FOUR WALLS
ARCHITECTURE LTD

Four Walls Architecture Ltd

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

York Street

5 York Street
Queenstown
Queenstown

Issued for Consent

2026_001

PROJECT OVERVIEW

Scope

8 new 3-storey townhouses: Ground floor concrete block walls, with timber framed strucutre above, profiled metal and cemintel cladding, profiled metal roofing.

Address

Site Address	5 York Street
Suburb	Queenstown
Region	Queenstown
Lot #	11
DP #	17970

Site Conditions

Wind Zone	H - High Wind Speed
Earthquake Zone	Zone 3
Exposure Zone	Zone B - Low
Snow Loading Zone	Zone N0

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1 CONCRETE

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:

3101.1&2:2006(NZS)	Concrete Structures Standard
3104:2003(NZS)	Specification for concrete production
3109:1997(NZS)	Concrete construction
3112.1:1986(NZS)	Methods of test for concrete - Tests relating to fresh concrete
3112.2:1986(NZS)	Methods of test for concrete - Tests relating to the determination of strength of concrete
3114:1987(NZS)	Specification for concrete surface finishes
3121:2015(NZS)	Water and aggregate for concrete
3604:2011(NZS)	Timber-framed buildings
4218:2009(NZS)	Thermal insulation - Housing and small buildings
4246:2016(NZS)	Energy efficiency - Installing bulk thermal insulation in residential buildings
4671:2019(AS|NZS)	Steel for the reinforcement of concrete
4859.1:2018(AS|NZS)	Thermal insulation materials for buildings - Part 1: General criteria and technical provisions
4859.2:2018(AS|NZS)	Thermal insulation materials for buildings - Part 2: Design
NZBC B1/VM1	Structure
NZBC F2	Hazardous Building Materials

1.3 EXPOL Concrete Slab Insulation

1.3.1 Scope

Supply and install the selected EXPOL concrete slab insulation, complete with all accessories, reinforcing, and construct the concrete slab to the layout and details shown on the drawings. All aspects of this work shall be in accordance with the EXPOL concrete slab insulation specification and guidelines (check www.expol.co.nz or call 0800 86 33 73 for the latest editions), other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for EXPOL concrete slab insulation products.

1.3.2 Requirements

1.3.2.1 Requirements

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.

Extent of Work

The following is a list and a general description of the extent of the EXPOL Concrete Slab Insulation works, which are more specifically defined in the contract documents, required for the completion of the contract works:

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 EXPOL 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.

Should a problem be encountered with any EXPOL product during use or delivery, immediately contact EXPOL on 0800 86 33 73 or email tech@expol.co.nz. Contact EXPOL within 48 hours of finding the defective product. Do not continue to use the product that is not performing to specification or expectation. Keep the product in question, and where possible, the document batch numbers and/or manufacturing details.

Transportation

When transporting, storing or installing, ensure the EXPOL EPS Sheet is not exposed to:
Petroleum based solvents, or
Fire, or
Sustained direct sunlight.

1.3.2.2 Engineering Design

All works are to be constructed as per the architectural and engineering drawings, details, documents and specifications. Work is to be undertaken by experienced and suitably qualified persons to best industry practice and to the NZBC / relevant NZ standards. The contractor shall specifically ensure that works adhere to the information presented in the architectural and engineering design for: site preparation, foundation substrate preparation, grades and details of reinforcing steel, the EXPOL placement and the local authority inspection regime.

1.3.3 Co-operation

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

Coordinate with trades, the locations of penetrations, services, drainage fittings and shower set-downs, installed by others, to install the EXPOL Concrete Slab Insulation to the required layout and standard.

1.3.4 Substrate

The soil or fill beneath the foundation is to be prepared to the structural / civil engineer's requirements and to comply with the requirements of NZBC B2. Ensure that the required fill and its compaction meets the requirements of NZS 4431. Ensure that the foundation DPM, laps and details are completed as shown in the contract documents.

1.3.5 Workmanship

All installation work, including preparatory blinding, DPM, formwork, reinforcing, concreting and finishing techniques, shall be carried out by experienced tradesmen under the direct supervision of a LBP, familiar with the specified products and installation techniques, in accordance with the manufacturer's installation requirements, NZS 3109 and NZS 3114, and as noted and detailed on the drawings.
Store and handle all materials and products in accordance with the manufacturer's recommendations.
Notify the BCA for inspection of the excavation and of the slab ready for pouring, keep all records and test results they may require.

1.3.6 EXPOL Concrete Slab Insulation

EXPOL SLABX200 specifically designed for insulating concrete slabs. It delivers an uncompromised compressive strength of 200kPa @ 10% deformation and exceptional Insulation Values. Specifically engineered for residential and commercial projects
Size: 2400x1200mm
Total raft slab thickness: Units 1-2 = 320mm and Units 3-8 = 400mm
Slab thickness above EXPOL:
Concrete Strength:
Concrete Finish: U3, F5
DPM: 0.25mm thick polythene
Install as per EXPOL guidance and engineering contract documents. If in doubt, contact EXPOL for more information.

Use 50mm thick as per H1 calculations

1.3.7 Installation

Refer to EXPOL Building Product Information Sheet (Class 1). See Attached or visit www.expol.co.nz or email tech@expol.co.nz.
Installation shall only be undertaken by suitably qualified and experienced tradespeople.
Ensure that the site has been scraped of organics and topsoil and prepared as directed by the geotechnical engineer or structural engineer, to 'good ground' with the required bearing capacity, or as instructed.
If hardfill is required, ensure it is compacted as shown in the contract documents, to the required depth and in a layer depth as specified. Ensure the observing engineer has approved the preparatory works and fill compaction before carrying on further. Ensure the base is level and finished with 50mm of fine material, such as river blinding or crusher dust.
Before laying all EXPOL products, please observe the followin
• Site ground works must be complete
• Site must be completely level

• 50mm of crusher dust or manufactured sand must be laid on the entire site
• All plumbing is installed and inspected
All electrical cables should not be allowed direct contact with EXPOL EPS Sheet and require PVC sheathing.The boxing can be put in place following the site prep, with the specified DPM installed following this. Ensure all laps are taped and penetrations fully sealed. Care should be taken to ensure the DPM is installed as per manufacturer's instructions and is not damaged during installation of the EXPOL or reinforcing.
The EXPOL shall be installed as shown in the contract drawings, to the locations, direction of installation, details, methods and EXPOL Building Product Information Sheet (Class 1). EXPOL shall be installed in accordance with the installation instructions and if maintained according to relevant Standards including NZS-4246. All penetrations shall be cut in EXPOL as per instructions.

Reinforce as specified, and as noted and detailed on the drawings. All reinforcing bars, stirrups, links, mesh etc., accurately positioned and firmly secured to the required cover. Install proprietary control joints to the manufacturer's details and as shown on the drawings. Install plumbing waste pipes etc. as required and install the reinforcing mesh over the top of the EXPOL, seated on mesh chairs, install shrinkage control bars across internal corners as noted. Install starters as detailed for any subsequent masonry walls, ensuring accurate positioning (as bending to masonry core positions is not acceptable).

Pour the specified concrete, vibrate, screed, cure and finish as specified or as per notes.

1.3.8 Completion

Check that the concrete slab has been correctly formed and finished, that all cast-in items are correctly installed and positioned and that the DPM has been lapped up as detailed. Check for damage and faults and repair as necessary. Leave the slab and surrounding area clear of rubbish and any EXPOL off-cuts, remove from site.

Complete the EXPOL "XPS 15 YEAR PRODUCT WARRANTY" at EXPOL XPS Warranty. Or EXPOL "EPS 20 YEAR PRODUCT WARRANTY" at EXPOL EPS Warranty.

2 WATERPROOFING

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:

2358:1990(AS)	Adhesives - For fixing ceramic tiles
3661.2:1994(AS/NZS)	Slip resistance of pedestrian surfaces - Part 2: Guide to the reduction of slip hazards
3740:2010(AS)	Waterproofing of domestic wet areas
4586:2004(AS/NZS)	Slip resistance classification of new pedestrian surface materials
4858:2004(AS/NZS)	Wet area membranes
BRANZ Good Practice Guide	Tiling
NZBC B2/AS1	Durability
NZBC D1/AS1	Access Routes
NZBC E3/AS1	Internal Moisture

2.3 ARDEX Tiling Solutions

2.3.1 Scope

Supply and install ARDEX Tiling Solutions products and systems as components and accessories of the Tiling works identified on the drawings. 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 as shown on the drawings.

No substitutions are permitted for any specified ARDEX Tiling Solutions products, systems, components or accessories.

As necessary, this specification should be read in conjunction with other relevant ARDEX specifications, as referenced herein, as they may be interrelated.

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

2.3.2 Requirements

2.3.2.1 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.

2.3.2.2 Warranty

ARDEX NZ Ltd Warranty. Warrant this work under normal use and environmental conditions, against failure of materials and application, according to the warranty conditions.
- 10 Years' Warranty Materials and Workmanship - for all tiling applications other than interior wet-area tiling.
- 15 Years' Warranty Materials and Workmanship - for all interior wet-area tiling applications.
- Provide the warranty on the manufacturer's standard warranty form.
- Commence the warranty from the date of practical completion.

2.3.2.3 Substitutions

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

The substitution of a specified ARDEX tiling product for an alternative ARDEX branded product by the Tiler shall only be permitted with the Contract Administrator's 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 ARDEX branded products to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Tiler.

2.3.2.4 Quality Assurance

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

2.3.2.5 Evidence of Slip Resistance

If requested, provide certified evidence of the slip resistance classification for each floor tile specified.

2.3.2.6 Inspections & Reporting

BCA inspections shall take place at each of the stages as scheduled in the Building Consent. Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection.

Carry out all necessary pre-installation, installation and finishing inspections of Tiling for each area of work in accordance with the requirements of industry best practice recommendations and code of practice guidelines.

Complete all necessary Pre-Installation Checklists prior to installing proprietary under-tile waterproofing systems and heating systems and floor levelling compound systems, and all relevant Installation Checklists.

Complete all necessary Installation Sign-Off Certificates before undertaking subsequent work or before handing over completed work.

2.3.2.7 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 Tiling materials and work shall be repaired and/or replaced to the satisfaction of the Contract Administrator, without delay and at no additional cost to the Principal.

Should a problem be encountered with any ARDEX product during use or delivery, 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 the product in question and where possible, the document batch numbers and/or manufacturing dates.

2.3.2.8 Spare Tiles

Upon completion of the Tiling works, supply and deliver to the Principal the specified quantity of unopened packs of each tile specified.

Quantity:

2.3.3 Performance

2.3.3.1 Interior Wet Area Performance

Interior Wet Area Performance. The performance of tiled interior wet areas shall comply with the requirements of NZBC E3/AS1.

2.3.3.2 Slip-Resistance Performance of Access Routes

Slip-Resistance Performance of Access Routes. The slip-resistance performance of tiled access routes, ramps and stairs shall comply with the requirements of NZBC D1/VM1 and NZBC D1/AS1.

2.3.4 Undertile Levelling Underlayment

2.3.4.1 ARDEX Undertile Levelling Compounds

ARDEX Undertile Levelling Compounds. Refer to separate specification ARDEX Floor Levelling & Repair Solutions.

2.3.5 Undertile Waterproofing

2.3.5.1 Interior Wet-Area Tiling - ARDEX WPM 002

Interior Wet-Area Tiling - ARDEX WPM 002. Refer to separate specification section Waterproofing: ARDEX Liquid-Applied Waterproofing Membranes.

2.3.6 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 tiling as required, and to ensure that:
- appropriate tolerances and clearances allow for adjacent finishes, fixtures and fittings, etc; and
- penetrations for piped and cabled services are correctly located to maintain tile integrity and tiling performance.

2.3.7 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 Tiling work shall be carried out to best trade practice by qualified and experienced tradespersons, familiar with the specified materials and installation and finishing techniques, in accordance with AS 3958.1 and relevant product manufacturers' technical literature, to the layout and details shown on the approved drawings, and to fully comply with all warranty requirements.

Submit evidence of experience on request, e.g. National Certificate in Floor and Wall Tiling, or certified member of Master Plasterers and Tilers Association.

All substrate preparation, tile laying and tiling accessories application and finishing techniques shall be exactly as recommended by the specified product manufacturer. All work shall be such as to leave a neat, efficient and robust installation.

Interior wet-area tiling shall be waterproof and installed over a waterproof membrane as shown on the drawings.
Exterior floor tiling shall be waterproof and weathertight, and where necessary installed over a waterproof membrane as shown on the drawings.

As recommended by the tile manufacturer, use only an approved adhesive that is compatible with the specified tile, its substrate and its application/use.

Where necessary, delay tiling to allow maximum curing and settling and initial creep of the substrates, particularly to load bearing structural elements.

Do not cover or bridge movement control joints with tiles and tile underlay.

Tiling shall not be undertaken when the ambient and surface temperatures are outside the specified product manufacturer's permissible temperature range.

Where necessary, mask off and protect from contamination adjacent surfaces, joinery, fixtures and finished work before commencing.

Exterior tiling shall not be undertaken during inclement weather. As necessary and in accordance with the manufacturer's requirements, protect exterior tiling from rain, hot dry winds and direct sunlight to aid proper drying and curing.

Leave all tiled surfaces clean, sound, and free from blemishes of any kind.

2.3.8 Delivery & Handling

Upon delivery to site, inspect the tile packs and reject those items that are found to be damaged, defective or contaminated. Contact the tile supplier for replacement of rejected items at time of delivery to site.

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

Should a problem be encountered with any ARDEX tiling product at time of delivery or during use, immediately contact the ARDEX Technical Hot Line on 0800 227 339. Do not continue to use the product if it is not performing to specification or expectation. Keep the product in question, and where possible, the product batch numbers and/or manufacturing dates.

Store all tiling materials undercover, in a weatherproof environment, off the floor, on a flat, even and level surface in accordance with the manufacturer's requirements. Keep products and materials dry, out of direct sunlight and protected from damage, moisture and contamination at all times.

Handle all tiling materials in accordance with the manufacturer's requirements.

Installers shall be familiar with and comply with all associated product Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials.

Installers shall 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.

2.3.9 Preparation

2.3.9.1 General

Before commencing tiling, prepare and prime substrates according to the requirements of the ARDEX tile adhesive technical literature. If there is any uncertainty, contact the ARDEX Technical Hot Line on 0800 227 339 to confirm preparatory requirements.

All substrates to be tiled shall be structurally sound, 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 affect the bonding and performance of the specified tile adhesive and grout.

Carry out all necessary moisture readings of substrates. Do not commence installation until the moisture readings for the whole area are below the required level.

Carry out all necessary substrate inspections and preparatory work in accordance with ARDEX recommendations prior to application.

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

Confirm the location of any movement control or crack control joints prior to commencement of the works, and ensure that they are appropriately trimmed. Do not cover or bridge movement control joints with tiles, adhesive and grout.

Allow self-levelling underlayments and mortar screeds to properly cure in accordance with the manufacturer's recommendations before commencing tiling.

Allow new concrete substrates to cure for at least four weeks prior to tiling.

Prime porous substrates using ARDEX primers in accordance with the requirements of the respective ARDEX tile adhesive.

Ensure that the back of each tile is clean and free from dust or other contaminants prior to laying.

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

2.3.10 Installation

2.3.10.1 Undertile Liquid-Applied Waterproofing Membranes

Undertile Liquid-Applied Waterproofing Membranes. Install ARDEX liquid-applied waterproofing membranes in strict accordance with the manufacturer's requirements. Refer to separate specification section Waterproofing: ARDEX Liquid-Applied Waterproofing Membranes.

2.3.10.2 Aluminium Trims

Aluminium Trims. As required and indicated on the drawings, install all necessary aluminium tiling trims - including edge cappings, corner mouldings, transition strips, etc., - all neatly finished, accurately aligned and true, according to the tile layout and as detailed on the drawings.

2.3.10.3 Movement Control Joints

Movement Control Joints. Form movement control joints in tiling to the locations and details shown on the drawings and in accordance with AS 3958.1.

Movement control joints in tiling shall coincide with control joints in the substrate and structure, and at junctions between dissimilar substrates and other surface finish materials in the same plane.

Ensure to carry movement control joints through tiling from the substrate. Do not bridge movement control joints with underlayment, membranes, adhesive or tiles.

Seal movement control joints after grouting with the specified flexible sealant in accordance with the sealant manufacturer's instructions and as detailed.

