber Frame - Low-High Wind Zones

Fix StoTherm 50mm Panels through the cavity battens and cavity spacers into timber framing with 100 x 4.0 mm hot-dip galvanised flat-head nails with a Sto Ø40mm HDPE yellow washer, to the specified spacings for panel edges and intermediate studs in accordance with Sto Technical Literature. Fixings shall be carefully driven home 2-3mm compressing the panel in a skewed manner and achieve a minimum 30mm embedment into timber framing. Where rigid underlays are used, the fixing length shall be increased by a minimum of the thickness of the underlay to maintain the 30 mm embedment.

Fixing Positions:
- Panel Edges, Studs, Top & Bottom Plates: maximum 300mm centres.
- Nog/Dwang Lines: 1 x fixing into each nog/dwang at mid-nog/dwang length.
- Locate edge fixings no closer than 50mm from the edge of StoTherm Panels.

3.3.9 Completion

Check that the StoTherm Insulated Facade System has been correctly installed, with render coatings and facade paint applied and finished to the specified texture and colour.

Check that all surfaces, edges, corners, rebates, angles, reveals, drip edges and control joints are complete, true and accurately aligned and as indicated on the design drawings.

Check for damage and defects - replace or repair as necessary to the required standard in accordance with Sto requirements.

Ensure that the work of other trades does not negatively impact on or reduce the minimum clearances required by the NZ Building Code, between the cladding and ground, roof and/or deck junctures.

Leave this work complete and weathertight, and to the required standard in accordance with the Sto Warranty requirements.

Leave completed works and surrounding surfaces clean and free of rubbish and debris. Remove all rubbish and excess material from the site.

Issue to the Owner a copy of the Stoanz Ltd Sto Warranty with StoService Assurance, and a copy of the Stoanz maintenance requirements.

Provide all necessary Producer Statements.

4 EXTERNAL WINDOW & DOOR JOINERY

4.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

4.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

1734:1997(AS/NZS)	Aluminium and aluminium alloys - Flat sheets, coiled sheet and plate
1866:1997(AS/NZS)	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
2208:1996(AS/NZS)	Safety glazing materials in buildings
4211:2008(NZS)	Specification for performance of windows
4223.1:2008(NZS)	Code of practice for glazing in buildings - Glass selection and glazing
4223.2:2016(NZS)	Glazing in buildings - Part 2: Insulating glass units
4223.3:2016(NZS)	Glazing in buildings - Part 3: Human impact safety requirements
4223.4:2008(NZS)	Glazing in buildings - Part 4: Wind, dead, snow, and live actions
4667:2000(AS/NZS)	Quality requirements for cut-to-size and processed glass
4668:2000 (AS/NZS)	Glossary of terms used in the glass and glazing industry
AS/NZS 4666:2012	Insulating glass units

4.3 Aluminium Windows & Doors

4.3.1 Scope & Design Performance

4.3.1.1 Scope:

Supply and install Aluminium Windows and Doors, as specified herein, to the locations and details shown on the design drawings, complete with all necessary components and accessories required for proper installation and performance.

All aspects of this work shall comply with the NZ Building Code, related manufacturer's technical literature and other relevant product manufacturers' recommendations. test

4.3.1.2 Wind Performance - Wind Zone - Medium:

Aluminium Windows & Doors shall comply with the requirements of NZS 4211 for all relevant clauses.

Wind Load - Non-Specific Design Wind Zone Classification:

- Aluminium Window and Door joinery installation is located in a NZS 3604 Wind Zone: M - Medium; with a maximum pressure of 0.68kPa SLS and 0.96kPa ULS.

4.3.1.3 Thermal Performance - Climate Zone 5:

Aluminium Window & Door joinery installation is located within the boundaries of Climate Region Zone 5 as defined in NZBC - H1/AS1. Unless specified otherwise, the combination of glazing and window/door frame shall have a minimum required R-Value in accordance with this Climate Zone. Refer to drawings and schedules.

4.3.1.4 Durability Performance - Exposure Zone B - Low:

Aluminium Window and Door joinery installation is located in a NZS 3604 Exposure Zone B: Low - within an inland area with little risk from wind-blown sea-spray salt deposits.

ISO 9223 Category: C2 Low: Characterised by no obvious marine influences. Typically, more than 1000 metres from the exposed coasts or more than 500 metres from industrial emissions.

All aspects of the Aluminium Window and Door joinery, including hardware, shall meet the durability requirements for the given Exposure Zone in accordance with NZBC B2.

4.3.2 Requirements

4.3.2.1 Safety:

Comply with the Health and Safety at Work Act 2015 (HSWA), and with all relevant Health and Safety at Work Regulations 2016, and with all relevant WorkSafe New Zealand (WorkSafe) Approved Codes of Practice and WorkSafe Information and Guidance, particularly those for construction and building maintenance.

4.3.2.2 Warranty:

Window & Door Materials & Workmanship Warranty:

- Standard Manufacturers Window and door product warranty periods apply unless noted otherwise in the contract documents
- Commence the warranty from the date of practical completion of the contract works.

4.3.2.3 Shop Drawings:

Prepare and submit to the Main Contractor for verification and approval prior to the commencement of fabrication works, Shop Drawings describing the general arrangement and connection to the building envelope of the specified window & door systems.

These shall include, but not be limited to:

- Design calculations - where required;
- Dimensioned elevations of all joinery elements (typical scale = 1:50; minimum scale = 1:100);
- Complete details of the installation construction, connections and all support systems (typical scale = 1:2; minimum scale = 1:5);

- Sealant types and backing rods, etc;
- Provision for movement, thermal, wind load and/or seismic - where required;
- Coordination requirements/issues with other works and trades - where applicable;
- A schedule of materials, finishes, componentry, fittings, fixings and fastenings - where required.

4.3.2.4 Samples:

As required, provide samples of the specified windows & doors, including specified fittings, aluminium finish and colour, all as agreed, for verification by the Contract Administrator. Fabrication should not commence until approval has been gained.

4.3.3 Aluminium Windows

4.3.3.1 Aluminium Windows:

Aluminium Windows shall be manufactured to manufacturer's standard details.

Specification:

- Mullions and transoms, with or without external fins, shall be thermally broken, and in accordance with the manufacturer's Span Tables for compliance with the project wind load.
- Sashes shall be box sashes - glass captive, or beaded sash - capable of reglazing without dismantling sashes.
- Thermal breaks are to be provided as indicated on the Window & Door schedule.
- Glass: Refer to Glazing and Glass clauses.
- Finish: Refer to Aluminium Finish clause
- Furniture: Refer to Hardware clause.

Configuration (as indicated on the drawings):

- Casement
- Awning
- Sliding
- Double hung
- Bi-fold

Refer to the Window & Door Schedule drawings for specific requirements of individual elements.

Manufactured and installed in accordance with the manufacturer's requirements to the locations, configurations and details shown on the drawings and schedules.

4.3.4 Aluminium Doors

4.3.4.1 Aluminium Doors:

Aluminium Doors shall be manufactured to standard manufacturer's requirements.

Specifications:

- Frames shall be manufactured, in accordance with the manufacturer's Span Tables, and to suit joinery configurations and opening swings.
- Stiles and rails shall be box sections - glass captive, or beaded - capable of reglazing without dismantling doors.
- Thermal breaks are to be provided as indicated on the Window & Door schedule.
- Glass: Refer to Glazing and Glass clauses.
- Finish: Refer to Aluminium Finish clause.
- Furniture: Refer to Hardware clause.

Configurations (as indicated on the drawings):

- Hinged Doors (single): Inward opening; outward opening. Left-hand swing LH; Right-hand swing RH. With coupled overlight; with coupled sidelight.
- French Doors (double): Inward opening; outward opening. Single-paired; double-paired (open-out fold-away). With coupled overlight; with coupled sidelight.
- Bifold door - 2-Panel Layback, 3-Panel Layback, 2-/2-Panel Layback. Can be combined with 1-Panel Hinged, 1-Panel Fixed.
- 'S' sliding panel, and 'F' fixed panel: F-S, S-F, F-S-F, F-S/S-F. Moving panels slide inside/behind fixed panels.

Refer to the Window & Door Schedule drawings for specific requirements of individual elements.

Manufactured and installed in accordance with the manufacturer's requirements to the locations, configurations and details shown on the drawings and schedules.

4.3.5 Glazing Platform

4.3.5.1 Special Double glazing:

Maximum 22mm thick, air or gas-filled, sealed insulating glass units (IGUs). Glass type as specified and in accordance with NZS 4223.1 and NZS 4223.3. Double glazed IGUs shall be manufactured and installed in accordance with AS/NZS 4666. Factory-fitted to Aluminium Windows & doors, as identified on the drawings and schedules.

- IGU external glass type:
- Gas type:
- IGU internal glass type:

4.3.6 Glass

4.3.6.1 Low - E Glass:

Heat-reflective coated surface, annealed float glass, complying with AS/NZS 4667 and in accordance with NZS 4223.1. Installed to the locations identified on the drawings and schedules.

Location:

4.3.7 Finish

4.3.7.1 Powder Coated Aluminium:

Polyester powder coating in accordance with WANZ Powder Coating Quality Assurance System and AAMA 2603-98 performance is required.

4.3.8 Flashing & Support Bars

4.3.8.1 Aluminium Head Flashing:

Aluminium Head Flashings shall be manufactured from extruded aluminium, suitably sized to suit the claddings and construction types in accordance with NZBC E2/AS1 and as shown on the drawings.

Except where specified otherwise, aluminium head flashings shall be powder coated and colour-matched to the aluminium joinery.

4.3.8.2 Aluminium Sill Support Bar - Cavity Fix:

Extruded mill-finish aluminium sill support bar, with built-in drainage and ventilation, for continuous support to the window or door unit. Sill support bars shall be used and installed in accordance with the requirements of NZBC E2/AS1, and comply with BRANZ Evaluation Method EM6, and be sized to suit the cladding thickness and weight of the window or door.

4.3.8.3 Support Angles:

Support angles shall be manufactured from either extruded aluminium or galvanised mild steel. Support angle sizes, fixing and installation requirements as shown on the drawings.

4.3.9 Hardware

Hardware as selected in the 'Door and Window' schedule is to be installed to Manufacturers requirements. Where not specified hinges, stays, catches, fasteners, latches, locks and furniture as offered by the window and door manufacturer shall be used. Factory fit all required and scheduled hardware.

Where specified, all lockable window & door hardware is to be keyed alike. Provide all keys with the joinery and provide to Client as required.

4.3.10 Fabrication

4.3.10.1 Fabrication:

Fabricate Aluminium Windows & Doors in accordance with the approved window schedule, approved workshop drawings and other project documentation.

Unless noted otherwise, the approved window schedule, joinery fabrication shall include the installation of all glazing, hinges, stays, running gear, and other hardware items scheduled on the approved shop drawings.

As necessary, provide protection and temporary bracing required for the general handling of the joinery elements. Ensure that all opening doors and windows are temporarily secured for transportation and general handling.

4.3.11 Co-operation

4.3.11.1 Co-operation:

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.

Coordinate with other trades, as required, on the installation of the Aluminium Windows & Doors to the required layout, details and tolerances.

4.3.12 Workmanship

Aluminium Windows & Doors will be manufacturerd in workshops containing all mechanical equipment appropriate for the work, and by experienced and competent tradesmen who are familiar with the techniques and materials specified.

The manufacturer will co-ordinate with other trades to establish the exact sizes for all frames before fabrication. Frames and sashes will be fabricated true, square, rigid, and 'out of wind', with all joints strongly mechanically fixed, and with mitres tight and fully sealed. Potential thermal, wind and seismic movements will be accommodated within the construction. All cavities will drain to the exterior, and all drilling swarf etc. will be removed during fabrication.

Stays, hinges, running gear and glazing will be installed as scheduled (the Designer will be notified if any scheduled hardware of fixing position appears to be inappropriate for this project).

Hardware will be fixed true to line and position, and adjusted and oiled as required for correct operation.

Glass will be cut true and square, sized to provide correct edge clearances, blocked into place as required, and all units will be delivered either pressure fit, pocket glaze, or beaded/wedged, unless site glazing is required. Glazing gaskets will be compatible with all adjacent materials, and cut 1% over-length to absolutely avoid stretching during installation. Frames will be braced etc. as necessary for transportation to the site.

Flashings as detailed will be supplied. Flashing materials will be compatible with the Aluminium Windows & Doors.

4.3.13 Preparation

4.3.13.1 Preparation:

Prior to installation, carry out all necessary inspections of the supporting structure to ensure all preliminary work is complete. Do not commence installation until all necessary preliminary work by others is complete and to the required standard. The commencement of work on each section of the

installation shall be deemed to indicate full acceptance by the Installer that all preliminary work by other trades is complete and to the required standard.

Supporting structures shall comply with the NZ Building Code, and must be structurally sound and dimensionally stable and in the correct alignment, true to line and level (and grade for sloped balustrades).

Confirm the location of all movement control joints prior to the commencement of the works.

Concrete:
- Supporting reinforced concrete elements shall comply with NZS 3101, or NZS 3604.
- New concrete must have aged for a minimum of 28 days prior to installation.

Concrete Masonry:
- Supporting reinforced concrete masonry elements shall comply with NZS 4229, or NZS 4230 and AS/NZS 1170.

Timber Framing:
- Supporting timber-framed structures shall comply with NZS 3604, or NZS 3603 and AS/NZS 1170.

Structural Steel:
- Supporting steel structures shall comply with NZS 3404.

4.3.14 Delivery and Installation

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and the construction principles that are embodied in the Acceptable Solutions.

Arrange for delivery of the Alumnium Windows & Doors to the site only when a suitable storage situation is available for them, handle the joinery in accordance with the manufacturers requirements, avoid any frame distortion, avoid rubbing damage, avoid contact with concrete, plaster, mud etc. and keep them dry. Retain protective coverings for as long as possible, and remove them at completion.

Experienced and competent tradesmen who are familiar with the techniques and materials specified shall carry out all installation work. Fix in accordance with the manufacturer's instructions. Take utmost care to avoid damage to anodized or powder coated surfaces - correction of any such disfigurement requires written authority - replace any badly damaged items.

Use fixings compatible with the materials involved, as recommended by the windows manufacturer and to comply with the DWP requirements, basically aluminium or Type 316 stainless steel where exposed externally; galvanized to AS/NZS 4680, 610g/m2, may be used where not exposed.

Thoroughly check all preparatory work to openings prior to installation, including underlay, corner seal tapes, adjacent cladding, pre-installed flashings, waterproofing systems etc. as appropriate. Use

inert barriers or coatings to prevent contact between dissimilar metals or between aluminium and concrete.