Proprietary movement control joints shall be installed in strict accordance with the manufacturer's instructions and to the layout and details shown on the drawings. Finish tiling against proprietary movement control joints as detailed.

2.3.10.4 Floor Tiles

Floor Tiles. Install floor tiles by direct-stick method to clean, dry and properly prepared substrates in accordance with AS 3958.1 and the respective ARDEX tile adhesive instructions. Accurately set-out and lay tiles to the layout and details shown on the drawings. Confirm the floor tile layout and pattern requirements prior to installation.

Seal or prime porous substrates or substrates where dusting or powdering exists, in accordance with the requirements of the ARDEX tile adhesive.

The use and application of ARDEX tile adhesive shall be exactly to the manufacturer's technical literature.

All tile cutting, boring and shaping shall be carried out using appropriate tools and equipment and methods suitable for the tile type and in accordance with the tile manufacturer's recommendations. Only install cut tiles that have smooth, uniform cut edges - do not use tiles with jagged or flaked edges.

Mechanically mix powdered adhesive at the recommended ratio with clean potable water to a smooth, lump-free paste in accordance with the manufacturer's requirements. Do not mix more than can be used within the specified open time.

Apply ARDEX tile adhesive evenly using a suitably notched trowel to properly prepared substrates in accordance with the manufacturer's instruction.
- Do not apply more adhesive than can be covered within the specified open time.
- Do not over spread the adhesive, and avoid surface skinning - particularly when used in unfavourable conditions such as direct sunlight, wind and/or high temperatures.
- Ensue to follow the adhesive manufacturer's recommended setting and curing periods.

Lay floor tiles into adhesive to achieve maximum contact and bonding before skinning occurs. Re-trowel any adhesive that has skinned - do not apply water to skinned adhesive. Where necessary, back-butter tiles with adhesive to ensure maximum contact and bonding - do not spot-fix floor tiles.

Floor tiles shall be laid so that the finished surface and edges are true and even, level and/or to the falls shown on the drawings, and finished flush with adjoining finished work as appropriate or as detailed.

Tile joints shall be to the required layout, uniform, accurately aligned, straight and true to line, and set even and parallel to the specified joint width.

Where indicated on the drawings, return floor tiles along walls, upstands, toe spaces, etc., to the height and details shown on the drawings.

Remove excess adhesive from tile joints as each tile is laid to ensure full depth grouting can be achieved, and leave the tile surface completely clean.

2.3.10.5 Wall Tiles

Wall Tiles: Install wall tiles by direct-stick method to clean, dry and properly prepared substrates in accordance with AS 3958.1 and the respective ARDEX tile adhesive instructions. Accurately set-out and lay tiles to the layout and details shown on the drawings. Confirm the wall tile layout and pattern requirements prior to installation.

Seal or prime porous substrates or substrates where dusting or powdering exists, in accordance with the requirements of the ARDEX tile adhesive.

The use and application of ARDEX tile adhesive shall be exactly to the manufacturer's technical literature.

All tile cutting, boring and shaping shall be carried out using appropriate tools and equipment and methods suitable for the tile type and in accordance with the tile manufacturer's recommendations. Only install cut tiles that have smooth, uniform cut edges - do not use tiles with jagged or flaked edges.

Mechanically mix powdered adhesive at the recommended ratio with clean potable water to a smooth, lump-free paste in accordance with the manufacturer's requirements. Do not mix more than can be used within the specified open time.

Apply ARDEX tile adhesive evenly using a suitably notched trowel to properly prepared substrates in accordance with the manufacturer's instruction.
- Do not apply more adhesive than can be covered within the specified open time.
- Do not over spread the adhesive, and avoid surface skinning - particularly when used in unfavourable conditions such as direct sunlight, wind and/or high temperatures.
- Ensue to follow the adhesive manufacturer's recommended setting and curing periods.

Press wall tiles into adhesive to achieve maximum contact and bonding before skinning occurs. Re-trowel any adhesive that has skinned - do not apply water to skinned adhesive. Where necessary, back-butter tiles with adhesive to ensure maximum contact and bonding - do not spot-fix wall tiles.

Wall tiles shall be installed so that the finished surface and edges are true and even, level, and finished flush with adjoining work as appropriate or as detailed.

Tile joints shall be to the required layout, uniform, accurately aligned, straight and true to line, level and plumb, and set even and parallel to the specified joint width. Use proprietary tile spacers, sized for the specified joint width, to ensure accurate jointing.

Form internal and external wall corner junctions true and plumb and with tile joints continued around corners level and true.

Remove excess adhesive from tile joints as each tile is laid to ensure full depth grouting can be achieved, and leave the tile surface completely clean.

2.3.10.6 Stairs & Steps

Stairs & Steps. Accurately lay tiles to steps and stair treads, risers and landings as detailed on the drawings. Finish tiles neatly along tread/riser junctions and against trim. Ensure that the tile joints on treads and risers are aligned, straight and true along each stair flight. As indicated on the drawings, install nosing tiles or proprietary stair-nosings.

2.3.10.7 Grouting

Grouting. Tile grouting shall be in accordance with AS 3958.1 and the respective ARDEX tile grout instructions. Coloured grout shall be to the colour specified.

Prior to grouting, ensure that the tile adhesive has set firmly, and that the tile joints are clean, dry and free from excess adhesive and any foreign material. Rake out any excess adhesive from joints to ensure a maximum, uniform grout joint is achieved. Tile spacers must be removed prior to grouting.

Mechanically mix powdered tile grout with clean water at the required ratio to a smooth, lump-free paste in accordance with the manufacturer's requirements. Do not mix more than can be used within the manufacturer's specified open time. Ensue to follow the manufacturer's recommended drying and curing periods.

Apply ARDEX tile grout evenly with a rubber squeegee or grouting float, ensuring that the tile joints are completely filled and smoothed to a dense, uniform surface. Do not spread more grout than can be cleaned within the specified open time. Remove excess grout immediately.

Clean the tiles with a damp sponge when the grout joints have firmed, making sure not to wash-out the joints. Finish grout joints to a smooth, uniform effect and leave grout free of pin holes and blemishes.

Allow grout joints to dry before cleaning with a clean, dry, soft cloth, to completely remove any grout haze and residue from the surface of the tiles.

2.3.10.8 Protection

Protection. Take all necessary measures to protect exterior tiling from the extremes of weather and climate during the fixing and grouting operation and for as long as possible thereafter.

Keep the working area cordoned off during the whole tiling installation. Protect completed tiling from excessive loads, damage and contamination until hand-over or as directed.

Restrict foot traffic from completed floor tiling in accordance with ARDEX time frames for 'set-to-light-foot-traffic' and 'ready-for-service-use'.

Where necessary, cover completed floor tiling with a heavy-duty temporary floor protection such as Ovaboard, Ram Board, Buffalo Board; laid in accordance with the manufacturer's requirements.

Protect exterior tiling, immediately after laying and grouting, from rain and moisture for at least 24 hours, and from frost and strong sunlight after laying in accordance with ARDEX tile adhesive and grout technical specifications.

2.3.11 Completion

Check that the Tiling work has been correctly installed to the required layout, and that all tile joints, edge-trimming and other detailing is correctly finished, grouted and sealed.

Check all tiling work for damage, marks and defects - repair or replace as necessary. Carry out any repairs to the required standard.

Thoroughly clean tiled surfaces in accordance with the manufacturer's recommended procedures and techniques. Lightly buff where appropriate.

Leave all of this work complete and to the required standard, completely clean and without blemish.

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

Protect the completed installation from damage and contamination as necessary until hand-over as scheduled or directed.

Issue to the Owner a copy of all relevant product manufacturers' maintenance requirements, and a copy of the ARDEX NZ Ltd Warranty.

2.4 Membrane Decking

2.4.1 Scope

Supply and install the specified waterproof membrane decking, complete with all components and accessories, to the locations shown on the drawings. All aspects of this work shall be in strict accordance with the manufacturer's technical guidelines, installation specifications and details, other relevant product manufacturers' recommendations, and as shown on the drawings.

2.4.2 Waterproof Deck System

Single layer flexible synthetic rubber waterproofing membrane, minimum 1.5mm thick, installed (adhesive fixed) as a pedestrian grade trafficable waterproof membrane decking system on properly prepared substrates in accordance with the manufacturer's requirements and as shown on the drawings.

Manufacturer, brand name & type: VIKING TPO
Membrane thickness:
Roll width:
Colour:
Location:

2.4.3 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. Co-ordinate with other trades to install Waterproof Membrane Decking as required.

2.4.4 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 installation work shall be carried out by experienced contractors, authorised by the manufacturer, familiar with the specified products and installation techniques, to fully comply with all of the manufacturer's warranty requirements in accordance with the manufacturer's installation requirements and as noted and detailed on the drawings.

2.4.5 Delivery & Handling

Store products off the ground on a flat surface undercover, keep materials dry and out of direct sunlight, and protect from damage. Do not use damaged or faulty products, or products beyond the designated shelf life. Handle materials and products in accordance with the manufacturer's recommendations.

2.4.6 Preparation

Ensure the deck substrate and any internal gutters are to the falls and levels as shown on the drawings, that overflows are provided where the decking drains to an internal gutter, and that penetrations, flashings, and edge upstands are carried above the overflow level. Check that crack control and movement joints are incorporated in the locations as shown on the drawings, and are constructed as recommended by the manufacturer. Ensure the substrate is clean and free of oil, grease, and other contaminants, and is smooth with any defects filled to an even surface.

Check that the plywood has been laid with staggered joints, and is supported on framing at maximum 400mm centres, that the plywood is 20mm minimum thickness, is CD grade (C face up), is H3 CCA treated (LOSP treated plywood must NOT be used), is installed and fixed exactly to the ply manufacturer's and membrane manufacturer's recommendations, and complies with E2/AS1 8.5.3 and 8.5.5.
20 x 20 mm H3 timber fillet deck/wall junctions, and 5mm radius chamfer external edges at turn-downs. Ensure the maximum moisture content is 20%, and that the plywood is surface dry at the time of membrane application.

2.4.7 Primer

Apply the membrane decking primer to properly prepared substrates for optimum membrane adhesion in accordance with the manufacturer's requirements. Limit priming to no more than can be covered by the membrane in one working day or as recommended by the manufacturer, and allow the primer to properly dry before installing the membrane. Protect the primed surface from contamination until membrane installation.

Manufacturer, brand name & type:

2.4.8 Adhesive

Apply the membrane decking adhesive to the primed substrate at the recommended application rate to achieve proper membrane bonding, and to membrane joints and folds as necessary, in accordance with the manufacturer's requirements.

Manufacturer, brand name & type:

2.4.9 Installation

Install the membrane decking system, including all surface priming, membrane application, jointing, flashing and sealing, etc., and all system supplied fillets and metal edge trims, outlets and sumps etc., in strict accordance with the manufacturer's installation requirements and details, and as shown on the drawings.

Prepare all substrate sheet joints with a system approved pressure sensitive tape.
Unroll the membrane on to the substrate and allow it to relax for at least 20 minutes prior to installation. Do not lay membrane sheets under tension.
Commence membrane installation at sumps and proceed through gutters to the main deck installing the membrane up the deck slope from the lowest edge to the high point. Sheets generally laid in two stages along the sheet length.
Apply adhesive to the substrate and to the underside of the first half of the membrane sheet, leave to tack dry, then fold the sheet along its length over the adhesive, thoroughly roll to remove entrapped air and to achieve full bonding, repeat the process to fix the other half of the sheet along its length.
Joints overlapped 50mm and adhesive sealed watertight, or pre-primed and sealed watertight with proprietary lap tape, in accordance with the manufacturer's requirements. Joints neatly finished straight and parallel.
Use neatly cut strips of membrane for gutters and upstands etc., and install system supplied preformed corners, metal edge trims, flanged drains, outlets, and sumps etc., as required and/or specified to complete the installation.
Finish any control joints located on the drawings to the manufacturer's requirements.
Consult the manufacturer regarding any detail where a standard system detail does not exist.
Protect installed membrane as required, avoid puncturing or damaging the membrane during installation; repair or replace as necessary.

2.4.10 Completion

Check that the membrane decking system has been installed correctly, and that all system accessories are correctly installed and finished. Check for damage and repair or replace as necessary.

If reasonably possible, flood test box gutters and low-fall decks with a minimum 40mm water depth for 24 hours, carry out any additional works necessary as a result of the testing.
Leave the completed membrane decking system leak free and watertight. Completely clean the works area and remove all rubbish and waste material from the site.

Issue to the Owner a copy of the manufacturer's maintenance requirements and a copy of the product and installation warranties for the completed works.

3 CARPENTRY

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.

Comply with all relevant provisions and recommendations of:

1170.2:2011(AS/NZS)	Structural design actions - Wind actions
1397:2001(AS)	Steel sheet and strip - Hot-dip zinc-coated or aluminium/zinc-coated
1530.3:1999(AS/NZS)	Methods for fire tests on building materials, components and structures - Simultaneous determination of ignitability, flame propagation, heat release and smoke release
2588:2018(AS|NZS)	Gypsum plasterboard
2589:2017(AS/NZS)	Gypsum linings - Application and finishing
2908.2:2000(AS/NZS)	Cellulose-cement products - Flat sheets
3601:1973(NZS)	Metric dimensions for timber
3602:2003(NZS)	Timber and wood-based products for use in building
3603:1993(NZS)	Timber Structures Standard
3604:2011(NZS)	Timber-framed buildings
3622:2004(NZS)	Verification of timber properties
3631:1988(NZS)	New Zealand timber grading rules
3640:2003(NZS)	Chemical preservation of round and sawn timber
4600:2018(AS|NZS)	Cold-formed steel structures
AS/NZS 1080.1:2012	Timber - Methods of test - Method 1: Moisture content
NASH Standard	Residential and Low-rise Steel Framing - Part 1: Design Criteria
NZBC B2/AS1	Durability
NZBC C/AS1-AS6	Protection from Fire
NZBC C/AS2-AS6	Protection from Fire
NZBC G6	Airborne and Impact Sound
NZBC H1	Energy Efficiency

3.3 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.

3.4 Timber Framing

3.4.1 Scope

Supply and install timber framing to the floors, walls, roofs, and other timber framed elements, as identified and detailed on the drawings. All aspects of this work shall be in accordance with NZS 3604, product manufacturers' recommendations, and as shown on the drawings and the specification.

Supply and install timber framing components, as specified herein, to the locations and details shown on the design drawings, complete with all necessary accessories required for proper installation and performance. All aspects of this work shall comply with the NZ Building Code, NZS3604:2011 and its updates, related technical literature and other relevant product manufacturers' recommendations.

This specification covers timber framing of sub-floors, floors, walls and roofs. No substitution is allowed where a specific manufactured component is noted on the drawings.

Extend of work:

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

3.4.2 Requirements

3.4.2.1 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.

3.4.2.2 Warranty:

Provide Timber Component Warranty in according with the manufacturer's warranty terms and conditions:

- Commence the warranty from the date of permanent installation of the component.

Include a copy of the manufacturer's maintenance requirements where applicable.

3.4.2.3 Inspection & Reporting:

BCA inspections shall take place at each of the stages as scheduled in the Building Consent. Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection.

Carry out all necessary pre-installation and installation inspections for each area of the works.

Complete all necessary Pre-Installation Checklists prior to installation, and all necessary Installation Checklists.

Complete all necessary Final Checklists and Installation Sign-Off Certificates before handing over completed work.

3.4.2.4 Quality Assurance:

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

3.4.2.5 Defective Material & Work:

Should defective materials and/or work be found at any time before the final acceptance of the work, it shall be rejected. Rejected timber framing components and work shall be repaired and/or replaced to the satisfaction of the Contract Administrator without delay and at no additional cost to the Principal.

3.4.3 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, as required, the assembly and installation of the timber framing to the required layout, details and tolerances.

3.4.4 Workmanship

3.4.4.1 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 work shall be carried out to current best trade practise by experienced and competent tradesmen, familiar with the materials and installation techniques, in accordance with NZS 3604:2011 and as shown on the drawings.

3.4.5 Timber Framing General

3.4.5.1 Timber Grade and Quality:

Unless otherwise noted or specified on the drawings or specification, all framing timber shall be minimum structural grade SG 8 Radiata pine in accordance with NZS 3622.

Framing timber shall be seasoned or kiln dried, and be straight and true and free from wind, warp and distortion, and in lengths suitable for the members required, and shall have a moisture content of between 12% and 18% before installation.

Do not used damaged, faulty or defective materials.

3.4.5.2 Timber Treatment:

All non-durable timber framing shall be appropriately treated against moisture and/or insect decay by treatment plants with recognised quality assurance systems that are administered by the Timber Preservation Council (NZTPC). Treatment of timber and wood-based building products shall be to the requirements of NZS 3602 as an absolute minimum, and all treated timber shall be identified and marked as required.

Carefully manage treated framing during installation to avoid accidental use of timber with a lower performance or durability treatment than that required or specified.

3.4.5.3 Storage & Handling:

Check timber framing upon delivery and reject sub-standard or damaged material.

Store timber framing dry under cover, fillet stacked and well clear of the ground, and protect from damage, moisture, and contamination.

Ensure all appropriate personal protection equipment is worn at all times when handling and cutting treated framing.

3.4.5.4 Concrete Separation:

Separate timber framing with an approved continuous damp proof course when in direct contact with concrete or masonry. Ensure that the DPC material is compatible with the timber treatment.

Free draining separations to external vertical faces shall be 12mm minimum and as noted on the drawings.

3.4.5.5 Timber Re-treatment:

All cut or drilled surfaces of H4 and H5 treated timber framing shall be flood coat re-treated, with a suitable product recommended by the original treatment plant, before installation.

3.4.5.6 Framing Protection:

Protect timber framing as required during installation against damage and moisture, and against significant variation of moisture content until ready for lining. Avoid ponding of water around floor plates.

3.4.5.7 Built-up Framing Members

Except for jack studs, bottom plates and top plates, framing members may be substituted with built-up members in accordance with the limitations of NZS 3604 2.4.4.7. All built up members must meet or exceed the requirements of their specific application as shown on the plans.

3.4.6 Timber Framing Fixing, Fasteners & Connectors

3.4.6.1 Durability:

The minimum durability of timber framing fixings and fastenings, nails and screws, shall comply with the durability requirements of NZS 3604.

- Galvanised steel fixing components shall have galvanised coating masses in accordance with NZS 3604 Table 4.2.
- Unless noted or specified otherwise, the materials for nails and screws shall be as given in NZS 3604 Table 4.3.
- Steel fixings and fastenings in contact with timber treated with copper based timber preservatives (H3.2 or higher) shall be in accordance with NZS 3604 4.4.4.
- Unless noted or specified otherwise, Stainless steel nails shall be minimum Grade 304.

3.4.6.2 Fastenings and Connectors:

Unless otherwise noted or specified, timber framing fastenings and connectors shall be as specified in the relevant fixing schedules of NZS 3604 or have an equivalent capacity as specified therein.

Timber framing connectors and fixings shall comply with the product information as required in NZS 3604 2.4.6, and shall be used and installed in accordance with the manufacturer's recommendations.

Pre-drill nail holes in split-prone framing as necessary.

3.4.6.3 Bolts and Screws:

Unless specified or shown otherwise, all bolted and screwed connections shall be M12 or M16 in accordance with the relevant fixing requirements given in NZS 3604.

Bolted and screwed connections shall have either a 50mm x 3mm square, or a 55mm x 3mm round, washer to each head and nut for M12 and M16 fixings. Washers shall be of the same material and durability as the bolt or screw.

3.4.6.4 Wire dogs:

Unless specified or shown otherwise, wire dog connections must be installed to the requirements given in NZS 3604.

Wire dog connections shall be steel of at least 4.9mm diameter and shall penetrate at least 30mm (min) in to each peice of timber.

3.4.7 Wall Framing

3.4.7.1 Bottom Plate:

Bottom plates shall be to the dimensions and layout shown on the drawings. Unless specified or shown otherwise, bottom plates shall be fixed in accordance with NZS 3604 7.5.12 and Tables 8.18 and 8.19, true to line and level or angle.

Joints in bottom plates shall be made over a stud or over blocking between studs, and all bottom plate connections shall be in accordance with NZS 3604 8.7.3. Form all holes and edge notches in bottom plates in accordance with NZS 3604 8.7.5.

3.4.7.2 Top Plate:

Top plates shall be to the dimensions and layout shown on the drawings. Unless specified or shown otherwise, top plates shall be fixed in accordance with NZS 3604 7.5.12 and Tables 8.18 and 8.19, true to line and level or angle.

Joints in top plates shall be made over a stud or over blocking between studs, and all top plate connections shall be in accordance with NZS 3604 8.7.3. Form all holes and edge notches in top plates in accordance with NZS 3604 8.7.5.

3.4.7.3 Studs:

Studs shall be to the dimensions and spacings shown on the drawings, and installed true to line and plumb in both directions between top and bottom plates.

Unless noted otherwise, non-load bearing wall studs shall be to the spacings given in NZS 3604 Table 8.4, stud width as shown on the drawings.
Form all holes and edge notches in studs in accordance with NZS 3604 8.5.1.5. Do not notch, check, cut, or bore holes in the middle third of any trimming stud.

Should the need arise, studs shall be straightened in accordance with NZS 3604 8.5.3 with prior approval from the Architect/Designer only.

Unless noted otherwise, studs in loadbearing walls for 3 kPa floor loads shall be in accordance with NZS 3604 Table 14.10.

3.4.7.4 Sill & Head Trimmers:

Unless specified or shown otherwise, sill and head trimmers to openings shall be the same width as the wall stud and to the thickness given in NZS 3604 Table 8.15, and installed at the required opening height true to line and level, and supported by a 45mm thick doubling stud or jack stud fixed to a trimming stud.

3.4.7.5 Dwangs:

Dwangs shall be the same width and thickness as the wall stud, and installed at the centres noted on the drawings, and accurately cut and fixed in place true to line and level and flush with stud edges. Dwangs fixed in accordance with NZS 3604 Table 8.19.

3.4.8 Ceiling Framing

Ceiling framing shall be to the dimensions, layout, spacings, and details shown on the drawings, and shall be installed true to line, level and plane, and securely fixed in accordance with NZS 3604 Table 13.3.

3.4.9 Roof Framing

3.4.9.1 Roof Trusses:

Roof trusses shall be Specific Engineering Design (SED) in accordance with NZBC B1/VM1 and manufactured by an accredited fabricator, and shall comply with all aspects of NZS 3604 10.2.2. Roof

trusses shall be fabricated to meet the specific design requirements of the roof including, but not limited to; roof layout, pitch, and details, in accordance with the drawings and specification.

Roof trusses shall be supported and fixed to the truss fabricator's specifications but shall be no less than that required by NZS 3604 Tables 10.14 and 10.15. Roof trusses shall be braced as shown on the drawings and in accordance with NZS 3604 10.3.

3.4.9.2 Roof Bracing:

Roof bracing shall be as shown on the drawings and in accordance with NZS 3604 10.3 and 10.4 as necessary.

3.4.10 Preparation

3.4.10.1 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.

3.4.11 Installation

3.4.11.1 Installation:

All timber framing members, including all dwanging, strutting, blocking, bracing etc, shall be sized, setout, fitted and fixed to the requirements of NZS 3604 and as shown on the drawings to accommodate structural loadings, cladding and lining setout and support, and the installation of other building components, fixtures and fittings.

All framing shall be erected without deviation, true to line, level, angle and plumb, and evenly aligned and square, and within the tolerances allowed in NZS 3604 Table 2.1. Framing members accurately cut, lapped, housed, joined, and seated so as to provide full contact over the bearing surfaces.

Temporarily prop, brace, tie, and secure framing members and elements as required until the framing is complete and self supporting. Leave in place for safety purposes as long as required.

Edge notching and centre holes:

The notching, checking, and boring of framing members shall be in strict accordance with the requirements of NZS 3604.

Avoided checking and cutting where possible and keep to such dimensions so as not to prejudice the purpose for which the member is used. Keep edge notching to a minimum and where possible use centrally bored holes instead.

Concealed services pipes and wiring shall not project beyond the framing face and where possible shall be beyond the lining's fixing reach.

3.4.12 Completion

3.4.12.1 Completion:

Check the timber framing and its components 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. Carry out any necessary repairs in accordance with the manufaturers requirements to the required standard. Replace timber framing components 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.

3.5 GIB® Intertenancy Barrier Systems for Terrace Homes

3.5.1 Scope

Supply and install the specified GIB® Intertenancy Barrier Systems for Terrace Homes to the locations identified on the drawings, incorporating GIB Barrierline® central barrier and all system components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with the GIB® Intertenancy Barrier Systems for Terrace Homes Specification and Installation Manual and the current GIB® Site Guide (check www.gib.co.nz, or call 0800 100 442 for the latest editions), BRANZ Appraisal No.940, other relevant product manufacturers' recommendations, and as shown on the drawings.

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

This specification section must be read in conjunction with the GIB® Plasterboard Linings specification and other specification sections, as they are interrelated.

For the purpose of this specification, the GIB® Intertenancy Barrier System for Terrace Homes Specification and Installation Manual has been abbreviated to 'GIB® Intertenancy Manual'..

3.5.2 Requirements

3.5.2.1 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.

3.5.2.2 Warranty

GIB® Product & System Warranty:

- 10 Years Warranty - for all GIB® Products and Systems installed, according to warranty conditions.
- 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.

3.5.2.3 Piped & Cabled Services

GIB® Intertenancy Barrier Systems for Terrace Homes allow installation of piped and cable services in the cavities either side of the central barrier. Refer to page 9 of the GIB® Intertenancy Manual for further information.

Only where shown and specified on the approved drawings shall penetrations be made through the GIB Barrierline® central barrier within a roof space and fire-sealed to the specified fire resistance rating. Do not permit piped or cabled services to penetrate the GIB Barrierline® central barrier under

any circumstances unless clearly shown and specified on the approved drawings, or without prior written approval from the Architect/Designer.

3.5.2.4 Exposure to Elements

The construction programme must ensure that the GIB Barrierline® central barrier is left exposed to the elements for as short a time as possible. Take all necessary precautions to protect the erected central barrier from exposure to moisture and adverse weather conditions.

Once installed and in a vertical orientation, GIB Barrierline® plasterboard can be exposed to the elements for up to 12 weeks before the building is closed in.

Once installed and in a vertical orientation, 16mm GIB Fyreline® plasterboard can be exposed to the elements for up to 4 weeks before the building is closed in.

GIB® plasterboard linings must not be exposed to water or be installed in situations where extended exposure to humidity above 90% RH can reasonably be expected. GIB® plasterboard linings must not be exposed to temperatures in excess of 52°C for prolonged periods.

3.5.2.5 Quality Assurance

Ensure that the installation and finishing of GIB® Intertenancy Barrier Systems for Terrace Homes 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.

3.5.2.6 Inspection & Acceptance of GIB® Intertenancy Barrier Systems for Terrace Homes

Carry out all necessary pre-installation, installation and finishing inspections necessary for GIB® Intertenancy Barrier Systems for Terrace Homes for each area of work in accordance with the requirements of the GIB® Intertenancy Manual, GIB® Site Guide, GIB® Systems literature.

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

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

3.5.2.7 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® Intertenancy Barrier Systems for Terrace Homes materials and/or work shall be repaired and/or replaced to the satisfaction of the Architect/Designer, without delay and at no additional cost to the Principal.

3.5.2.8 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 other 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.

3.5.3 Performance

3.5.3.1 Bracing Performance

Bracing Performance - GIB EzyBrace® Systems. 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 (2016), and other relevant product manufacturers' recommendations. Refer to separate specification GIB EzyBrace® Systems.

3.5.3.2 Fire Rating Performance

Fire Rating Performance - GIB® Fire Rated Systems. To the areas noted as 'Fire-rated' on the drawings, additionally comply with all relevant aspects of the latest GIB® Fire Rated Systems (2018) publication according to the specified fire resistance rating (FRR), BRANZ Appraisal No.289 (2018), and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Fire Rated Systems.

3.5.3.3 Sound Insulation Performance

Sound Insulation Performance - GIB® Noise Control Systems. To the areas noted as 'Sound-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Noise Control Systems (2017) publication according to the specified sound transmission class (STC) rating, BRANZ Appraisal No.394 (2017), and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Noise Control Systems.

3.5.3.4 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 latest GIB Aqualine® Wet Area Systems publication, BRANZ Appraisal No.427 (2007), and other relevant product manufacturers' recommendations. Refer to separate specification GIB Aqualine® Wet Area Systems.

3.5.4 GIB® Intertenancy Barrier System

3.5.4.1 GBTLAB 60b

GIB® Intertenancy Barrier System for Terrace Homes - GBTLAB 60b. Refer to the GIB® Intertenancy Manual.

3.5.5 System Components

3.5.5.1 System Components

System Components, including, but not limited to:
- GIB Barrierline®;
- 16mm GIB Fyreline®;
- GIB® H-Stud;
- GIB® Rondo® 140 Perimeter Channel;
- GIB® Wall Clip;
- GIB® Wall Strap;
- Timber framing;
- Wall cavity insulation;
- Fire stopping consisting of treated timber battens or mineral wool cavity insulation;
- GIB® plasterboard wall linings;
- Fasteners.

Refer to pages 10-11 of the GIB® Intertenancy Manual for further information.

3.5.6 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 GIB® Intertenancy Barrier Systems for Terrace Homes to the required layout and standard, and to ensure:
- the clear distance between the GIB Barrierline® central barrier and wall framing on both sides is between 25-40mm.
- the appropriate tolerances and clearances allow for correct installation of the central barrier, mineral wool cavity insulation; and
- any building services located within the wall cavities are correclty installed to maintain the integrity and performance of the system; and
- when installed and in a vertical orientation, GIB Barrierline® is not exposed to the elements for more than 12 weeks before the building is closed in; and
- when installed and in a vertical orientation, 16mm GIB Fyreline® is not exposed to the elements for more than 4 weeks before the building is closed in.

Refer to the GIB® Intertenancy Manual for further information.

3.5.7 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 of GIB® Intertenancy Barrier Systems for Terrace Homes shall be carried out by experienced and competent tradespersons, who are familiar with the specified materials and installation techniques, in accordance with the manufacturer's installation requirements, 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.

Carry out all necessary installation inspections in accordance with the GIB® Site Guide, and to fully comply with the manufacturer's warranty requirements as the works progress.

All cutting, jointing, fixing 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, free from damage and defects.

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

3.5.8 Delivery & Handling

GIB Barrierline® has a water and mould resistant core. Despite this it is important to remember that paper-faced gypsum plasterboard should only be handled when dry. Therefore GIB Barrierline® and GIB Fyreline® must be kept dry after delivery and before installation. All GIB Barrierline® and GIB Fyreline® pallets shall be delivered with waterproof covers fitted.

Once installed and in a vertical orientation, GIB Barrierline® plasterboard can be exposed to the elements for up to 12 weeks before the building is closed in.
Once installed and in a vertical orientation, 16mm GIB Fyreline® plasterboard can be exposed to the elements for up to 4 weeks before the building is closed in.

Store all GIB® plasterboard ceiling and wall linings and system components indoors, off the floor, on a flat, level surface in accordance with the manufacturer's requirements. Keep stored plasterboard linings and system 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 materials in accordance with the manufacturer's requirements and relevant Product Data Sheets, and in a manner that prevents damage.

Installers shall be familiar with and comply with the manufacturer's Material Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials. Carry plasterboard sheets on edge, and avoid damage to sheet edges, ends, and surfaces.

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

3.5.9 Preparation

Carry out all necessary inspections and preparatory work to the supporting elements in accordance with the GIB® Site Guide prior to installation.

Check that all preliminary and preparatory building works have been completed to specification and as shown on the drawings.

Supporting elements and substrates for plasterboard wall linings shall be at least to the requirements of AS/NZS 2589.

Supporting timber framing shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific design, and have a maximum moisture content 18% at the time of installation of plasterboard linings.

Supporting concrete structures shall comply with NZS 3109, and new concrete must have aged for a minimum of 28 days prior to installation.

Supporting steel structures shall comply with NZS 3404.

The building must be fully enclosed, weathertight and suitably dry before installation of internal GIB® plasterboard ceiling and wall linings commences.

Confirm the location and details of movement control joints, as indicated on the drawings, prior to installation.

The commencement of work on each section/area shall be deemed to indicate full acceptance by the installer that all preparatory works by other trades is complete.