Install flashings as detailed and supplied by the manufacturer, installed tightly and neatly with absolute minimum tolerances, with head weathering jamb, jamb weathering sill, and sill open (draining) to exterior. Except where the window is recessed all head flashings shall extend 30mm minimum beyond the frame.

Air-seal all frame perimeters to adjacent structure to a depth of 15 - 20mm with expanding foam or appropriate sealant including a PEF rod at head, sill and jambs to retard the spread of sealant.

Weather-seal frame jambs etc. to adjacent surfaces (or to each other) as detailed or as required by the windows manufacturer, to achieve a fully watertight installation. In preparation for sealant the joints shall be clean, dry, and primed if necessary. Insert closed cell polyethylene backer rods or a polyethylene tape slip layer if required. Mask adjacent surfaces if appropriate, install the sealant fully in accordance with the sealant manufacturer's recommendations, and finish to even smooth surfaces.

Remove trade debris progressively, appropriately clean any affected adjacent surfaces, thoroughly clean the Aluminium Windows & Doors, check that all hardware is in full working order, and provide safety indication of the glass for the balance of adjacent works.

4.3.15 Completion

4.3.15.1 Completion:

Check the Aluminium Windows & Doors have been correctly installed in accordance with the manufacturer's requirements to the locations, layout and details shown on the design drawings.

Check the installation for damage and defects, including surface marking. Carry out any necessary repairs in accordance with the manufacturer's requirements to the required standard. Replace Aluminium Window and Door elements where repair is not possible or will not be accepted.

Leave all of this work complete, clean and free from damage and defects, and to the required standard in accordance with the manufacturer's requirements.

Leave surrounding surfaces clean and free of rubbish and debris. Remove all rubbish and excess material from the site.

Issue to the Owner a copy of the manufacturer's maintenance requirements and a copy of the manufacturer's Warranty. test

5 PLASTER CLADDINGS

5.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

5.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

5.3 StoTherm Insulated Facade System

5.3.1 Scope

Supply and install StoTherm Insulated Facade System, as specified herein, to the locations identified on the design drawings, complete with all system components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with Stoanz Ltd StoTherm Insulated Facade System technical literature and drawings (check www.sto.co.nz, or email info@sto.co.nz, or call 04 801 4749 for the latest editions), BRANZ Appraisal No.478, and other relevant product manufacturers' recommendations.

No substitutions are permitted for StoTherm Insulated Facade System.

For the purpose of this specification, all Stoanz Ltd StoTherm Insulated Facade System technical literature and drawings and BRANZ Appraisal are collectively referred to as the 'Sto Technical Literature'.

The following is a list and/or general description of the extent of the StoTherm Insulated Facade System works, which are more specifically defined in the contract documents, required for the completion of the contract works:

BASEMENT WALLS EXTERNAL - STOTHERM MASONARY INSULAITON SYSTEM BRANZ APPRASIAL 604 (2024)

FINISHES DIRECTED BY OWNER.

5.3.2 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the design drawings and in accordance with Sto Technical Literature.

Coordinate with trades as necessary the locations of pipes, outlets, meter boards and other fittings and equipment installed by others, and to install the StoTherm Insulated Facade System as required.

5.3.3 Workmanship

Where required by the NZ Building Act 2004 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

This work must be undertaken by a Sto registered LBP Contractor. On completion of the installation, the installing LBP (registered Sto Contractor) shall complete and sign a Restricted Building Work (RBW) memorandum and shall issue a copy to the Building Consent Authority and, where applicable, to the Main Contractor.

All associated work shall be carried out by experienced and skilled PPCS (Proprietary Plaster Cladding Systems) Registered Tradesmen, certified by Stoanz Ltd to install and apply StoTherm Insulated Facade System components and accessories, in accordance with Sto Technical Literature and warranty requirements, to best trade practice.

Carry out and complete all required Pre-cladding, Pre-coating, and Final Checklists, separately and in that order, as each stage is completed and before commencing the next stage.

Make all necessary provisions to protect adjacent finished work and surfaces from damage and contamination during installation. Mask off all windows and doors and other exposed fixtures and fittings before coatings are applied.

All cutting, jointing, fixing, sealing and finishing techniques shall be carried out using suitable tools and equipment and as recommended by Sto.

No plastering shall be undertaken during wet weather or when the air and substrate temperature is outside the range of +5°C to +30°C.

Sto coatings must be protected from rain for the first 24 hours, and from hot dry winds and direct sunlight for the first 16 hours to aid curing.

All work shall be such as to leave a neat, efficient, robust and weathertight installation, to the required standard, free from damage and defects.

The Sto registered LBP Contractor shall supply a PS3 Producer Statement at the time of application for Code Compliance Certificate.

5.3.4 Delivery & Handling

Upon delivery to site, inspect StoTherm Insulated Facade System materials and reject those items found to be damaged, defective or substandard, and contact Stoanz Ltd immediately.

Store all components and accessories undercover in accordance with Sto recommendations. Keep stored materials dry, out of direct sunlight and protected from damage, distortion and contamination.

Do not use damaged or defective materials, or products that are beyond their designated shelf life.

Should a problem be encountered with any product supplied by Stoanz Ltd, immediately contact Stoanz Ltd on 04 801 7794. Do not continue to use the item that is not performing to specification or expectation. Keep the item in question, and where possible, document numbers and/or manufacturing details.

Handle all materials in accordance with the manufacturer's recommendations, and in a manner that prevents damage and does not reduce its performance.

Sto render systems must only be applied when the air and substrate temperature is within the range of +5°C to +30°C.

Installers shall be familiar with, and comply with, the manufacturer's safe handling requirements and precautions for use, and shall use appropriate safety gear when handling materials.

Installers shall conform to all relevant WorkSafe NZ Guidelines and Codes of Practice - including the OSH Guidelines For the Provision of Facilities and General Safety in the Construction Industry.

5.3.5 Completion

Check that the StoTherm Insulated Facade System has been correctly installed, with render coatings and facade paint applied and finished to the specified texture and colour.

Check that all surfaces, edges, corners, rebates, angles, reveals, drip edges and control joints are complete, true and accurately aligned and as indicated on the design drawings.

Check for damage and defects - replace or repair as necessary to the required standard in accordance with Sto requirements.

Ensure that the work of other trades does not negatively impact on or reduce the minimum clearances required by the NZ Building Code, between the cladding and ground, roof and/or deck junctures.

Leave this work complete and weathertight, and to the required standard in accordance with the Sto Warranty requirements.

Leave completed works and surrounding surfaces clean and free of rubbish and debris. Remove all rubbish and excess material from the site.

Issue to the Owner a copy of the Stoanz Ltd Sto Warranty with StoService Assurance, and a copy of the Stoanz maintenance requirements.

Provide all necessary Producer Statements.

6 INSULATION

6.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

6.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

3604:2011(NZS)	Timber-framed buildings
4218:2009(NZS)	Thermal insulation - Housing and small buildings
4220:1982(NZS)	Code of practice for energy conservation in non-residential buildings
4243.1:2007(NZS)	Energy efficiency - Large buildings - Building thermal envelope
4246:2016(NZS)	Energy efficiency - Installing bulk thermal insulation in residential buildings
4859.1:2018(AS|NZS)	Thermal insulation materials for buildings - Part 1: General criteria and technical provisions

6.3 Pink Batts Insulation

6.3.1 Scope

Supply and install Pink® Batts® Insulation, as specified herein, to the locations identified on the drawings, complete with all accessories required for proper installation and performance. No substitutions are permitted for Pink® Batts® Insulation. All aspects of this work shall be in complete accordance with Pink® Batts® technical information and installation requirements and as shown on the drawings:
https://www.pinkbatts.co.nz/resources/downloads/product-data-sheets

The following is a list and/or general description of the extent of the Pink® Batts® Insulation works, which are more specifically defined in the contract documents, required for the completion of the contract works:

The following certificates are available from this supplier.