3.6 GIB® Weatherline® Rigid Air Barrier Systems

3.6.1 Scope

Supply and install GIB Weatherline® Rigid Air Barrier Systems, 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 be in complete accordance with the latest GIB Weatherline® Rigid Air Barrier Systems Specification and Installation Manual (check www.gib.co.nz, or call 0800 100 442 for the latest edition), BRANZ Appraisal No.1048, other relevant product manufacturers' recommendations.

No substitutions are permitted for GIB Weatherline® Rigid Air Barrier Systems.

For the purpose of this specification, all associated GIB technical literature and publications, including the GIB Weatherline® Rigid Air Barrier Systems Specification and Installation Manual, installations instructions and drawings, and BRANZ Appraisal, are collectively referred to as the 'Technical Literature'.

GIB Weatherline® Rigid Air Barrier Systems are intended for use as a rigid wall underlay fixed over timber-framed walls to support the wind pressure and to act as a secondary barrier to wind-driven rain. GIB Weatherline® Rigid Air Barrier Systems are suitable for use under wall cladding as an alternative to the rigid wall underlay specified in NZBC E2/AS1, Table 23 on timber-framed buildings, except that claddings must NOT be installed directly over (direct fixed) the GIB Weatherline® Rigid Air Barrier.

Where GIB® plasterboard internal linings are used, this section should be read in conjunction with the GIB® Plasterboard Linings specification and relevant GIB® Systems specifications as they are interrelated..

The following is a list and/or general description of the extent of the GIB Weatherline® Rigid Air Barrier Systems works, which are more specifically defined in the contract documents, required for the completion of the contract works:

3.6.2 Requirements

3.6.2.1 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.

3.6.2.2 Warranty

GIB® Product & System Warranty - according to the warranty terms and conditions.
- 15 Years Warranty - for GIB Weatherline® Rigid Air Barrier Systems installed where the cladding durability requirement is 15 years.
- 50 Years Warranty - for GIB Weatherline® Rigid Air Barrier Systems installed when used for bracing or fire-rated systems where the cladding durability requirement is not less than 50 years.
- 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.

3.6.2.3 Substitutions

GIB Weatherline® Rigid Air Barrier Systems shall be as specified herein and on the design drawings. The substitution of GIB Weatherline® Rigid Air Barrier Systems for an alternative brand, system, product or material is not permitted under any circumstances.

The substitution of a specified GIB Weatherline® system or component for an alternative GIB Weatherline® system or component 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 an alternative GIB Weatherline® system or component to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Contractor.

3.6.2.4 Inspection & Reporting

BCA inspections shall take place at each of the stages as scheduled in the Building Consent. Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection.

Carry out all necessary pre-installation and installation inspections for each area of the works.

Complete all necessary Pre-Installation Checklists prior to installation, and all necessary Installation Checklists.

Complete all necessary Final Checklists and Installation Sign-Off Certificates before handing over completed work.

3.6.2.5 Quality Assurance

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

3.6.2.6 Penetrations for Services

Pipes and ducts penetrating GIB Weatherline® Rigid Air Barrier Systems must be sealed with Pro Clima Kaflex/Roflex seals prior to installation of wall claddings. Holes up to 100 x 100mm positioned no closer than 200mm to the edge of a sheet or to another hole may be allowed for services in GIB Weatherline® Rigid Air Barrier Systems without affecting the bracing rating of the panel. Where a penetration occurs in a Fire Resistance Rated wall, the penetration is subject to specific fire engineering design - refer to design drawings.

3.6.2.7 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 Weatherline® Rigid Air Barrier Systems materials and work shall be repaired and/or replaced to the satisfaction of the Contract Administrator without delay and at no additional cost to the Principal.

3.6.3 Performance

3.6.3.1 Bracing Performance

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® 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.

3.6.3.2 Fire Rating Performance

Fire Rating Performance - GIB® Fire Rated Systems. To the areas noted as 'Fire-Rated' on the drawings, additionally comply with all relevant aspects of the GIB® Fire Rated Systems (2018) publication according to the specified fire resistance rating (FRR), BRANZ Appraisal No.289 (2018), and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Fire Rated Systems.

3.6.4 GIB Weatherline® Bracing Systems

3.6.4.1 W-H - with 13mm GIB Weatherline®

GIB Weatherline® Rigid Air Barrier Structural Bracing System - W-H.

System Details:
- External Sheathing: 13mm GIB Weatherline® sheet - refer to Components & Accessories clause.
- Sheathing Fixing: Refer to GIB EzyBrace® Systems Specification & Installation Manual.
- Internal Lining: None.

- Minimum Bracing Element Length: 0.4m or 1.2m - refer to the design drawings.
- NZS 3604 Bracing Rating: 0.4m element - Wind 105 BUs/m, Earthquake 100 BUs/m. 1.2m element - Wind 125 BUs/m, Earthquake 105 BUs/m.
- Other Requirements: Panel hold-down fixings - refer to the GIB EzyBrace® Systems Specification and Installation Manual and the design drawings.

Assembled and installed in accordance with the Technical Literature to the locations indicated on the design drawings.

Bracing Element Length:
Installed Location:

3.6.5 GIB Weatherline® Fire Rated Systems

3.6.5.1 GWTL-60a (60/60/60) - Two-Way FRR External Wall

GIB Weatherline® Rigid Air Barrier Fire Rated System - GWTL-60a. A two-way fire rated, load-bearing/non-load-bearing timber-framed external wall system for use with a drained and vented cavity cladding system incorporating James Hardie CLD structural cavity battens.

System Details:
- Performance: FRR 60/60/60.
- Timber Wall Framing: Complying with the NZ Building Code; 90mm max stud size; studs at max 600mm crs; nogs/dwangs at max 1350mm crs.
- External Sheathing: One layer of 13mm GIB Weatherline® - refer to Components & Accessories clause.
- Sheathing Fixing: Fix sheets at 300mm crs around sheet perimeter (12mm from bound sheet edge, 18mm from sheet end/cut edges) and at 300mm to all intermediate studs.
- Internal Lining: One layer of 13mm GIB Fyreline®.
- Lining Fixing: Fix sheets at 300mm crs around sheet perimeter (12mm from bound sheet edge, 18mm from sheet end/cut edges) and at 300mm to all intermediate studs.
- Insulation: Pink® Batts® R2.2 (90mm) glass wool insulation.
- Flashing Tape: All GIB Weatherline® sheet joints and screw fixings must be taped with GIB Weatherline® Flashing Tape apart from mid-sheet vertical screw fixings covered with a structural cavity batten.

Assembled and installed in accordance with the Technical Literature to the locations indicated on the design drawings.

Installed Location:

3.6.6 Components & Accessories

3.6.6.1 Exterior Sheathing

Exterior Sheathing - GIB Weatherline® Sheet. An exterior-grade, glass-fibre fleece wrapped modified-gypsum core sheet material used as a rigid wall underlay and temporary weather protecting sheathing.

Sheet Details:
- Thickness: 10mm and 13mm thick sheets - *to the sheet thickness specified*.
- Width: 1200mm wide, square edge.
- Length: 2700mm and 3000mm standard sheet lengths (custom lengths to order).
- Colour: Purple.
- Mass (approx.): 9.0kg/m² for 10mm, 11.5kg/m² for 13mm (at equilibrium moisture content).

Installation:
- Sheets must be installed purple branded face outwards, vertically with longitudinal sheet edges touch fitted, and must only be joined on framing.
- Sheets may be installed horizontally across the gable end of a building.
- All sheet edges (vertical, horizontal, raked) must be fully supported by wall framing.
- At the base of the wall, the sheathing must extend below the ground floor bottom plate a minimum of 15mm, up to a maximum of 40mm.
- Sheets must not bridge an inter-storey floor level - a horizontal movement control joint must be provided at the intermediate floor level.
- Horizontal sheet joints at inter-storey floor levels must be gapped 10mm apart and support over floor framing.
- Horizontal sheet joints occurring between floor levels must be gapped 5mm apart and supported over horizontal framing.

Installed as a component of GIB Weatherline® Rigid Air Barrier Systems in accordance with the Technical Literature.

Sheet Thickness:

3.6.7 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, the installation of GIB Weatherline® Rigid Air Barrier Systems to the required layout, details and tolerances.

3.6.8 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 of GIB Weatherline® Rigid Air Barrier Systems shall be carried out by experienced and competent tradespersons, who are familiar with the specified materials and installation techniques, in accordance with the manufacturer's installation requirements, and to fully comply with all warranty requirements.

Carry out all necessary installation inspections in accordance with the manufacturer's Technical Literature.

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

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

3.6.9 Delivery & Handling

Take delivery of materials and accessories undamaged and in good condition. Reject any item found to be defective or damaged and contact the manufacturer/supplier for replacement.

Store GIB Weatherline® sheet stacked flat, off the ground and supported on a level platform in accordance with the manufacturer's requirements. Keep stored sheets under cover, dry, out of direct sunlight, and protected from damage, moisture and contamination until required for installation.

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 materials in accordance with the manufacturer's requirements and relevant Product Data Sheets, and in a manner that prevents damage and does not reduce its performance.

Installers shall be familiar with and comply with the manufacturer's Material Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials. Carry GIB Weatherline® sheets on edge, and avoid damage to sheet edges, ends and surfaces.

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.

3.6.10 Preparation

3.6.10.1 General

Prior to installation, carry out all necessary inspections of the supporting timber wall framing 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.

Timber Wall Framing:
- Timber wall framing shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific-design, and have a maximum moisture content 20% at the time of GIB Weatherline® Rigid Air Barrier Systems installation.
- Studs must be spaced at maximum 400mm or 600mm centres depending on the wind zone and

fixing option used - as per the Technical Literature.
- Nog/dwang lines must be spaced at maximum 800mm centres vertically.
- The wall framing must be structurally sound and dimensionally stable and in the correct alignment, true to line and plumb.
- GIB Weatherline® sheets must be joined on wall framing with a finished width no less than 45mm.

Confirm the location and details of movement control joints, as indicated on the design drawings, prior to installation.

3.6.10.2 Framing Check

Framing - check all aspects of preparatory works, including but not limited to:
- Check that the framing is straight and true to line, and is plumb/level and correctly aligned.
- Check that vertical and horizontal framing members are to the spacings shown on the design drawings.
- Check that the framing has no projections due to structural and bracing bracketry, etc. Ensure that framing brackets, plates, braces, hold-downs, etc, are correctly installed.

3.6.11 Installation

3.6.11.1 Installation

Install GIB Weatherline® Rigid Air Barrier Systems in accordance with the Technical Literature and as indicated on the design drawings.

Install GIB Weatherline® sheets vertically with longitudinal sheet edges touch fitted and with all sheet edges supported by framing.
Sheets joined between floor levels must be installed with a minimum 5mm gap between the sheet ends and must be supported over horizontal framing.
Sheets joined at inter-storey floor levels must have a minimum 10mm gap between the sheet ends to allow for shrinkage of the framing.

Fix GIB Weatherline® sheets to timber wall framing using only GIB® Grabber® 41mm x 6g Ceramic Coated High Thread Screws as per the GIB Weatherline Rigid Air Barrier System's specific fixing placement according to the Technical Literature.

All vertical and horizontal sheet joints and edges, internal and external corner junctions and exposed screw fixings (except where covered by a structural cavity batten) must be covered with GIB Weatherline® Flashing Tape - installed as soon as practical to clean dry sheathing to avoid any wetting. Window and door and other openings in GIB Weatherline® sheathing must be covered with GIB Weatherline® Sill Tape and Flashing Tape in accordance with the manufacturer's instructions.

Pipes and conduits penetrating GIB Weatherline® sheathing must be sealed with Pro Clima Kaflex/Roflex membrane seals, used and installed in accordance with the manufacturer's instructions.

Structural cavity battens, where specified and used as a component of a GIB Weatherline® Rigid Air Barrier System, must be fixed to timber wall framing in accordance with the Technical Literature.

3.6.12 Completion

Check GIB Weatherline® Rigid Air Barrier Systems have been correctly installed with all sheet joints and edges and sheet fixings (where required) covered with GIB Weatherline® Flashing Tape, and joinery openings covered with GIB Weatherseal Sill Tape and Flashing Tape, all in accordance with the Technical Literature and as indicated on the design drawings.

Check the installation for damage and defects. Carry out any necessary repairs in accordance with the manufacturer's requirements to the required standard. Replace sections 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 as per the Technical Literature.

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 associated warranties.

3.7 GIB® Fire Rated Systems

3.7.1 Scope

Supply and install the specified GIB® Fire Rated Systems to the locations identified on the drawings, incorporating GIB® plasterboards and all system components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with the GIB® Fire Rated Systems Specification and Installation Manual and the current GIB® Site Guide (check www.gib.co.nz, or call 0800 100 442 for the latest editions), BRANZ Appraisal No.289, other relevant product manufacturers' recommendations, and as shown on the drawings.

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

This specification section must be read in conjunction with the GIB® Plasterboard Linings specification and relevant GIB® Systems specifications, and other specification sections, as they are interrelated.

For the purpose of this specification, the GIB® Fire Rated Systems Specification and Installation Manual (2012) is referred to as the GIB® Fire Rated Systems Manual..

3.7.2 Requirements

3.7.2.1 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.

3.7.2.2 Warranty

GIB® Product & System Warranty:

- 10 Years Warranty - for all GIB® Products and Systems installed, according to warranty conditions.
- 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.

3.7.2.3 AWCI Membership

Installation of GIB® Fire Rated 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.

3.7.2.4 Quality Assurance

Ensure that the installation and finishing of GIB® Fire Rated 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.

3.7.2.5 Inspection & Acceptance of GIB® Fire Rated Systems

Carry out all necessary pre-installation, installation and finishing inspections necessary for GIB® Fire Rated Systems for each area of work in accordance with the requirements of the GIB® Fire Rated Systems Manual, GIB® Site Guide, and BRANZ Appraisal No.289.

Complete the GIB® Site Guide Pre-Installation Checklist prior to installing GIB® plasterboard linings.

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

3.7.2.6 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® Fire Rated System materials and/or work shall be repaired and/or replaced to the satisfaction of the Architect/Designer, without delay and at no additional cost to the Principal.

3.7.2.7 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.

3.7.2.8 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® Fire Rated Systems 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® Fire Rated Systems Manual and GIB® Site Guide: 2.3 - Board Substitution Options. 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.

3.7.3 Performance

3.7.3.1 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.

3.7.3.2 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® 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.

3.7.3.3 Sound Insulation Performance

Sound Insulation Performance - GIB® Noise Control Systems. To the areas noted as 'Sound-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Noise Control Systems (2017) publication according to the specified sound transmission class (STC) rating, BRANZ Appraisal No.394 (2016), and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Noise Control Systems.

3.7.3.4 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 (2007) publication, BRANZ Appraisal No.427 (2007), and other relevant product manufacturers' recommendations. Refer to separate specification GIB Aqualine® Wet Area Systems.

3.7.4 Wall Systems - 2-Way FRR

3.7.4.1 GBTL 60 (timber frame, load-bearing, 60/60/60)

GIB® Fire Rated Wall System - GBTL 60. A two-way fire rated, load-bearing timber frame wall system incorporating one layer of 13mm GIB Fyreline® each side. Refer to the GIB® Fire Rated Systems literature.

Installed Location:

3.7.5 Wall Systems - 1-Way FRR

3.7.5.1 GBUW 30a (timber or steel frame, load-bearing, 30/30/30)

GIB® Fire Rated Wall System - GBUW 30a. A one-way fire rated, load-bearing timber or light steel frame wall system incorporating one layer of 16mm GIB Fyreline® on one side. Refer to the GIB® Fire Rated Systems literature.

Installed Location:

3.7.6 Ceiling Systems

3.7.6.1 GBUC 30 (timber or steel frame, load-bearing, 30/30/30)

GIB® Fire Rated Ceiling System - GBUC 30. A fire rated, load-bearing ceiling system incorporating timber or steel roof or floor/ceiling framing and one layer of 16mm GIB Fyreline® as ceiling lining. Refer to the GIB® Fire Rated Systems literature.

Installed Location:

3.7.6.2 GBUC 60 (timber or steel frame, load-bearing, 60/60/60

GIB® Fire Rated Ceiling System - GBUC 60. A fire rated, load-bearing ceiling system incorporating timber or steel roof or floor/ceiling framing and two layers of 13mm GIB Fyreline® as ceiling lining. Refer to the GIB® Fire Rated Systems literature.

Installed Location:

3.7.7 Components & Accessories

3.7.7.1 Components & Accessories

GIB® Fire Rated Systems components and accessories, including, but not limited to:
- GIB® Plasterboard Linings;
- GIB® Plasterboard Fasteners;
- GIB® Metal Trims & Paper Faced Trims;
- GIB® Plasterboard Control Joints;
- GIB® Joint and Finishing Compounds;
- GIB Fire Soundseal® Acoustic Sealant;
- Fire Resistant Sealant.

Refer to the GIB® Fire Rated Systems literature and the GIB® Site Guide for further information.

3.7.8 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.
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® Fire Rated Systems to the required set-out and standard, and to ensure:
- appropriate tolerances and clearances allow for adjacent internal linings, fixtures, fittings, services, etc; and
- GIB® plasterboard linings correctly allow for proper door and window installation; and
- penetrations for building services are correctly handled to maintain sheet integrity and system performance.

3.7.9 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.

Installation of GIB® Fire Rated Systems shall be carried out by experienced and competent tradespersons, who are familiar with the specified materials and installation techniques, in accordance with the manufacturer's installation requirements, 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.

Carry out all necessary installation inspections in accordance with the GIB® Site Guide, and to fully comply with the manufacturer's warranty requirements as the works progress.

All cutting, jointing, fixing 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, free from damage and defects.

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

On Completion:
- Check that GIB® Fire Rated Systems have been correctly installed and finished in accordance with the requirements of the GIB® Fire Rated Systems Manual and GIB® Site Guide, to the correct set-out, dimensions and details shown on the drawings.
- 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 have 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.

3.7.10 Delivery & Handling

Store all GIB® Fire Rated Systems plasterboard linings and system components indoors, off the floor, on a flat, level surface in accordance with the manufacturer's requirements. Keep stored plasterboard linings and system 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 materials in accordance with the manufacturer's requirements and relevant Product Data Sheets, and in a manner that prevents damage.

Installers shall be familiar with and comply with the manufacturer's Material Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials. Carry plasterboard sheets on edge, and avoid damage to sheet edges, ends, and surfaces.

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

3.7.11 Preparation

3.7.11.1 General

All framing shall be complete and ready for GIB® Fire Rated Systems and associated GIB® plasterboard linings installation.

Timber framing shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific design, and have a maximum moisture content 18% at the time of plasterboard lining installation.

Light structural steel framing shall comply with the requirements of AS/NZS 4600 or the NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria. All light structural steel framing members shall satisfy the requirements of AS/NZS 1170. Comply with the steel framing fabricator's specifications and requirements for plasterboard installation.

Steel stud partitioning shall comply with AS 1397 and as specified and shown on the drawings. Comply with the manufacturer's specifications and requirements for plasterboard installation.

Concrete substrates shall comply with the CCANZ CP 01:2011 or with NZS 3109. New concrete must have aged for a minimum of 28 days. Ensure that concrete surfaces are within the tolerances specified.

Concrete masonry structures shall comply with NZS 4229, or with NZS 4230 and AS/NZS 1170 for specific design.

Supporting steel structures shall comply with NZS 3404.

Carry out all necessary moisture readings. Do not commence installation until the moisture readings are below the required level.

Carry out all necessary substrate inspections and preparatory work in accordance with the manufacturer's recommendations and the GIB® Site Guide prior to installation. Complete and sign the GIB® Site Guide Pre-Installation Checklist.

Check that the building envelope has been finished at all penetrations including doors, windows, services, etc., and the building is weathertight.

Check junctions to all other building elements and ensure that all necessary works have been completed, including cavity insulation.

Check that all fixtures, fittings and built-in items are correctly installed, and that all framing and substrate edges are completed as detailed.

Confirm the location and details of movement control joints, as indicated on the drawings, prior to installation.

Ensure all pre-wiring and service piping is installed and complete.

Check that any required cavity insulation has been installed correctly and its bulk thickness does not exceed the framing thickness.

Remove all debris and rubbish from framing voids prior to installing linings.

The commencement of work on each section/area shall be deemed to indicate full acceptance by the installer that all preparatory works by other trades is complete.

3.7.11.2 Framing Check

Framing - check all aspects of preparatory works, including but not limited to:
- Check that the framing is straight and true to line, and is plumb/level and correctly aligned.
- Check that the framing is within the required deviation tolerances defined in AS/NZS 2589 according the specified Finish Level.
- Check that vertical and horizontal framing members are at the spacings shown on the drawings, and that any required battens or furring channels are installed to the required layout.
- Check that the framing has no projections due to structural and bracing bracketry, etc. Ensure that framing brackets, plates, braces, hold-downs, etc., are correctly installed.

3.7.11.3 Work above Ceilings

Check that all building work, mechanical, plumbing, electrical, fire protection and other services installed above the ceiling are completed and independently supported by the building structure - not by the ceiling system.

3.8 GIB® EzyBrace® Systems

3.8.1 Scope

Supply and install the specified GIB EzyBrace® Systems to the locations identified on the drawings, incorporating GIB® plasterboards and all system components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with the GIB EzyBrace® Systems publication, GIB EzyBrace® Bracing Software and the current GIB® Site Guide (check www.gib.co.nz, or call 0800 100 442 for the latest editions), BRANZ Appraisal No.928, other relevant product manufacturers' recommendations, and as shown on the drawings.

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

This specification section must be read in conjunction with the GIB® Plasterboard Linings specification and relevant GIB® Systems specifications, and other specification sections, as they are interrelated..

3.8.2 Requirements

3.8.2.1 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.

3.8.2.2 Warranty

GIB® Product & System Warranty:

- 10 Years Warranty - for all GIB® Products and Systems installed, according to warranty conditions.
- 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.

3.8.2.3 Quality Assurance

Ensure that the installation and finishing of GIB EzyBrace® 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.

3.8.2.4 Inspection & Acceptance of GIB EzyBrace® Systems

Carry out all necessary pre-installation, installation and finishing inspections necessary for GIB EzyBrace® Systems for each area of work in accordance with the requirements of the GIB EzyBrace® Systems Manual, GIB® Site Guide, and BRANZ Appraisal No.928.

Complete the GIB® Site Guide Pre-Installation Checklist prior to installing GIB® plasterboard linings.

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

3.8.2.5 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 EzyBrace® System materials and/or work shall be repaired and/or replaced to the satisfaction of the Architect/Designer, without delay and at no additional cost to the Principal.

3.8.2.6 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.

3.8.2.7 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 EzyBrace® Systems 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 EzyBrace® Systems Manual and GIB® Site Guide: 2.3 - Board Substitution Options. 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.

3.8.3 Performance

3.8.3.1 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.

GIB EzyBrace® Systems must NOT be used in showers or behind baths. GIB EzyBrace® Systems may be used in watersplash areas provided they are protected with an impervious finish in accordance with the requirements of NZBC E3/AS1, and the GIB Aqualine® Wet Area Systems publication.

3.8.3.2 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.

3.8.3.3 Bracing Performance - Steel Framing

Bracing Performance - GIB EzyBrace® Systems - Steel Framing. To the steel framed elements noted as 'Bracing' on the drawings, additionally comply with all relevant aspects of the latest GIB Ezybrace® For Light Steel Frame Systems publication and GIB Ezybrace® Bracing Software according to the specified bracing unit rating, and other relevant product manufacturers' recommendations. Refer to separate specification GIB EzyBrace® Systems.

3.8.3.4 Fire Rating Performance

Fire Rating Performance - GIB® Fire Rated Systems. To the areas noted as 'Fire-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Fire Rated Systems (2018) publication according to the specified fire resistance rating (FRR), BRANZ Appraisal No.289, and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Fire Rated Systems.

3.8.3.5 Sound Insulation Performance

Sound Insulation Performance - GIB® Noise Control Systems. To the areas noted as 'Sound-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Noise Control Systems (2017) publication according to the specified sound transmission class (STC) rating, BRANZ Appraisal No.394, and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Noise Control Systems.

3.8.3.6 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 (2007) publication, BRANZ Appraisal No.427, and other relevant product manufacturers' recommendations. GIB EzyBrace® Systems must not be located in shower cubicles or behind baths or the like. Refer to separate specification GIB Aqualine® Wet Area Systems.

3.8.4 GIB EzyBrace® Systems - Timber Frame

3.8.4.1 GS1-N

GIB EzyBrace® System - GS1-N. A timber frame, external or internal wall bracing system incorporating one layer of any 10mm or 13mm GIB® Standard Plasterboard on one side. Refer to the GIB EzyBrace® Systems literature.

Installed Location:

3.8.4.2 GS2-N

GIB EzyBrace® System - GS2-N. A timber frame, internal wall bracing system incorporating one layer of 10mm or 13mm GIB® Standard Plasterboard each side. Refer to the GIB EzyBrace® Systems literature.

Installed Location:

3.8.4.3 BL1-H

GIB EzyBrace® System - BL1-H. A timber frame, external or internal wall bracing system incorporating one layer of 10mm or 13mm GIB Braceline® on one side with panel hold downs. Refer to the GIB EzyBrace® Systems literature.

Installed Location:

3.8.4.4 BLG-H

GIB EzyBrace® System - BLG-H. A timber frame, internal wall bracing system incorporating one layer of GIB Braceline® on one side, and one layer of any 10mm or 13mm GIB® Plasterboard on the other, and panel hold-down fixings with panel hold downs. Refer to the GIB EzyBrace® Systems literature.

Installed Location:

3.8.5 Ceiling Diaphragms

3.8.5.1 Limitations

GIB® plasterboard ceiling diaphragms must be constructed in accordance with the requirements and within the limitations of the GIB EzyBrace® Systems Manual.

Openings are permitted within the middle third of the diaphragm's length and width. Opening dimensions (length or width) shall not exceed a third of the diaphragm width. Fix GIB® Plasterboard ceiling linings to opening trimmers at 150mm centres. Larger openings, or openings in other locations, require specific engineering design.

3.8.6 Components & Accessories

3.8.6.1 Components & Accessories

GIB EzyBrace® Systems components and accessories, including, but not limited to:
- GIB® Plasterboard Linings;
- GIB® Plasterboard Fasteners;
- Plywood Sheathing;
- GIB® HandiBrac® Panel Hold-down Bracket with Bowmac® Blue Head Screw Bolt;
- Galvanised Steel Strap Plate Connectors;
- Ceiling Diaphragm Ceiling Battens;
- GIB® Adhesives - GIBFix® One and/or GIBFix® All-Bond;
- GIB® Metal Trims & Paper Faced Trims;
- GIB® Plasterboard Control Joints;

- GIB® Joint and Finishing Compounds;
- GIB Soundseal® Acoustic Sealant;
- Fire Resistant Sealant.

Refer to the GIB EzyBrace® Systems literature and the GIB® Site Guide for further information.

3.8.7 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 EzyBrace® Systems to the required set-out and standard, and to ensure:
- appropriate tolerances and clearances allow for adjacent internal linings, fixtures, fittings, services, etc; and
- GIB® plasterboard linings correctly allow for proper door and window installation; and
- penetrations for building services are correctly handled to maintain sheet integrity and system performance.

3.8.8 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 of GIB EzyBrace® Systems shall be carried out by experienced and competent tradespersons, who are familiar with the specified materials and installation techniques, in accordance with the manufacturer's installation requirements, 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.

Carry out all necessary installation inspections in accordance with the GIB EzyBrace® Systems Manual and the GIB® Site Guide, and to fully comply with the manufacturer's warranty requirements as the works progress.

All cutting, jointing, fixing 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, free from damage and defects.

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

On Completion:
- Check that GIB EzyBrace® Systems have been correctly installed and finished in accordance with the requirements of the GIB EzyBrace® Systems Manual and GIB® Site Guide, to the correct set-out, dimensions and details shown on the drawings.
- 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 have 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 sanding 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.

3.8.9 Delivery & Handling

Store all GIB EzyBrace® Systems plasterboard linings and system components indoors, off the floor, on a flat, level surface in accordance with the manufacturer's requirements. Keep stored plasterboard linings and system 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. Cracked or damaged GIB Aqualine® sheets must never be used.

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 materials in accordance with the manufacturer's requirements and relevant Product Data Sheets, and in a manner that prevents damage.

Installers shall be familiar with and comply with the manufacturer's Material Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials. Carry plasterboard sheets on edge, and avoid damage to sheet edges, ends, and surfaces.

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

3.8.10 Preparation

3.8.10.1 General

All framing shall be complete and ready for GIB® Ezybrace Systems and associated GIB® plasterboard linings installation.

Timber framing shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific design, and have a maximum moisture content 18% at the time of plasterboard lining installation.

Light structural steel framing shall comply with the requirements of AS/NZS 4600 or the NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria. All light structural steel framing members shall satisfy the requirements of AS/NZS 1170. Comply with the steel framing fabricator's specifications and requirements for plasterboard installation.

Steel stud partitioning shall comply with AS 1397 and as specified and shown on the drawings. Comply with the manufacturer's specifications and requirements for plasterboard installation.

Concrete substrates shall comply with the CCANZ CP 01:2011 or with NZS 3109. New concrete must have aged for a minimum of 28 days. Ensure that concrete surfaces are within the tolerances specified.

Concrete masonry structures shall comply with NZS 4229, or with NZS 4230 and AS/NZS 1170 for specific design.

Carry out all necessary moisture readings. Do not commence installation until the moisture readings are below the required level.

Carry out all necessary substrate inspections and preparatory work in accordance with the manufacturer's recommendations and the GIB® Site Guide prior to installation. Complete and sign the GIB® Site Guide Pre-Installation Checklist.

Check that the building envelope has been finished at all penetrations including doors, windows, services, etc., and the building is weathertight.

Check junctions to all other building elements and ensure that all necessary works have been completed, including cavity insulation.

Check that all fixtures, fittings and built-in items are correctly installed, and that all framing and substrate edges are completed as detailed.

Confirm the location and details of movement control joints, as indicated on the drawings, prior to installation.

Ensure all pre-wiring and service piping is installed and complete.

Check that any required cavity insulation has been installed correctly and its bulk thickness does not exceed the framing thickness.

Remove all debris and rubbish from framing voids prior to installing linings.

The commencement of work on each section/area shall be deemed to indicate full acceptance by the installer that all preparatory works by other trades is complete.

3.8.10.2 Framing Check

Framing - check all aspects of preparatory works, including but not limited to:

- Check that the framing is straight and true to line, and is plumb/level and correctly aligned.

- Check that the framing is within the required deviation tolerances defined in AS/NZS 2589 according the specified Finish Level.
- Check that vertical and horizontal framing members are at the spacings shown on the drawings, and that any required battens or furring channels are installed to the required layout.
- Check that the framing has no projections due to structural and bracing bracketry, etc. Ensure that framing brackets, plates, braces, hold-downs, etc., are correctly installed.

3.9 GIB® Wet Area Systems

3.9.1 Scope

Supply and install the specified GIB Aqualine® Wet Area Systems to the locations identified on the drawings, incorporating GIB® plasterboards and all system components and accessories required for proper installation and performance. All aspects of this work shall be in complete accordance with the GIB Aqualine® Wet Area Systems publication and the current GIB® Site Guide (check www.gib.co.nz, or call 0800 100 442 for the latest editions), BRANZ Appraisal No.427, other relevant product manufacturers' recommendations, and as shown on the drawings.

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

This specification section must be read in conjunction with the GIB® Plasterboard Linings specification and relevant GIB® Systems specifications, and other specification sections, as they are interrelated.

For the purpose of this specification, the GIB Aqualine® Wet Area Systems publication is referred to as the GIB® Wet Area Systems Manual..

3.9.2 Requirements

3.9.2.1 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.

3.9.2.2 Warranty

GIB® Product & System Warranty:
- 10 Years Warranty - for all GIB® Products and Systems installed, according to warranty conditions.
- 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.

3.9.2.3 Quality Assurance

Ensure that the installation and finishing of GIB Aqualine® Wet Area 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.

3.9.2.4 Inspection & Acceptance of GIB® Wet Area Systems

Carry out all necessary pre-installation, installation and finishing inspections necessary for GIB Aqualine® Wet Area Systems for each area of work in accordance with the requirements of the GIB® Wet Area Systems Manual, GIB® Site Guide, and BRANZ Appraisal No.427.

Complete the GIB® Wet Area Systems Manual and GIB® Site Guide Pre-Installation Checklists prior to installing GIB® plasterboard linings.