Please also check their website pinkbatts.co.nz for any additional information required.

6.3.2 Wall Thermal Insulation

6.3.2.1 Pink® Batts® Ultra® R3.2 140mm Narrow Wall

Pink® Batts® Ultra® R3.2 140mm Narrow Wall - product code 7160241. A non-combustible, resin bonded fibrous glasswool insulation manufactured from recycled and virgin glass and cured urea extended phenolic resin. R-value R-3.2. 140mm thick x 380mm wide x 1140mm long segments.

BRANZ Appraised for use as a thermal insulating material for framed or part-framed walls, ceilings and roofs of domestic and commercial buildings according to the conditions and limitations of BRANZ Appraisal No.238. Refer to product data - https://www.pinkbatts.co.nz/assets/Products/April-2022-changes-/Wall-Product-Sheet_April22_1075-RevF.pdf

Pink® Batts® Ultra® R3.2 140mm Narrow Wall is licenced with Environmental Choice New Zealand: Thermal Building Insulants Licence No.2504017.

Installed as wall cavity thermal insulation to the locations shown on the drawings in accordance with the manufacturer's requirements.

Installed Location:

6.3.3 Ceiling Thermal Insulation

6.3.3.1 Pink® Superbatts® Skillion Roof R5.0

Pink® Superbatts® Skillion Roof R5.0 - product code 7113250.
Glasswool insulation manufactured from over 80% recycled New Zealand glass.
Product is BRANZ Appraised, and supported by an EPD and Eco Choice certification.
180mm Max. thickness x 560mm wide x 1220mm long segments.
Installed as ceiling thermal insulation to the locations shown on the drawings in accordance with the manufacturer's requirements.
Installed Location:

6.3.4 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.

Coordinate with trades to install Pink® Batts® Insulation as required.

6.3.5 Workmanship

All installation work shall be carried out by registered PinkFit® installers; the preferred Pink® Batts® installers, or by experienced and competent installers, familiar with the specified products and installation techniques, in accordance with the manufacturer’s requirements, and to fully comply with all warranty requirements. For more information on best practice Pink® Batts® installation refer to: https://www.pinkbatts.co.nz/resources/downloads/product-data-sheets

6.3.6 Delivery & Handling

Store the Pink® Batts® Insulation materials undercover, in a weatherproof environment, off the floor, on a flat, even surface in accordance with the manufacturer's requirements. Keep materials dry and protected from damage, moisture and contamination at all times.

For best practice, refer to Pink Batts Product and Installation Guides.
Further assistance contact 0800 746 522

Store the Pink® Batts® Insulation materials undercover, in a weatherproof environment, off the floor, on a flat, even surface in accordance with the manufacturer's requirements. Keep materials dry and protected from damage, moisture and contamination at all times.

Conform with all relevant WorkSafe NZ Guidelines and Codes of Practice - including the Workplace and facilities requirements

6.3.7 Completion

Check that all specified Pink® Batts® Insulation products have been installed correctly in accordance with the manufacturer's requirements.

Check for damage and defects - replace damaged and defective insulation as necessary to the required standard.

Ensure the installed insulation will be adequately protected for durability and performance in accordance with the manufacturer's warranty requirements.

Leave all of this work complete, and in the condition required for proper performance, including for the installation of subsequent linings, in accordance with the manufacturer's warranty requirements.

Leave adjacent surfaces and finished work clean and free of damage. Remove all associated rubbish and waste material from site.

Issue to the Owner a copy of the Pink® Batts® Lifetime Product Warranty for all Pink® Batts® Insulation products installed.

6.4 Thermal Insulation

6.4.1 Scope

Supply and install the selected products as thermal insulation to the specified R-values, complete with all accessories, to the floors, walls, ceilings, roofs, and other thermally insulated building elements, as noted and shown on the drawings. All aspects of this work shall be in accordance with the product manufacturer's technical literature and installation requirements, other relevant product manufacturers' recommendations, and as shown on the drawings.

6.4.2 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-ordinate with other trades to install all thermal insulation as required.

6.4.3 Workmanship

All installation work shall be carried out by experienced and competent tradesmen, familiar with the specified products and installation techniques, in accordance with the manufacturer's installation requirements, and as noted and detailed on the drawings.
Store and handle products in accordance with the manufacturer's recommendations, keep dry and protect from damage. Do not compress fibre insulation bales. Do not use damaged or defective insulation products and accessories.
The building must be completely enclosed and water tight before installation commences with the exception of roof insulation when installed with roofing. Ensure the moisture content of timber framing is no greater than 18% prior to installing insulation to timber framed elements. Always maintain the full insulation thickness to ensure the required thermal values are achieved. Do not install insulation pads or blankets into closed cavities that are less than the stated insulation nominal thickness.

6.4.4 Product

6.4.4.1 M Grade Expanded Polystyrene Sheet

Medium Grade expanded polystyrene (EPS) thermal insulating sheets, 20kg/m³.

Manufacturer, brand name & type: EXPOL PLATINUM BOARD
Thickness & R-Value:50mm
Location: BASEMENT WALLS, BASEMENT FLOOR BUILD UP.

6.4.5 Installation

6.4.5.1 Floor Insulation - Polystyrene Sheet

Install polystyrene insulation panels, complete with accessories, friction fitted between the floor joists against the underside of the flooring and secure in place in accordance with the manufacturer's recommendations. Ensure all perimeter insulation edges and all insulation joints are fully closed as the work progresses, seal gaps with a manufacturer approved foam sealant the thickness of the insulation panels. Neatly cut insulation panels around pipes etc. and seal gaps as above. Separate polystyrene panels from newly installed electrical cables with a manufacturer approved barrier strip only. Do not insulate over electrical cables, leave cables exposed and uncovered.

Take extreme care when working around electrical cables.

For recessed luminaires LEDs & Control-gear, rated IC, IC-F & IC-4 to cover, follow manufactures instruction on insulation in line with NZS4246.

For all other separate insulation 200mm from recessed light fittings and other recessed electrical fittings; refer to the drawings for containment requirements around recessed electrical fittings.

6.4.6 Completion

Check that all insulation has been installed correctly and is correctly supported and that all edges, joins and ends are fully closed without gaps. Check for damage and faults and repair or replace as necessary. Collect and remove from site all rubbish and waste material.
Issue to the Owner a copy of any product maintenance requirements and a copy of the Thermal Insulation Product and Installation Warranties for the completed works.

7 ROOFING

7.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

7.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

1170.2:2011(AS/NZS)	Structural design actions - Wind actions
1170.3:2003(AS/NZS)	Structural design actions - Snow and ice actions
1562.3:1996(AS/NZS)	Design and installation of sheet roof and wall cladding - Plastic
2295:2006(NZS)	Pliable, permeable building underlays
2728:2013(AS|NZS)	Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements
3604:2011(NZS)	Timber-framed buildings
4200.1:2017(AS|NZS)	Pliable building membranes and underlays - Part 1: Materials
4200.2:1994(AS/NZS)	Pliable building membranes and underlays - Installation requirements
4389:2015(AS/NZS)	Roof safety mesh
4534:2006(AS/NZS)	Zinc and zinc/aluminium-alloy coatings on steel wire
NZMRM Code of Practice	NZ Metal Roof and Wall Cladding Code of Practice - Version 3.0

7.3 Dimond Profiled Metal Roofing

7.3.1 Scope

Supply and install the specified Dimond Profiled Metal Roofing to the locations identified on the drawings, complete with all accessories. All aspects of this work shall be in complete accordance with the Dimond Roofing & Cladding Systems Manual and other relevant Dimond technical literature (check www.dimond.co.nz, or call 0800 346 663 for the latest editions), other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for Dimond Profiled Metal Roofing. .

7.3.2 Corrugated Roofing

7.3.2.1 Corrugate

Dimond 'Corrugate'. A standard corrugated profile; 18mm deep; 76mm crest pitch; 851mm sheet width; 762mm effective cover.

- Manufactured from the material type, thickness and finish specified.

- The minimum roof pitch for Corrugate is 8° (approx 1:7).
- Sheets shall be continuous from ridge to gutter, or where a step is designed into the roof, sheets shall be continuous from ridge to step then step to gutter.
- Sheet ends must be stop-ended under flashings.
- Installed as profiled metal roofing in accordance with the manufacturer's requirements to the locations and details shown on the drawings.

Installed Location:

7.3.3 Roofing Material

Dimond profiled metal roofing shall be manufactured from COLORSTEEL® Endura - 0.55mm BMT. Pre-painted hot-dipped galvanised zinc coated steel coil conforming with AS/NZS 2728. 550 MPa minimum yield strength. 150gms/m² coating weight.

Colour:

7.3.4 Ancillary Components & Accessories

Roofing Fasteners. Roofing fastener type and durability shall comply with AS 3566 Class 4 or Class 5, as appropriate, and be no less than the durability of the material being fixed.
Fastener type and placement (frequency) shall be appropriate for the environmental conditions and the specified roofing profile and material and the supporting structure material; all in accordance with the NZMRM Code of Practice and the Dimond Roofing & Cladding Systems Manual.

Roof Flashings. Roof flashings shall be fabricated from the same material and coating as the roofing material, to maintain durability and compatibility requirements.

Unless otherwise noted or specified, flashings shall be:
- formable grade 0.55 BMT for galvanised, aluminium/zinc-coated and pre-painted steel, and 0.9mm BMT for aluminium;
- to the same standards as the profiled roofing sheets;
- notched when installed across the roofing profile or provided with a soft edge - in accordance with Dimond requirements.

Flashings, flashing fastenings and fastening frequency shall be in accordance with the Dimond Roofing & Cladding Systems Manual - in particular, Table 2.1.0 Effective Minimum Cover of Flashing Over Roof Sheet - and the NZMRM Code of Practice.

Do not construct flashing joints and flashing junctions in a manner that rely entirely on sealant to maintain weathertightness.

7.3.5 Preparation

Prior to installation, carry out all necessary inspections and preparatory work required, and ensure that all preliminary works by other trades have been completed to specification and as shown on the approved drawings.

Do not commence installation until all necessary preliminary works by others are complete and to the required standard. The commencement of work shall be deemed to indicate full acceptance by the installer that all preliminary works by other trades are complete.

Supporting timber structures shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific design, and have a maximum moisture content in accordance with the requirements of NZS 3602 at the time of installation.

Supporting light-gauge steel framed structures shall comply with the requirements of AS/NZS 4600 or the NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria.

Supporting heavy steel structures shall comply with NZS 3404 and the NZ Building Code.

Roof Structure - check all aspects of preparatory works, including but not limited to:
- Check that the purlins are installed to the required set-out and spacings, are straight and true to line and plane, and are securely fixed.
- Check that all barge and fascia boards have been installed to the correct line and plane with all edge blocking complete and secure.
- Check that valley gutter and hidden gutter framing is to the required dimensions with solid backing supports securely fixed, true to line and plane.
- Check that internal gutter membrane linings are properly dressed back and adhered to a solid substrate along the roof edge as shown on the design drawings.
- Check that all trimming for roof penetrations, all roof/wall junction blocking, and all necessary work by other trades are complete.
- Check that solid backing required for fully supported roofing is complete and securely fixed in accordance with the design drawings.

7.3.6 Installation

7.3.6.1 Roof Underlay

Install roof underlay in accordance with the underlay manufacturer's requirements and with minimum 150mm side and end laps, and lapped such that any water will be shed to the outside of the underlay.

Non-self-supporting underlay must be supported by hexagonal wire mesh, safety mesh or alternative support, as specified and/or as shown on the design drawings, in accordance with the roofing underlay manufacturer's recommendations.

Underlay shall be installed in a manner so that it is sufficiently tensioned without sagging, overhangs fascia boards 20mm - 25mm, and finished along roof edges, ridges, valley gutters, roof/wall junctions and at penetrations to the details shown on the drawings.

Underlayment for fully-supported roofing shall be in accordance with the requirements of the NZMRM Code of Practice 14.4.5.

Separate roof underlay from chimneys and flues in accordance with the requirements of NZBC Acceptable Solutions C/AS2 to C/AS6, Part 7.5.9.

7.3.6.2 Screw-Fixed Profiled Metal Roofing

Install screw-fixed profiled metal roofing in accordance with Dimond Roofing technical literature and the NZMRM Code of Practice and to fully comply with all warranty requirements. As shown on the design drawings, confirm any specific roofing detailing requirements prior to installation.

Accurately set-out roofing sheets exactly square to the building axis and with sheets lapped away from the prevailing wind; maintain this accurate set-out throughout the installation. Check for and eliminate any creep and/or spread of sheets during installation.

Cut metal roofing and flashings by shear only - do not use abrasive cutting tools on or near the roof. Do not use black lead pencils for marking pre-finished roofing and flashings.

Prevent contact with, or run-off from, incompatible materials in accordance with the recommendations in the NZMRM Code of Practice. Observe the cladding material manufacturer's recommendations where flues discharge above roofs, and for the installation of solar heating panels. Protect the coated surface from damage at all times; replace the whole sheet where a significant depth of the coating has been damaged (including flashings).

Screw-fixed sheets shall be fixed with fasteners appropriate for the roofing profile and material, substrate/structure and the environment in accordance with Dimond technical literature and the NZMRM Code of Practice recommendations (minimum Class 4).
Screw fastening placement and spacings shall be strictly in accordance with Dimond Roofing requirements and the NZMRM Code of Practice, to fully comply with the Wind Zone requirements, purlins spacings, etc.
Screw fastenings for pre-painted roofing must be pre-painted prior to installation for an accurate colour match.
Use fixing systems that will accommodate thermal expansion for long lengths and/or dark colours.

All roofing jointing techniques and sealants shall be in accordance with Dimond Roofing recommendations and the NZMRM Code of Practice, and shall be compatible with the roofing material and finish. Joints shall be sealed with an approved neutral-cure sealant or approved closed-cell lap tape.

Ridges, hips, barges and flashings generally, shall be in accordance with Dimond technical literature and the NZMRM Code of Practice.

7.3.6.3 Flashings

Install flashings to roof edges, ridges, roof/wall junctions, parapets and roof penetrations as detailed on the drawings and in accordance with Dimond Roofing technical literature and the NZMRM Code of Practice. All flashings shall be neatly formed and finished, securely fastened to the structure, weatherproof and have falls set to avoid water ponding. For highly visible flashings, plan each flashing joint and/or junction with specific regard to aesthetic requirements.