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

3.9.2.5 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 Aqualine® Wet Area System materials and/or work shall be repaired and/or replaced to the satisfaction of the Architect/Designer, without delay and at no additional cost to the Principal.

3.9.2.6 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.

3.9.2.7 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 Aqualine® Wet Area Systems 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 Aqualine® Wet Area Systems Manual and GIB® Site Guide: 2.3 - Board Substitution Options. 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.

3.9.3 Performance

3.9.3.1 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.

In addition to the limitations above, GIB Aqualine® plasterboard must NOT be:
- used for bracing purposes in shower cubicles or above baths; or
- applied directly to solid plaster (gypsum or cement), wood based sheet linings or similar materials, masonry or concrete; or
- installed over a vapour barrier or a wall acting as a vapour barrier.

3.9.3.2 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 (2016), and other relevant product manufacturers' recommendations. Refer to separate specification GIB EzyBrace® Systems.

3.9.3.3 Bracing Performance - Steel Framing

Bracing Performance - GIB EzyBrace® Systems - Steel Framing. To the steel framed elements noted as 'Bracing' on the drawings, additionally comply with all relevant aspects of the latest GIB Ezybrace® For Light Steel Frame Systems publication and GIB Ezybrace® Bracing Software according to the specified bracing unit rating, and other relevant product manufacturers' recommendations. Refer to separate specification GIB EzyBrace® Systems.

3.9.3.4 Fire Rating Performance

Fire Rating Performance - GIB® Fire Rated Systems. To the areas noted as 'Fire-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Fire Rated Systems (2018) publication according to the specified fire resistance rating (FRR), BRANZ Appraisal No.289 (2018), and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Fire Rated Systems.

3.9.3.5 Sound Insulation Performance

Sound Insulation Performance - GIB® Noise Control Systems. To the areas noted as 'Sound-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Noise Control Systems (2017) publication according to the specified sound transmission class (STC) rating, BRANZ Appraisal No.394, and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Noise Control Systems.

3.9.4 GIB Aqualine® Non-Tiled Wall Systems

3.9.4.1 Non-Tiled Walls - Timber Frame

GIB Aqualine® Wet Area Systems - Non-Tiled Walls - Timber Framing. A timber frame, wet area lining system for non-tiled walls incorporating one layer of 10mm or 13mm GIB Aqualine® on the wet area side. Refer to the GIB® Aqualine® Systems literature.

3.9.5 GIB Aqualine® Tiled Wall Systems

3.9.5.1 Tiled Walls (tile weight - max. 26kg/m²) - Timber Frame

GIB Aqualine® Wet Area Systems - Tiled Walls - Timber Frame. A timber frame, wet area lining system for tiled walls with a maximum tile weight of 26kg/m², incorporating one layer of 10mm GIB Aqualine® on the wet area side. Refer to the GIB® Wet Area Systems literature.

3.9.6 GIB Aqualine® Ceiling Systems

3.9.6.1 Metal Ceiling Battens

GIB Aqualine® Wet Area Systems - Ceilings - Metal Ceiling Battens. A wet area drywall ceiling lining system over metal ceiling battens incorporating one layer of 10mm or 13mm GIB Aqualine®. Refer to the GIB® Wet Area Systems literature.

3.9.7 Components & Accessories

3.9.7.1 Components & Accessories

GIB Aqualine® Wet Area Systems components and accessories, including, but not limited to:
- GIB® Plasterboard Linings;
- GIB® Plasterboard Fasteners;
- GIB® Adhesives - GIBFix® One and/or GIBFix® All-Bond;
- GIB® Rondo® NZ18 Perimeter Angle: shower corner reinforcing, 32 x 32 x 0.55mm thick galvanised steel angle.
- GIB® Metal Trims & Paper Faced Trims;
- GIB® Plasterboard Control Joints;
- GIB® Joint and Finishing Compounds;
- Wet Area Sealant.

Refer to the GIB® Wet Area Systems literature and the GIB® Site Guide for further information.

3.9.8 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.
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 Aqualine® Wet Area Systems to the required set-out and standard, and to ensure:
- appropriate tolerances and clearances allow for adjacent internal linings, fixtures, fittings, services, etc; and
- GIB® plasterboard linings correctly allow for proper door and window installation; and
- penetrations for building services are correctly handled to maintain sheet integrity and system performance.

3.9.9 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.

Installation of GIB Aqualine® Wet Area Systems shall be carried out by experienced and competent tradespersons, who are familiar with the specified materials and installation techniques, in accordance with the manufacturer's installation requirements, 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.

Carry out all necessary installation inspections in accordance with the GIB® Wet Area Systems Manual and the GIB® Site Guide, and to fully comply with the manufacturer's warranty requirements as the works progress.

All cutting, jointing, fixing 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, free from damage and defects.

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

On Completion:
- Check that GIB Aqualine® Systems have been correctly installed and finished in accordance with the requirements of the GIB® Wet Area Systems Manual and GIB® Site Guide, to the correct set-out, dimensions and details shown on the drawings.
- 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 have 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 sanding 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.

3.9.10 Delivery & Handling

Store all GIB Aqualine® Wet Area Systems plasterboard linings and system components indoors, off the floor, on a flat, level surface in accordance with the manufacturer's requirements. Keep stored plasterboard linings and system 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. Cracked or damaged GIB Aqualine® sheets must never be used.

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 materials in accordance with the manufacturer's requirements and relevant Product Data Sheets, and in a manner that prevents damage.

Installers shall be familiar with and comply with the manufacturer's Material Safety Data Sheet precautions for use, and use appropriate safety gear when handling materials. Carry plasterboard sheets on edge, and avoid damage to sheet edges, ends, and surfaces.

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

3.10 GIB® Plasterboard Linings

3.10.1 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. .

3.10.2 Requirements

3.10.2.1 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.

3.10.2.2 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.

3.10.2.3 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.

3.10.2.4 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.

3.10.2.5 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.

3.10.2.6 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.

3.10.2.7 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.

3.10.2.8 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.

3.10.3 Performance

3.10.3.1 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.

3.10.3.2 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.

3.10.3.3 Bracing Performance - Steel Framing

Bracing Performance - GIB EzyBrace® Systems - Steel Framing. To the steel framed elements noted as 'Bracing' on the drawings, additionally comply with all relevant aspects of the latest GIB Ezybrace® For Light Steel Frame Systems publication and GIB Ezybrace® Bracing Software according to the specified bracing unit rating, and other relevant product manufacturers' recommendations. Refer to separate specification GIB EzyBrace® Systems.

3.10.3.4 Fire Rating Performance

Fire Rating Performance - GIB® Fire Rated Systems. To the areas noted as 'Fire-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Fire Rated Systems

(2024) publication according to the specified fire resistance rating (FRR), BRANZ Appraisal No.289, and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Fire Rated Systems.

3.10.3.5 Sound Insulation Performance

Sound Insulation Performance - GIB® Noise Control Systems. To the areas noted as 'Sound-rated' on the drawings, additionally comply with all relevant aspects of the GIB® Noise Control Systems (2017) publication according to the specified sound transmission class (STC) rating, BRANZ Appraisal No.394, and other relevant product manufacturers' recommendations. Refer to separate specification GIB® Noise Control Systems.

3.10.3.6 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.

3.10.4 GIB® Plasterboard Linings

3.10.4.1 GIB® Standard Plasterboard, 10mm

GIB® Standard Plasterboard, 10mm. A 10mm thick standard plasterboard interior lining. Suitable for use in residential and commercial applications on walls. Manufactured to exceed the requirements of AS/NZS 2588. Refer to the GIB® Site Guide.

Installed Location:

3.10.4.2 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:

3.10.5 Components & Accessories

3.10.5.1 Metal Ceiling Battens

Metal Ceiling Battens - GIB® Rondo® Metal Batten Systems. Installed in accordance with the manufacturer's requirements to the layout and details shown on the approved drawings. Refer to the GIB® Site Guide, and to separate specification GIB® Rondo® Metal Batten Systems.

3.10.5.2 Plasterboard Fasteners

GIB® Plasterboard Fasteners. Fasteners for fixing GIB® Plasterboard Linings shall be selected and used according to best fixing practices and the GIB® Site Guide and relevant GIB® Systems literature. Fastener heads shall be set slightly below the plasterboard sheet surface without breaking the paper facing.

Screw Fixing to Timber Framing:
- GIB® Grabber® High Thread Drywall Screws: A coarse high-thread screw for fixing into timber with superior holding power and ease of penetration.
- GIB® Grabber® Self Tapping Drywall Screws: A fine self-tapping thread, needle point screw, suitable for fixing to timber and light gauge steel framing.
- GIB® Grabber® Dual Thread Drywall Screws: A dual coarse/fine threaded, needle point screw, as a component of the GIBFix® Framing System and for fixing to timber framing.

Nail Fixing to Timber Framing:
- GIB Nail: Passivated coated, annular grooved, bugle head drywall nails with chequer-keyed head.

Screw Fixing to Light Steel Framing:
- GIB® Grabber® Self Tapping Drywall Screws: A fine self-tapping thread needle point screw, suitable for fixing to light gauge (0.45-0.95mm) steel framing.
- GIB® Grabber® Dual Thread Drywall Screws: A dual coarse/fine threaded, needle point screw, suitable for fixing to light gauge (0.45-0.95mm) steel framing.

3.10.5.3 Adhesives

GIB® Adhesives. In addition to GIB® plasterboard fasteners, fix GIB® Plasterboard Linings using GIB® adhesives in accordance with the requirements of the GIB® Site Guide and GIB® System literature.

GIB® Adhesives:
- GIBFix® One: An acrylic based plasterboard adhesive with ultra low VOC, suitable for use on timber and metal substrates, including all treated timber. Minimum application temperature - 10°C.
- GIBFix® All-Bond: A solvent based plasterboard adhesive, suitable for use on timber and metal substrates, including all treated timber. Do not use on polystyrene surfaces.

3.10.5.4 Paper Faced Composite Trims

GIB® Paper Faced Composite Trims. Flexible, reinforced, cut-to-length, paper faced corner trims, suitable for use on internal and external corners with an angle between 90° and 270°. Paper faced composite trims shall be embedded in jointing compound - do not mechanically fasten paper faced trims. Installed in accordance with the requirements of the GIB® Site Guide and GIB® Systems literature.

GIB® Paper Faced Composite Trims:
- Flexible Composite Trim: GIB® LevelLine™. Available in 70mm roll width.
- High Impact Flexible Composite Trim: GIB® UltraFlex® No Coat. Available in 82mm and 112mm roll widths.

3.10.5.5 Joint & Finishing Compounds

GIB® Compounds. Use the most suitable GIB® Compounds to joint and finish GIB® Plasterboard Linings according to the plasterboard type, location, application, durability, and quality of finish required. GIB® Compounds shall be applied and finished in accordance with the manufacturer's requirements to the specified finish level, and used in conjunction with GIB® Paper Joint Tape and GIB® Plasterboard Trims.

GIB® Compounds:
- GIB TradeSet®: Setting type compound. Suitable for Tape Coat, 2nd Coat. Easy to scrape. 20/45/90/150 minute working/set times.
- GIB MaxSet®: Setting type compound. Suitable for Tape Coat, 2nd Coat. Scrape while 'green'. 90 minute working/set time.
- GIB Lite Blue®: Setting type compound. Suitable for 2nd Coat. Easy sanding. 90 minute working/set time.
- GIB Trade Finish® Heavy Weight: Air drying ready-mix type compound. Suitable for Finishing Coat. Moderate sanding.
- GIB Trade Finish® Multi: Air drying ready-mix type compound. Suitable for Tape Coat, 2nd Coat; Finishing Coat. Easy sanding.
- GIB Trade Finish® Lite: Air drying ready-mix type compound. Suitable for Finishing Coat. Very easy sanding.
- GIB Promix® Lite: Air drying ready-mix type compound. Suitable for Finishing Coat. Very easy sanding.
- GIB® U-Mix: Air drying powder-mix type compound. Suitable for Finishing Coat. Easy Sanding.
- GIB Plus 4®: Air drying ready-mix type compound. Suitable for Tape Coat, 2nd Coat, Finishing Coat. Very easy sanding.
- GIB Promix® All Purpose: Air drying ready-mix type compound. Suitable for Tape Coat, 2nd Coat, Finishing Coat. Moderate sanding.
- GIB-Cove® Bond: Setting type compound. Suitable for bonding GIB-Cove® cornice, back-blocking plasterboard linings, and direct-bonding plasterboard to concrete and masonry walls. Hard to scrape. 45/90 minute working/set times.
- GIB X-Block® Jointing Compound: Used in conjunction with GIB X-Block® plasterboard wall and ceiling linings in accordance with the GIB X-Block® Radiation Shielding publication.

3.10.5.6 Joint Tape

GIB® Paper Joint Tape. A 50mm wide, spark perforated paper joint tape used to strengthen joints between plasterboard sheets. Centre-creased for internal and external corner applications. Recommended for jointing GIB® plasterboard wall and ceiling linings in accordance with the GIB® Site Guide and GIB Systems literature.

3.10.5.7 Acoustic Sealant

GIB Fire Soundseal®. A water-based, low VOC, highly flexible, paintable, acoustic sealant for use in GIB® Noise Control Systems. Applied in accordance with the GIB® Site Guide and relevant GIB® Systems literature.

3.10.5.8 Fire-Resistant Sealant

Fire-Resistant Sealant. Used in accordance with the sealant manufacturer's requirements, and according to the GIB® Site Guide and GIB® System literature.

3.10.5.9 Wet Area Sealant

Wet Area Sealant. A mould resistant, flexible, neutral curing silicone sealant with strong adhesion, suitable for wet area applications and where there is high humidity, including bathrooms, toilets, showers, wash-down areas, kitchens, laundries.

Applied in accordance with the sealant manufacturer's instructions, as required by the GIB® Site Guide and GIB® System literature. Sealant joints shall be in accordance with the sealant manufacturer's joint design width-to-depth ratio.

Manufacturer & Brand:

3.10.6 Level of Finish

3.10.6.1 Level of Finish

To the areas noted as a specific Level of Finish (3-5) on the drawings, additionally comply with all relevant aspects of the GIB® Site Guide and AS/NZS 2589, complete with all system accessories, and other relevant product manufacturers' recommendations.

NOTE: Unless stated otherwise, Level 4 is the default Level of Finish.

3.10.6.2 Acceptance of Levels of Finish

Carry out all necessary inspections and assessments of completed plasterboard jointing and finishing prior to hand-over for subsequent decoration.

Do not apply surface sealers and decorative treatments until written agreement between the Contractor and Painter/Decorator is given confirming the specified Finish Levels have been achieved and the plasterboard linings are ready for subsequent sealing and decoration.

3.10.7 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.

3.10.8 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.

3.10.9 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.

3.10.10 Preparation

3.10.10.1 General

All framing and substrates shall be complete and ready for GIB® Plasterboard Lining installation.

Timber framing shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific design, and have a maximum moisture content 18% at the time of plasterboard lining installation.

Light structural steel framing shall comply with the requirements of AS/NZS 4600 or the NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria. All light structural steel framing members shall satisfy the requirements of AS/NZS 1170. Comply with the steel framing fabricator's specifications and requirements for plasterboard installation.

Steel stud partitioning shall comply with AS 1397 and as specified and shown on the drawings. Comply with the manufacturer's specifications and requirements for plasterboard installation.

Concrete substrates shall comply with the CCANZ CP 01:2011 or with NZS 3109. New concrete must have aged for a minimum of 28 days. Ensure that concrete surfaces are within the tolerances specified. For of direct bonded plasterboard linings, concrete substrates must below 75% relative humidity prior to installation.

Concrete masonry substrates shall comply with NZS 4229, or with NZS 4230 and AS/NZS 1170 for specific design. For of direct bonded plasterboard linings, concrete masonry substrates must below 75% relative humidity prior to installation.

Carry out all necessary moisture readings. Do not commence installation until the moisture readings are below the required level.

Carry out all necessary substrate inspections and preparatory work in accordance with the manufacturer's recommendations and the GIB® Site Guide prior to installation. Complete and sign the GIB® Site Guide Pre-Installation Checklist.

Check that the building envelope has been finished at all penetrations including doors, windows, services, etc., and the building is weathertight.

Check junctions to all other building elements and ensure that all necessary works have been completed, including cavity insulation.

Check that all fixtures, fittings and built-in items are correctly installed, and that all framing and substrate edges are completed as detailed.