7.3.6.4 Penetrations

Penetrations in the roofing that are greater than 150mm in any direction must have support framing installed around the perimeter of the penetration. Penetration flashings shall not rely solely on silicone sealant to achieve weathertightness of the flashing.
Flash pipes penetrating the roofing with a proprietary pipe collar flashing.

7.3.6.5 Cleaning

Completely clean off all drill and other swarf and pop-rivet shanks as the work proceeds (at least daily), and keep them and other rubbish out of the spoutings. Remove trade debris from the roof and from the site progressively, and on completion leave the roof and rainwater system completely clean.

7.3.7 Fixing

7.3.7.1 Corrugate - Steel-Based Sheet, fixed to Timber Purlins

Crest-fix Dimond 'Corrugate' profiled roofing (manufactured from steel-based sheet) to NZMRM Code of Practice requirements and in accordance with the Dimond Roofing & Cladding Technical information on the Dimond website.

- Fix to Timber Purlins using Class 4, 12g-11 x 50mm, Type-17, Hex. Head, Wood Tek Screw with Seal Washer; or RoofZip M6 x 50mm HG-Z4/5 Screw with Seal Washer.

Fasteners shall achieve minimum 30mm embedment into structural timber/purlins. Where cavity battens, sarking or insulation is installed over the purlins/framing, increase the screw length by the thickness of the batten/sarking/insulation accordingly.

Pre-painted screws and washers shall be factory pre-painted for an accurate colour match with roofing.

7.3.8 Delivery & Handling

Store Dimond profiled metal roofing, flashings and accessories undercover, clear of level ground, on bearers at evenly spaced centres as recommended by the Dimond Roofing & Cladding Systems Manual. Keep stored materials and accessories dry and protected from damage and contamination at all times.
Do not use damaged or defective materials or products, or products that are beyond their designated shelf life.

Handle materials in accordance with the manufacturer's requirements and in a manner that prevents damage to or deterioration of the material, including surface marking.

Installers shall be familiar with and comply with the manufacturer's safe handling requirements and precautions for use, and shall use appropriate safety gear when handling materials.

Installers shall conform with all relevant WorkSafe NZ Guidelines and Codes of Practice - including the Best practice guidelines for working on roofs and the General risk and workplace management - part 1.

For all work undertaken on the roof, installers shall always wear soft, clean footwear with a light-coloured sole. Do not walk on translucent/natural lighting sheet.

7.3.9 Workmanship

Where required by the NZ Building Act 2004 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

All installation work shall be carried out by experienced and competent tradespersons, familiar with the specified products and installation techniques and certified to install Dimond Profiled Metal Roofing, to fully comply with all warranty requirements in accordance with the manufacturer's requirements. All work shall be such as to leave a neat, efficient, robust and weathertight installation.

All cutting, fixing and installation techniques, fastenings and sealants shall be exactly as recommended by the Dimond Roofing & Cladding Systems Manual in accordance with the NZMRM Code of Practice, and carried out with the use of suitable tools and equipment appropriate for the application.

Always maintain isolation of dissimilar materials in accordance with the Dimond Roofing & Cladding Systems Manual. Isolate dissimilar materials (metal and non-metal) in close proximity as necessary by painting the surfaces or fitting separator strips. Place isolators between metals and treated timber or cement-based materials. Do not use unpainted lead-sheet or copper materials to come in contact with, or allow water run-off from these onto, galvanised or Zincalume® materials.

7.3.10 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the design drawings. Co-operate with other trades to ensure that framed roof members and/or roof substrates are in accordance with the design drawings and specifications.

Coordinate to ensure that all roof members required for ridges, hips, valleys, barges, penetrations, junctions with vertical faces, etc. are correctly installed. Coordinate with the rainwater system installer, and generally with other trades as required, to install Dimond Profiled Metal Roofing.

Ensure that each section of roof is waterproofed as soon as possible after preparatory work is complete; allow to carry out the works in several operations if necessary to comply with this condition.

7.3.11 Completion

Check that the Dimond Profiled Metal Roofing and associated components and flashings have been installed and finished correctly.
Check for defective work, damage and surface marking - replace and/or repair as necessary.
Sweep down the completed roof and clean out spouting, gutters and rainwater pipes.

Leave all of this work complete and weathertight and to the required standard in accordance with the NZMRM Code of Practice and the Dimond Roofing & Cladding Systems Manual.

Leave the completed works and surrounding surfaces clean and free of debris and rubbish. Remove all rubbish and excess material from the site.

Issue to the Owner a copy of the Dimond maintenance requirements upon completion of the contract works.

Provide the roofing material manufacturer's/supplier's 'Product Warranty' for the installed roofing product on the Dimond Standard Warranty Form. Warrant this work under normal conditions and use against failure of coating and for weatherproofing by material penetration. Commence the warranty from the date of practical completion of the contract works.
Factory applied coatings; the warranty period is determined by the specified product and the site location and environment - contact Dimond to evaluate the warranty conditions.

Provide the installer's 'Installation Warranty' on the installer's Standard Warranty Form. Warrant this work under normal environmental conditions and use against weatherproofing failure. Commence the warranty from the date of practical completion of the contract works.

7.4 Roofing Industries Rainwater & Fascia Systems

7.4.1 Scope

Supply and install the selected Roofing Industries Rainwater and Fascia Systems to the walls identified on the drawings, complete with all components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with Roofing Industries Technical Summary and NZMRM Code of Practice (check www.roof.co.nz, or call 0800 844 822 for the latest editions), and other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for Roofing Industries Rainwater and Fascia Systems.

7.4.2 Spouting Base Material

Steel - 0.55mm BMT.

7.4.3 Product/Finish

Colorcote MagnaFlow X (ZMX) - 0.55mm BMT.

Colour:

7.4.4 Spouting Profile

Roofing Industries spouting profile 'Half Round 150mm'. 150mm overall width, half-round profile, suited for residential applications. External brackets.

7.4.5 Downpipes

Roofing Industries Ezi-Flo Round Downpipes. Manufactured from the material specified.
65mm, 80mm and/or 100mm diameter round downpipes with colour-matched brackets.

Downpipe sizes, locations and routes shall be as shown on the drawings and installed in accordance with the manufacturer's requirements and as detailed on the drawings.

Product/ finish:
Colour:

7.4.6 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works, including membranes, wraps, framing, claddings and trims, and any other related works, are completed to specification and as shown on the drawings.
Coordinate with other trades to install Roofing Industries Rainwater & Fascia Systems as required.

7.4.7 Delivery & Handling

Store Roofing Industries Rainwater & Fascia System components and accessories undercover, level off the ground as recommended by Roofing Industries Technical Summary. Keep dry and protect from damage and marking at all times.
Handle products in accordance with the manufacturer's requirements without scratching, distortion or damage.

7.4.8 Installation

7.4.8.1 Workmanship

All installation work shall be carried out by experienced and competent tradesmen who are familiar with the techniques and materials specified. All fixing, jointing and sealing materials and techniques, shall be exactly as recommended by Roofing Industries Technical Summary.

Protect the coated surface from damage at all times; replace the whole section where a significant depth of the coating has been damaged. Completely clean off all drill and power saw swarf as the work proceeds.
Do not use black lead pencils for marking prefinished spouting, fascia or downpipes.

7.4.8.2 Spouting

Check that fascia, barges or cladding are level and true to line and face and will allow work of the required standard without distortion to the product alignment.
Screw fix spouting brackets true to line and at the recommended maximum centres in accordance with the NZMRM Code of Practice and to the falls shown on the drawings. Form spouting joints and downpipe droppers in strict accordance with Roofing Industries Technical Summary and as shown on the drawings. Make adequate provision for thermal movement of the spouting, provide expansion joints in spouting in accordance with Roofing Industries Technical Summary. Ensure brackets are of a compatible material with the spouting.

7.4.8.3 Downpipes

Downpipes and spreaders set-out and installed complete with bends and off-sets as required and shown on the drawings. Any on-site jointing shall be in accordance with the manufacturer's requirements and as approved by Roofing Industries. Screw fix downpipes to structure plumb and

rigid with colour-matched adjustable brackets. Discharge downpipes into the stormwater system as noted on the drawings.

7.4.9 Fixings

Screw fix only using self-drilling screws, appropriate to the spouting material, environment and structure, in accordance with NZMRM Code of Practice requirements and Roofing Industries Technical summary. Screws for pre-painted spouting shall be factory pre-painted for an accurate colour match. All support brackets shall be fixed in accordance with Roofing Industries Technical Summary.

7.4.10 Completion

7.4.10.1 Completion

Check that the spouting system and/or fascia system is installed correctly. Check for damage and surface marking, replace as necessary.
Clean up thoroughly and remove debris and unused material from site.

Issue to the Main Contractor a copy of the Roofing Industries Spouting and Fascia Products maintenance requirements together with the Roofing Industries Combined Warranty.

8 TILING

8.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

8.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

3661.2:1994(AS/NZS)	Slip resistance of pedestrian surfaces - Part 2: Guide to the reduction of slip hazards
4586:2004(AS/NZS)	Slip resistance classification of new pedestrian surface materials
NZBC D1/VM1	Slip Resistance

8.3 Mapei Floor Levelling Compounds, Toppings & Coatings

8.3.1 Scope

Supply and install the specified Mapei products to the floors and surfaces noted on the drawings and/or as identified below, complete with accessories. All aspects of this work shall be in complete accordance with Mapei product technical literature (check www.mapei.co.nz, or call 09 921 1994 for the latest editions), other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for the specified Mapei products.

8.3.2 Workmanship

Installation work, including preparation and finishing, of the specified Mapei product(s) shall be carried out by experienced applicators, familiar with the specified products and installation techniques, to fully comply with all Mapei NZ Ltd warranty requirements, in accordance with the manufacturer's requirements and as shown on the drawings.
All work shall be such as to leave a neat, efficient and robust installation.

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings prior to installation.
Co-ordinate with other trades as required to install/apply the specified Mapei product(s) to the required levels and falls and surface finish.

Application of the specified product(s) shall not be undertaken when the ambient temperature is outside the manufacturer's permissible temperature range.
Exterior applications shall not be undertaken during inclement weather. As necessary, protect completed exterior work from rain and from hot dry winds and direct sunlight to aid proper curing.

Protect adjacent finished work and surfaces from damage and contamination during installation. Leave completed surfaces clean, sound, and free of damage and marking of any kind.

8.3.3 Storage & Handling

Store the specified Mapei products inside, in a weatherproof environment, clear of the floor, on a flat, even and level surface. Keep Mapei products dry, out of direct sunlight and protected from damage, moisture and contamination while stored.

Do not use damaged, defective or contaminated products, or products that are beyond their designated shelf life.

Handle all Mapei products in accordance with the manufacturer's requirements as set out in the relevant Technical Data Sheet(s) and in a manner that prevents contamination or deterioration of the material or reduces its performance.

Installers shall be familiar with and comply with the manufacturer's Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials.

8.3.4 Completion

Check that the specified floor compounds, coatings and systems from Mapei have been installed and/or applied correctly, and that all associated work to edges, penetrations, movement control joints and other detailing is correctly finished.
Check the applications for defects and damage - carry out any repairs in accordance with the manufacturer's instructions.

Leave this work complete and to the required standard in accordance with Mapei NZ requirements. Leave adjacent surfaces and finished work clean and free of contamination. Remove all excess material and associated rubbish from site.

As applicable, issue to the Owner a copy of the manufacturer's maintenance requirements and a copy of the Mapei NZ Ltd Product Warranty and the Mapei-approved Applicator's Application Warranty

9 FLOOR COVERINGS

9.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

9.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

1884:2013(NZS AS)	Floor coverings - Resilient sheet and tiles - Installation practices
2455.2:2007(AS/NZS)	Textile floor coverings - Installation practice - Carpet tiles
3661.2:1994(AS/NZS)	Slip resistance of pedestrian surfaces - Part 2: Guide to the reduction of slip hazards
4586:2004(AS/NZS)	Slip resistance classification of new pedestrian surface materials
NZBC D1	Access Routes

9.3 Carpet & Resilient Floor Coverings

9.3.1 Scope

Supply and install the specified Floor Coverings and flooring products to the areas and surfaces, layouts and details shown on the drawings, complete with all accessories. All aspects of this work shall be in accordance with the specified floor covering manufacturers' technical literature and installation requirements, relevant Standards and Code requirements, other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for the specified Floor Coverings and flooring products.

9.3.2 Floor Coverings

9.3.2.1 Carpet

Carpet flooring; to the specified product, pile style and content, and colour and pattern. Installed in accordance with the manufacturer's requirements and AS/NZS 2455.1 to the locations and layout shown on the drawings.

Manufacturer, brand name & range:
Pile style:
Pile content/fibre:
Pile thickness:
Construction:
Colour/Pattern code:

Grading:
Location:

9.3.3 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-ordinate with other trades as required to install the specified floor coverings and accessories.

9.3.4 Workmanship

All installation work shall be carried out by experienced and competent floor layers, familiar with the products specified and installation techniques, under the direct supervision of a Registered National Flooring Association (NFA) Member, in accordance with the manufacturer's installation requirements, NZS/AS 1884, AS/NZS 2455.1, AS/NZS 2455.2 and AS/NZS 4586 as relevant, and as noted and detailed on the drawings.
Use only approved adhesives that are compatible with the specified floor covering product and the substrate as recommended by the floor covering manufacturer.
The building must be fully enclosed and weathertight with all doors and necessary fittings and trim installed prior to laying floor coverings.

9.3.5 Delivery & Handling

Store and handle all floor covering products and accessories in accordance with the manufacturer's recommendations. Store products and accessories under cover and out of direct sunlight on a flat and level surface; keep dry and protect from damage and contamination at all times.
Do not use damaged or defective flooring products or accessories, or products that are beyond their designated shelf life. Do not damage or mark or distort flooring products and accessories during handling.
Allow floor coverings and accessories to properly condition for a minimum of 24 hours, or as recommended by the manufacturer, prior to laying in accordance with the manufacturer's requirements. Unless recommended otherwise by the manufacturer, do not lay floor coverings below 15^{o}C room temperature.

9.3.6 Substrate Preparation

9.3.6.1 Existing Concrete Floors

Strip off any remaining existing floor coverings, adhesive and other surface contaminants. Existing concrete substrates must be compliant with NZS 3114 'U3 Surface Finish' and with the floor covering manufacturer's requirements. Check for moisture content by hygrometer reading to BRANZ BU330 - do not commence laying floor coverings until the substrate is surface-dry and the moisture readings are less than 75% relative humidity over the entire surface.
Grind off any high spots on the concrete slab, and using the specified proprietary levelling compound repair flush with feathered edges any low spots or damaged areas then grind smooth.
Lightly grind or shot blast any surface that is glazed to the extent that may compromise the adhesive bond. Leave the entire surface clean and free of dust and contaminants etc.