Confirm the location and details of movement control joints, as indicated on the drawings, prior to installation.

Ensure all pre-wiring and service piping is installed and complete.

Check that any required cavity insulation has been installed correctly and its bulk thickness does not exceed the framing thickness.

Remove all debris and rubbish from framing voids prior to installing linings.

The commencement of work on each section/area shall be deemed to indicate full acceptance by the installer that all preparatory works by other trades is complete.

3.10.10.2 Framing Check

Framing - check all aspects of preparatory works, including but not limited to:
- Check that the framing is straight and true to line, and is plumb/level and correctly aligned.
- Check that the framing is within the required deviation tolerances defined in AS/NZS 2589 according to the specified Finish Level.
- Check that vertical and horizontal framing members are at the spacings shown on the drawings, and

that any required battens or furring channels are installed to the required layout.
- Check that the framing has no projections due to structural and bracing bracketry, etc. Ensure that framing brackets, plates, braces, hold-downs, etc., are correctly installed.

3.10.10.3 Work above Ceilings

Check that all building work, mechanical, plumbing, electrical, fire protection and other services installed above the ceiling are completed and independently supported by the building structure - not by the ceiling system.

3.10.11 Installation

3.10.11.1 General

Install GIB® Plasterboard Linings and accessories in accordance with the requirements of the GIB® Site Guide and product technical literature and associated fixing schedules, to the locations and details shown on the drawings. For GIB® Performance Systems, refer to the relevant GIB® system specification.

Prior to installation, confirm:
- The locations and construction details of all movement control joints;
- The locations and installation details of all building services items within framed structures;
- The specified GIB® plasterboard installation and fixing requirements;
- The specified Finish Level(s) for the plasterboard linings.
- Subsequent surface treatments and finishes applied to GIB® plasterboard.

3.10.11.2 Standard Ceiling Fixing - Metal Ceiling Battens

GIB® Plasterboard Ceiling Linings - Standard Ceiling Fixing with Metal Ceiling Battens. Metal ceiling battens shall be from the GIB® Rondo® Metal Batten Systems - refer to separate specification GIB® Rondo® Metal Batten Systems.

Unless independently supported, uniformly distributed loads (fixtures and fittings and/or overlaid insulation) supported by GIB® plasterboard ceiling linings shall not exceed 3.0 kg/m².

Metal ceiling batten spacings shall be shall be as given in the GIB® Site Guide according to the specified plasterboard thickness - 600mm for 13mm or greater thickness, 450mm for 10mm thickness. Ceiling battens shall all run in the same direction within the ceiling area. In no case shall ceiling battens be continuous over movement control joints in the structure.

Install GIB® Plasterboard sheets right angles to ceiling battens, with sheet end-joints staggered minimum 600mm and located off battens and back-blocked. Fully support sheets during positioning and fixing - for ceiling installations, the use of a mechanical lifting machine is recommended.

Plasterboard sheets shall be fixed to ceiling battens in conjunction with GIBFix® adhesive applied at maximum at 200mm centres. Do not apply adhesive at sheet edges or within 200mm of fasteners. Firmly press the plasterboard where adhesive has been applied to ensure full contact.

Fix sheets to timber ceiling battens with GIB® Grabber® Self Tapping Screws in accordance with GIB® Site Guide fastener schedule according to the plasterboard thickness. Position fasteners no closer than 12mm from a tapered edge or 18mm from a cut sheet edge.

Install all necessary paper-faced metal beads, casing beads, shadow and reveal beads and other edge trims to plasterboard corners and edges as necessary and as detailed on the drawings.

Form movement control joints to the locations and details shown on the approved drawings. Where not indicated on the drawings, movement joints shall be positioned at maximum 12m intervals in both directions on any single ceiling, and where there is a change in ceiling lining material, and shall coincide with the junctions between adjoining spaces.

Accommodate recessed light fittings, heating and ventilating diffusers and grilles and other utility fixtures and fittings that penetrate the ceiling lining.

3.10.11.3 Standard Ceiling - Timber Ceiling Battens

GIB® Plasterboard Ceiling Linings - Standard Ceiling Fixing with Timber Ceiling Battens. Timber ceiling battens shall be 75 x 35mm thick and fixed in accordance with NZS 3604: Table 13.3. Refer to separate specification section Timber Framing.

Unless independently supported, uniformly distributed loads (fixtures and fittings and/or overlaid insulation) supported by GIB® plasterboard ceiling linings shall not exceed 3.0 kg/m².

Timber ceiling batten spacings shall not exceed the spacings given in the GIB® Site Guide according to the specified plasterboard thickness - 600mm for 13mm or greater thickness, 450mm for 10mm thickness. Where a ceiling batten spacing given in NZS 3604: Table 13.1 is less than that stated in the GIB® Site Guide, the NZS 3604 spacing shall be achieved. Ceiling battens shall all run in the same direction within the ceiling area or between movement control joints. In no case shall ceiling battens be continuous over movement control joints in the structure.

Install GIB® Plasterboard sheets right angles to ceiling battens, with sheet end-joints staggered minimum 600mm and located off battens and back-blocked. Fully support sheets during positioning and fixing - for ceiling installations, the use of a mechanical lifting machine is recommended.

Plasterboard sheets shall be fixed to ceiling battens in conjunction with GIBFix® adhesive applied at maximum at 200mm centres. Do not apply adhesive at sheet edges or within 200mm of fasteners. Firmly press the plasterboard where adhesive has been applied to ensure full contact.

Fix sheets to timber ceiling battens with GIB® Grabber® High Thread Screws in accordance with GIB® Site Guide fastener schedule according to the plasterboard thickness. Position fasteners no closer than 12mm from a tapered edge or 18mm from a cut sheet edge.

Install all necessary paper-faced metal beads, casing beads, shadow and reveal beads and other edge trims to plasterboard corners and edges as necessary and as detailed on the drawings.

Form movement control joints to the locations and details shown on the approved drawings. Where not indicated on the drawings, movement joints shall be positioned at maximum 12m intervals in both directions on any single ceiling, and where there is a change in ceiling lining material, and shall coincide with the junctions between adjoining spaces.

Accommodate recessed light fittings, heating and ventilating diffusers and grilles and other utility fixtures and fittings that penetrate the ceiling lining.

3.10.11.4 Ceiling Diaphragms

Ceiling Diaphragms - refer to separate specification GIB® Ezybrace Systems, and to the GIB EzyBrace® Systems publication.

3.10.11.5 Wall Linings - Horizontally Fixed - Timber Frame

GIB® Plasterboard Wall Linings Horizontally-Fixed to Timber Framing. Install GIB® plasterboard sheets horizontally, at right angles to studs, with any end-joints staggered, and with the bottom edge of the lower sheet gapped 5–10mm off finished floor level.

All joints between sheets shall be touch fitted. Eliminate or minimise the butting of sheet end-joints by using full-length or long-length sheets. Give careful consideration to the placement of sheet joints. Where possible, place joints in situations where they are less likely to be affected by critical lighting.

It is recommended that sheet end joints in horizontally fixed plasterboard be unsupported, off-stud and back blocked - stud centres must not exceed 600mm. For plasterboard linings with Level 3 Finish and Level 4 Finish, sheet end joints can be located on-stud.

Sheet end joints at openings, such as window and door openings, shall not coincide with the vertical edges of the opening - sheets shall be fitted so that the vertical end joint falls minimum 200mm either side of the edge of the opening.

Plasterboard sheets shall be fixed to timber framing in conjunction with GIBFix® adhesive applied at maximum at 300mm centres to intermediate studs. Do not apply adhesive at sheet edges or within 200mm of fasteners. Firmly press the plasterboard where adhesive has been applied to ensure full contact.

Fix sheets to timber framing with GIB® Grabber® High Thread Screws or GIB® Nails in accordance with GIB® Site Guide fastener schedule. Place fasteners at 300mm centres to top and bottom plates and to perimeter studs, and to each stud where the horizontal joint crosses the stud, with screws no closer than 12mm from sheet edges. It is recommended that fasteners at wall corners are placed 50mm in from the corner in each direction (horizontal/vertical).

Install all necessary paper-faced and metal beads, casing beads, shadow and reveal beads and other edge trims to plasterboard corners and edges as necessary and as detailed on the drawings.

Form movement control joints to the locations and details shown on the approved drawings. Where not indicated on the drawings, movement joints shall be positioned at maximum 12m intervals in

both directions (horizontally/vertically), and shall coincide with movement joints in the primary structure, and where there is a change in wall lining material.

Accommodate piped and cabled services and other building services fixtures and fittings that penetrate the wall lining.

3.10.11.6 Wall Linings - Vertically Fixed - Timber Frame

GIB® Plasterboard Wall Linings Vertically-Fixed to Timber Framing. Install GIB® plasterboard sheets vertically, parallel with studs, with any end-joints staggered, and with the bottom edge of the lower sheet gapped 5–10mm off finished floor level.

All joints between sheets shall be touch fitted. Eliminate or minimise the butting of sheet end-joints by using full-length or long-length sheets. Give careful consideration to the placement of sheet joints. Where possible, place joints in situations where they are less likely to be affected by critical lighting.

Form sheet edge joints on studs. Short vertical edge joints (400mm or less) such as above windows and door can be made off stud and back blocked.

Sheet joints at openings, such as window and door openings, shall not coincide with the vertical edges of the opening - sheets shall be fitted so that the vertical end joint falls minimum 200mm inside the edge of the opening.

Plasterboard sheets shall be fixed to timber framing in conjunction with GIBFix® adhesive applied at maximum at 300mm centres to intermediate studs. Do not apply adhesive at sheet edges or within 200mm of fasteners. Firmly press the plasterboard where adhesive has been applied to ensure full contact.

Fix sheets to timber framing with GIB® Grabber® High Thread Screws or GIB® Nails in accordance with GIB® Site Guide fastener schedule. Place fasteners at 300mm centres around the perimeter of each sheet, no closer than 12mm from sheet edges. It is recommended that fasteners at wall corners are placed 50mm in from the corner in each direction (horizontal/vertical).

Install all necessary paper-faced and metal beads, casing beads, shadow and reveal beads and other edge trims to plasterboard corners and edges as necessary and as detailed on the drawings.

Form movement control joints to the locations and details shown on the approved drawings. Where not indicated on the drawings, movement joints shall be positioned at maximum 12m intervals in both directions (horizontally/vertically), and shall coincide with movement joints in the primary structure, and where there is a change in wall lining material.

Accommodate piped and cabled services and other building services fixtures and fittings that penetrate the wall lining.

3.10.11.7 Jointing & Finishing

Joint and finish GIB® Plasterboard Linings with GIB® joint and finishing compounds appropriate for the plasterboard type and durability, and the finish level required. Refer to Joint & Finishing Compounds clause.

Carry out jointing and finishing according to the specified Finish Level in accordance with the GIB® Site Guide and GIB® Compounds brochure. Reinforce sheet joints and internal corners with joint tape or paper-faced trim embedded into the Taping (first) Coat.

Sheet joints, internal and external corners, and fastener heads shall be evenly finished with GIB® compounds. When dry, lightly sand to a smooth finish with 220 grit sandpaper or drywall sanding screen to remove tool marks, ridges and other imperfections prior to subsequent sealing and decorating.

3.10.12 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.

Preparation and painting (by others) of GIB® Plasterboard Linings shall be carried out in accordance with AS/NZS 2311 and with the paint manufacturer's recommendations. Refer to separate specification section Painting & Decorating.

Preparation, including application of under-tile waterproofing membranes, and tiling (by others) of GIB® Plasterboard Linings shall be carried out in accordance with AS 3589.1 and the BRANZ Good Practice Guide: Tiling. Refer to separate specification section Tiling.

3.11 Duragrid® Facade System

3.11.1 Scope

Supply and install Duragrid Façade System as fibre-cement panel cladding to the walls identified on the drawings, complete with all accessories. The panels are to be finished with a paint system. All aspects of this work shall be in complete accordance with Innova Duragrid Facade System Technical Literature (check http://innovafibrecement.co.nz, or call 0800 424 234 for the latest edition), BRANZ Appraisal No.752, other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for Innova Duragrid Façade System.

3.11.2 Co-operation

Co-ordinate with other trades to ensure that appropriate clearances are allowed from adjacent internal linings, and bathroom fixture products and associated services, etc, that the sheets correctly allow for door and window installation, and that services penetrations are correctly handled to maintain full watertightness and sheet integrity. Ensure that other trades are aware of the Innova safe working practices.

Discuss the panel fixings with the Painter and agree on the methodology of the finishing of these items so that any brad or countersunk screw fixings are correctly filled, flushed, and sanded in accordance with Innova requirements ready to receive the paint system.

Discuss the vertical express joints with the Painter and agree on the methodology of the finishing of these items so that the sealant is correctly applied in accordance with Innova requirements and the paint system application.

3.11.3 Preparation

Check that the timber framing elements are in accordance with NZS 3604, or in accordance with NZS 3603 and AS/NZS 1170 for specific design, and in accordance with Innova requirements. Framing shall be plumb and in true alignment, complete and suitable for the panels, and maximum moisture content 20%. Ensure that the framing is true in line with no projections due to structural and bracing bracketry etc.

Check that the building underlay or rigid air barrier has been installed in full accordance with the manufacturer’s requirements and the drawings, and completely finished to all penetrations including doors, windows, services, etc. Check junctions to all other building elements and ensure that all necessary works have been completed eg. flashings etc that will enable the panels and all accessories to be installed.

Check that the ground levels are sloping away from the building so that there will be no ponding water against the building, and that the ground will be remain clear of the panels by at least 100mm at all times in accordance with E2/AS1.

3.11.4 Flexible Sealant

Flexible silicone sealant to be BOSTIK Safetech Safeseal. Sealant colour to be black. Use as a sealant and gap filler to seal the panels and accessories in accordance with the sealant manufacturer's recommendations and to Innova requirements.

3.11.5 Adhesive Sealant

Polyurethane adhesive sealant to be BOSTIK Seal N Flex FC. Use to adhere the panels to the timber battens and accessories in accordance with the sealant manufacturer's recommendations and to Innova requirements.

3.11.6 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.

All installation work shall be carried out by competent tradesmen all in accordance Innova Duragrid Façade System Technical Literature and other relevant product manufacturers recommendations.

3.11.7 Delivery & Handling

Carry all panels on edge. Stack panels flat on a level platform off the ground ie. use the supplied delivery pallet on level ground (if no pallet then evenly spaced bearers on level ground at 400mm crs maximum). Keep panels and accessories dry at all times. Avoid damage to panel edges, ends, and surfaces. Keep uPVC flashings etc out of direct sunlight, and store all accessories on flat and avoid damage to any.

All installers to be familiar with and comply with the safe working practices in the Technical Literature, to use appropriate safety gear, and in particular to be aware to avoid breathing silica dust. Do not use any damaged or blemished panels or accessories.

3.11.8 Installation

Fix uPVC vent strip to the building underlay or rigid air barrier. Ensure that the openings in the vent strip are kept clear and unobstructed at all times. Fix H3.1 timber cavity battens through the building underlay or rigid air barrier to the framing, complete with corner flashings. Install the panels through the cavity battens and building underlay or rigid air barrier to the framing in accordance with the Technical Literature, complete with all accessories. Install mould accessories to complete the installation.

Corner flashings behind timber battens to be folded aluminium, and fixed with the same fixings as the timber battens.

Horizontal drainage joints to be formed on cavity batten framing with a folded aluminium Z-flashing. Ensure that the sheets are not fixed to the floor joists.

Ensure that all cut edges of panels are primed prior to installation with BCG Edge Sealer, Dulux Primacryl, Resene Quick Dry, or similar, with priming paint taken 100mm across back face of panel from cut edge. Ensure that the bottom edge of the panel overhangs below the bottom plate by

50mm, and is clear of the ground surface by at least 100mm; the finished ground clearance shall be in accordance with E2/AS1. Seal around services penetrations to maintain weathertightness and air pressure resistance.

3.11.9 Batten Fixings

Fix structural timber battens and other accessories with galvanised nails in accordance with Innova requirements.

3.11.10 Panel Fixings

Fix panels and accessories to the timber battens with Class 4 countersunk screws in accordance with Innova requirements.

3.11.11 Completion

Ensure that the panels have been fixed correctly, that all vertical joints and accessories have been completed correctly, and that all penetrations have been taped correctly. Check that no damage has occurred to any installed panel element or associated component, replace as necessary. Check that no dirt has been mounded up within 175mm of the panels, and maintain the clearance.