Location:

9.3.7 Installation

9.3.7.1 Carpet Floor Coverings - Conventional Stretch-in

Install by conventional stretch-in method carpet floor coverings, and accessories, including all jointing, in accordance with the manufacturers' recommendations, procedures and techniques, AS/NZS 2455.1, and as shown on the drawings.

Allow the carpet underlay and carpet floor coverings to properly condition in accordance with the manufacturers' recommendations prior to laying. Turn underfloor heating systems off 48 hours prior to installation and leave off during installation and for a minimum of 48 hours after completion. Thoroughly clean each area before commencing work. Seal or prime as necessary any porous surface receiving floor covering adhesive, and apply adhesive exactly to the manufacturer's recommendations.

Confirm the location of all carpet joints and seams prior to laying. Install carpet rolls in consecutive sequence and in the same direction. Do not install carpet underlay and carpet floor coverings over expansion joints - use only the specified expansion joint cover strip and neatly finish the underlay and carpet flooring in accordance with the cover strip manufacturer's requirements.

Install edge grippers and lay the carpet underlay at right angles to the direction of the carpet floor covering with joints no less than 300mm from any seam in the carpet. Staple or adhesive fix underlay to substrates in accordance with the manufacturer's recommendations.

Carpet flooring installed flat and taut and evenly tensioned both ways by power stretching sequence. All seams and cross joins to be close-fitting and fused together with hot melt tape. Cut and properly prepare cross joins to ensure accurate pattern alignment.
Accurately install stair tread nosings and lay pre-cut carpet pieces to each stair tread and riser and finish neatly into or under the nosing edge as necessary.
Install any required carpet skirting, capping and edge trim, transition strips and naplock bars, as noted and detailed on the drawings; all finished straight and level and true to line.

Keep the working area cordoned off and protected during installation and protect completed installation work from damage and contamination until hand over of the works as programmed/scheduled.

9.3.8 Completion

Ensure that the specified floor coverings have been installed correctly, and that all seams, joints and accessories have been and completed correctly. Check for damage and defects and repair or replace as necessary.
Thoroughly clean the installed floor coverings in accordance with the manufacturers' recommended techniques and procedures.
Carry out any product specific finishing/polishing applications as recommended only by the floor covering manufacturer.
Leave the works area clean and remove all rubbish and waste material from the site.

Protect the completed works from damage, trafficable dirt and grime, and stains as necessary while other works are in progress.

Issue to the Owner a copy of the Manufacturers' maintenance requirements and a copy of the Manufacturers' Materials Warranties and the Applicators' Installation Warranties for all of the installed floor coverings.

10 ELECTRICAL

10.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

10.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

4512:2010(NZS)	Fire detection and alarm systems in buildings
4514:2009(NZS)	Interconnected smoke alarms for houses
4514:2021(NZS)	Interconnected smoke alarms for houses

10.3 Electrical Elements

10.4 Interconnected Smoke Alarms

10.4.1 Scope

Supply, install, and commission Interconnected Smoke Alarms to the locations and layout shown on the drawings, complete with accessories. All aspects of this work shall be in accordance with the smoke alarm manufacturer's product specification and installation requirements, other product manufacturers' recommendations, the electrical specification, and as shown on the drawings.

10.4.2 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-ordinate with other trades to install Interconnected Smoke Alarms as required.

10.4.3 Workmanship

All work shall be carried out by experienced and competent tradesmen in accordance with the manufacturer's requirements, the electrical specification and drawings, and the related standards, electrical regulations and code requirements.
All work shall be such as to leave a neat, efficient and robust installation.

10.4.4 Power Supply

Interconnected smoke alarms shall be powered from a permanently energised 230 v a.c. mains power supplied from the unswitched side of a commonly used circuit, and shall include either a long-life battery backup or long life (10yr minimum) built-in rechargeable energy storage device.

10.4.5 Alarm Type

Install interconnected Photoelectric type smoke alarms.

Manufacturer, brand name & type:

10.4.6 Installation

Install the interconnected smoke alarms on ceilings, or as shown otherwise, to the layout shown on the drawings in strict accordance with the manufacturer's instructions. Do not install smoke alarms in dead air spaces or obstructions where dead air spaces may be created.

Install smoke alarms to sloping ceilings at the high end of the ceiling slope.

Do not install smoke alarms to exposed bulkheads, beams, joists or purlins greater than 300mm deep.

Do not install smoke alarms closer than 400mm to any forced-air supply opening or to any blade of a ceiling fan.

10.4.7 Completion

Check that the smoke alarms have been correctly installed and wired.
Commission smoke alarms to the required operation in accordance with the manufacturer's instructions. Test alarms to ensure that the warning signal is heard in all bedrooms when all doors between the alarm and bedrooms are closed.
Check for faults and damage, repair/replace as necessary.

Issue to the Owner a copy of the manufacturer's testing and maintenance requirements and product warranty.

1. Ecoply Barrier Installation
2. Shadowclad Installation
3. BRANZ Appraisal No.651 - Thermakraft Covertek 407 Roof and Wall Underlay
4. CodeMark Product Certificate - Thermakraft Covertek 407 Synthetic Roof and Wall Underlay
5. Covertek 407 Install Guide
6. Covertek 407 Data Sheet
7. BRANZ Appraisal No.329 - Supercourse 500 Damp-Proof Course & Concealed Flashing
8. Thermakraft Corner Moulds Datasheet & Installation
9. Kingspan Thermakraft Product Warranty Statement
10. Dimond Corrugate Technical Statement
11. BRANZ Appraisal No.767 - Pink® Batts® Skillion Roof Insulation
12. BRANZ Appraisal No. 238 PINK® BATTS® INSULATION
13. EPD Pink Batts Wall Insulation
14. EPD Pink Batts Underfloor Insulation
15. EPD Pink Batts Ceiling Insulation
16. BRANZ Appraisal No.827- Ecoply Barrier Rigid Air Barrier
17. BRANZ Appraisal No.764 - Shadowclad Ventilated Cavity Cladding System
18. BRANZ Appraisal No.928 - GIB EzyBrace Systems
19. BRANZ Appraisal No.427 (2021) - GIB Aqualine Wet Area Systems
20. Thermathene Black Install Guide
21. Thermathene Black Data Sheet
22. Thermakraft White GP Tape Data Sheet
23. Supercourse 500 DPC Install Guide
24. Supercourse 500 DPC Data Sheet
25. BRANZ Appraisal No.878 - Thermakraft Aluband Window Flashing Tape
26. Aluband Install Guide
27. Aluband Data Sheet
28. BRANZ Appraisal No.942 - ONESEAL MULTI-FIT PIPE AND CABLE PENETRATION SEALS
29. OneSeal Install Guide
30. OneSeal Data Sheet
31. BRANZ Appraisal No.478 - StoTherm Cavity System and StoTherm Insulation System
32. BRANZ Appraisal No.472 - ARDEX Undertile Internal Liquid Membranes
33. BRANZ Appraisal No.473 - ARDEX Undertile External Liquid Membranes
34. BRANZ Appraisal No.478 - StoTherm Cavity System and StoTherm Insulation System