Ensure that the panels are painted within 90 days of the sheet installation, complete with all accessories and flashings.

Hand over a copy of the latest edition of the Innova Duragrid Façade System Product Warranty to the client. Hand over a copy of the latest Innova Duragrid Facade System Technical Literature to the client for their maintenance information.

3.12 James Hardie Eaves & Soffits

3.12.1 Scope

Supply and install the specified James Hardie products as a fibre-cement sheet lining material to the eaves and soffits identified on the drawings, complete with all accessories. All aspects of this work shall be in complete accordance with James Hardie Eaves And Soffits Installation Manual (check www.jameshardie.co.nz, or call 0800 808 868 for the latest edition) and other relevant product manufacturers' recommendations.

3.12.2 Eaves & Soffit Lining

Villaboard Lining 6mm. 6mm thick fibre-cement sheet lining with a sanded surface finish. The sheets are to be finished with a paint system. Installed in accordance with the James Hardie Eaves And Soffits Installation Manual to the locations shown on the drawings.

3.12.3 Co-operation

Co-ordinate with other trades to ensure that the panels correctly allow for fascia and wall cladding installation and associated flashings etc., and that services penetrations are correctly handled to maintain full weathertightness and sheet integrity.

Ensure that other trades are aware of the James Hardie Safe Working Practices.

3.12.4 Preparation

Check that the timber framing elements are in accordance with NZS 3604, or in accordance with NZS 3603 and AS/NZS 1170 for specific design, and in accordance with James Hardie requirements. The fascia and framing shall be in true alignment, complete and suitable for the sheets, and maximum moisture content as per NZS 3602. Ensure that the framing is true in line with no projections due to structural and bracing bracketry etc. Ensure that any hold-downs from the roof framing to the wall framing are correctly installed.

Check that the building underlay or rigid air barrier to the wall framing has been installed in full accordance with the manufacturer's requirements and the drawings. Check junctions to all other building elements and ensure that all necessary works have been completed eg. flashings etc that will enable the sheets and all accessories to be installed.

3.12.5 Flexible Sealant

Flexible silicone sealant to be SIKA AT Facade. Use to seal the sheets and accessories in accordance with the sealant manufacturer's recommendations and to James Hardie requirements. Ensure sealant compatibility with selected finish.

3.12.6 Adhesive Sealant

Polyurethane adhesive sealant to be BOSTIK Seal N Flex-1. Use to adhere the sheets to the framing in accordance with the sealant manufacturer's recommendations and to James Hardie requirements. Ensure sealant compatibility with jointing and texture finishes.

3.12.7 Workmanship

All installation work shall be carried out by an LBP, or supervised by an LBP, in accordance with James Hardie Eaves And Soffits Installation Manual and other relevant product manufacturers' recommendations.

3.12.8 Delivery & Handling

Carry all sheets on edge. Stack sheets flat on a level platform off the ground ie. use the supplied delivery pallet on level ground (if no pallet then evenly spaced bearers on level ground at 600mm crs maximum). Keep sheets and accessories dry at all times. Avoid damage to sheet edges, ends, and surfaces. Keep uPVC flashings etc. out of direct sunlight, and store all accessories on flat and avoid damage. All installers to be familiar with and comply with the James Hardie Safe Working Practices in the Installation Manual, to use appropriate safety gear, and in particular to be aware to avoid breathing silica dust. Do not use any damaged or blemished sheets or accessories.

3.12.9 Installation

Install the sheets to the framing in accordance with the Installation Manual, complete with all accessories eg. mouldings, sealant, underflashings, etc.

Ensure that all cut edges of panels are primed prior to installation with Dulux 1 Step Prep, Resene Quick Dry, or similar. Ensure that the bottom edge of the fascia forms a drip edge of 15mm minimum to the sheet. Seal around services penetrations to maintain weathertightness and air pressure resistance.

Villaboard™ Lining joints to be formed as flush joints with jointing compound and accessories, to Level 4 Finish. Seal sheet edges with Multiplast resin prior to flush stopping.

3.12.10 Fixings

Fix Villaboard™ Lining sheets with Grade 304 stainless steel screws in accordance with James Hardie requirements.

3.12.11 Completion

Ensure that the sheets have been fixed correctly, that all joints and accessories have been completed correctly, and that all penetrations have been taped correctly. Check that no damage has occurred to any installed sheet element or associated component, replace as necessary. Ensure that the sheets are painted within 90 days of the sheet installation, complete with all accessories and flashings. Hand over a copy of the latest edition of the James Hardie Villaboard™ Soffit Lining Product Warranty to the client. Hand over a copy of the latest James Hardie Eaves And Soffits Installation Manual to the client for their maintenance information.

4 CLADDING & PRECLADDING

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:

1170.0:2002 SUPP1(AS/NZS)	Structural design actions - General principles - Commentary
1170.2:2011(AS/NZS)	Structural design actions - Wind actions
2728:2013(AS|NZS)	Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements
3404.1&2:1997(NZS)	Steel Structures Standard
3602:2003(NZS)	Timber and wood-based products for use in building
3604:2011(NZS)	Timber-framed buildings
4211:2008(NZS)	Specification for performance of windows
4229:2013(NZS)	Concrete masonry buildings not requiring specific engineering design
AS/NZS 1604.2:2012	Specification for preservative treatment - Part 2: Reconstituted wood-based products
NZBC B1/VM1	Structure
NZBC B2/AS1	Durability
NZBC C/AS2-AS6	Protection from fire
NZBC E2/VM1	External Moisture
NZBC F2	Hazardous Building Materials
NZMRM Code of Practice	NZ Metal Roof and Wall Cladding Code of Practice - Version 3.0

4.3 IBS RigidRAP®

4.3.1 Scope

Supply and install IBS RigidRAP®, as specified herein, to the locations indicated on the design drawings, complete with all system components and accessories required for proper installation and performance. This system can be used as a rigid air barier system or a structural bracing system, or both. All aspects of this work shall be in complete accordance with IBS RigidRAP® Design and Installation Guide (check https://www.ibs.co.nz/product/ibs-rigidrap/, or email info@ibs.co.nz, or call 0800 500 338 for the latest editions), and other relevant product manufacturers' recommendations. IBS RigidRAP® is CodeMark assured with the NZ Building Code: refer to CodeMark Product Certificate

No: CM70035 Issued by Bureau Veritas Australia Pty Ltd.No substitutions are permitted for IBS RigidRAP®

For the purpose of this specification, all IBS RigidRAP® technical literature, including the Design & Installation Guide and CodeMark Certificate, is collectively referred to as the 'Technical Literature'.

This specification section must be read in conjunction with other specification sections and the contract documents, as they are interrelated. For more information, please refer to:

IBS RigidRAP® FAQ's: https://www.ibs.co.nz/wp-content/uploads/2019/08/IBS-RigidRAP-1-Page-FAQ.pdf

IBS RigidRAP® Booklet: https://www.ibs.co.nz/wp-content/uploads/2019/07/RigidRAP-Booklet.pdf

IBS RigidRAP® Design and Installation guide to: https://www.ibs.co.nz/wp-content/uploads/2019/07/RigidRAP-Design-Installation-Guide.pdf

IBS RigidRAP® CodeMark certificate to: https://www.ibs.co.nz/wp-content/uploads/2019/07/RigidRAP-Codemark-Certificate-CM70035.pdf

IBS RigidRAP® approved CAD details to:https://www.ibs.co.nz/download-centre-cad-files/

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

IBS RigidRAP® Product Warranty - according to warranty terms and conditions:

- 50 Years Warranty for IBS RigidRAP® supplied by IBS.
- Provide the warranty on the supplier's standard warranty form.
- Commence the warranty from the date of practical completion of the contract works.

4.3.2.3 Substitutions

IBS RigidRAP® shall be as specified herein and on the design drawings. The substitution of IBS RigidRAP® for an alternative rigid air barrier material or wall bracing system is not permitted under any circumstances.

For all IBS RigidRAP® Wall Bracing Systems, no product substitution is allowed.

The substitution of a specified IBS RigidRAP® wall bracing system for an alternative IBS RigidRAP® wall bracing system 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 an alternative IBS RigidRAP® wall bracing system to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Contractor.

4.3.2.4 Inspections & Reporting

BCA inspections of the works shall take place at each of the stages scheduled in the Building Consent.
Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection.
Carry out all necessary pre-installation and installation inspections for each area of the works.
Complete all necessary Pre-Installation Checklists, and all necessary Installation Checklists.
Complete all necessary Sign-Off Certificates before handing over completed work.

4.3.2.5 Quality Assurance

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

4.3.2.6 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 IBS RigidRAP® work shall be repaired and/or replaced to the satisfaction of the Contract Administrator, without delay and at no additional cost to the Principal.

4.3.3 Wall Bracing System

4.3.3.1 SYSTEM 1: IBS RigidRAP® 300 x 2400 mm wall using Gib Handibrac®

SYSTEM 1: IBS RigidRAP® 300 x 2400 mm wall using Gib Handibrac®
- Fixing: 30 x 2.5 Galv clouts @ 150mm centres, 12mm from the edge.
- Fixing: Gib Handibrac® to concrete as per manufacturer's instructions
- Minimum Wall Length: 300mm.
- Lining Requirements: 8mm IBS IBS RigidRAP® fixed to one side.
- BU/m - Wind: Concrete Floor = 49 BU/m. Timber Floor = 49 BU/m.
- BU/m - Earthquake: Concrete Floor = 58 BU/M. Timber Floor = 58 BU/m.

Installed to the locations indicated on the design drawings in accordance with the IBS RigidRAP® Design & Installation guide.
Wall length to not be longer than twice the stated length.
Installed Location:

4.3.3.2 SYSTEM 3: IBS RigidRAP® 600 mm x 2400 mm wall GIB HandiBrac®

SYSTEM 3: IBS RigidRAP® 600 mm x 2400 mm wall GIB HandiBrac®
- Fixing 30 x 2.5 Galv clouts @ 150mm centres, 12mmm from edge.
- Fixing: Gib Handibrac® to concrete as per manufacturer's instructions
- Minimum Wall Length: 600mm.
- Lining Requirements: 8mm IBS IBS RigidRAP® fixed to one side.
- BU/m - Wind: Concrete Floor = 76 BU/m. Timber Floor = 76 BU/m.
- BU/m - Earthquake: Concrete Floor = 81 BU/M. Timber Floor = 81 BU/m.

Installed to the locations indicated on the design drawings in accordance with the IBS RigidRAP® Design & Installation guide.
Wall length to not be longer than twice the stated length.

Installed Location:

4.3.4 Components & Accessories

4.3.4.1 Gib HandiBrac

GIB HandiBrac® is to be fixed to the 90 x 45mm studs with 4 No. supplied Tek Screws, and to the floor substrate with:
Fixing to timber framed floors: BOWMAC® screw bolt to achieve a characteristic uplift strength of 12kN.
Fixing to concrete slabs: BOWMAC® screw bolt to achieve a characteristic uplift strength of 15kN
Install as per manufacturers instructions. For more information on the system, refer to: https://www.gib.co.nz/assets/Uploads/LiteratureFile/PRODUCTS/GIB-HandiBrac-Brochure.pdf

4.3.4.2 Z Flashing for Inter-storey Joints

Contractor to ensure a proprietary 'Z' flashing is installed at mid floor level where IBS RigidRAP® is installed on multi levels. Material for flashing to meet NZS3604: 2011 exposure zone requirements. Aluminium or stainless steel is recommended.
Z Flashing:
Material:
Finish:
Location:

4.3.4.3 Flexible Flashing Tape

Flexible Flashing Tapes - for exterior applications. Only use flexible sealing tapes approved for use with IBS RigidRAP® , in accordance with the tape manufacturer's instructions and the Technical Literature. Flexible flashing tapes shall be used to seal IBS RigidRAP® panel joints (vertical and horizontal), around framed window and door openings in exterior walls, and to seal pipes, ducts, etc penetrating exterior walls so as to form a weathertight rigid air barrier.

Approved Flexible Flashing Tapes:
- Hydro™ Flashing Tape (Masons)
- Super-Stick® Building Tape (Marshall Innovations)
- Tescon Extora (Pro Clima)
- FlameFlash™ Flashing Tape (Techno Insulation)
- Watertight® Flashing Tape (Techno Insulation)
- 3M All Weather FLashing Tape 8067

4.3.4.4 Mechanical Connections and Ties - Wall Bracing Systems

Mechanical Connections and Ties - for IBS RigidRAP® Wall Bracing Systems. Refer to the selected bracing systems in the Wall Bracing Systems clause and the IBS RigidRAP® Design and Installation Guide section 3.3.9, pg 12 for specific requirements.

4.3.5 Sealing tape

4.3.5.1 General

For joint sealing tape selection, refer for more information to IBS RigidRap® installation guidance 3.4, and to the appropriate proprietary system's installation instructions. The following sealaing tapes are suitable and compatible for use with the IBS RigidRap® system. If unsure, please contact RigidRap®. All joints and penetrations must be sealed including:

- Vertical and horizontal joints
- External and internal joints
- Penetrations
- Window and door joinery

Where sealing a joint, ensure the IBS RigidRAP® joins are centred under the tape joint. Use a 25 mm hard PVC roller to ensure full adhesion.

4.3.6 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 the Technical Literature.

Coordinate with trades as necessary to install IBS RigidRAP® as required.

4.3.7 Workmanship

4.3.7.1 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 (LBP). On completion of the installation, the installing LBP 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.

Installation and finishing work shall be carried out by suitably qualified and experienced tradespersons, familiar with the specified materials and their installation techniques and cavity construction, in accordance with the Technical Literature, and to fully comply with all warranty requirements.

All cutting, drilling and notching, jointing and sealing techniques shall be exactly as recommended by the manufacturer and shall be carried out using suitable tools and equipment.

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

4.3.8 Delivery and Handling

Upon delivery to site inspect IBS RigidRAP® materials and reject those items found to be damaged, defective or substandard, and contact the supplier immediately. Any strapping and shrink-wrap must be removed from packed IBS RigidRAP® without delay. Allow IBS RigidRAP® to condition and acclimatise for at least 48 hours prior to commencing installation.

Store IBS RigidRAP® panels undercover in a well-ventilated area, stacked flat, off the ground and supported on level bearers spaced at maximum 800mm centres in accordance with the Technical Literature. Keep stored materials dry and protected from damage and contamination, and free from bending and distortion.

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

Should a problem be encountered with any IBS RigidRAP® product, immediately contact IBS on 0800 367 759. Do not continue to use the product that is not performing to specification or expectation. Keep the product in question, and where possible, document numbers and/or manufacturing details.

IBS RigidRAP® must not be exposed to weather (atmospheric conditions) for more than 3 months after installation - remove and replace with new IBS RigidRAP® if 3 months' exposure is exceeded.

Handle materials in accordance with the manufacturer's recommendations, and in a manner that prevents damage and does not reduce its performance.IBS RigidRAP® panels should always be carried manually on edge.

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.

4.3.9 Preparation

4.3.9.1 Framing Check

Framing Check - prior to installation check all aspects of preparatory works, including but not limited to:

- Check that wall framing has been completed to the layout shown on the design drawings and complies with the relevant design and construction standards.
- Check the framing has studs spaced at maximum 600mm centres, has the required number of rows of horizontal nogs/dwangs at the correct spacings, is plumb and in true alignment,
- Check the framing is securely fixed, true to line and plane, is plumb and level where required, and is correctly trimmed at edges, openings and penetrations as required.
- Check there are no projections due to structural bracing and bracketry etc.
- Exterior walls: check the required clearances from ground, deck, balcony or lower roof to the bottom edge of the rigid air barrier and cladding system are in accordance with NZBC E2/AS1.

4.3.9.2 Preparation

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

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

Timber framed elements shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific-design, and have a maximum moisture content of 18% at the time of IBS RigidRAP® installation.

Lightweight steel framed elements shall comply with the requirements of AS/NZS 4600 or the NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria. Comply with the light structural steel framing fabricator's specifications and requirements for fixing rigid wall underlay. Note: the installation of IBS RigidRAP® on lightweight steel framing is limited to the use as a rigid air barrier only (when fitted with a thermal break), NOT for structural bracing purposes.

4.3.10 Installation

Install IBS RigidRAP® as a rigid air barrier in accordance with the Technical Literature.

General:
- Panels must always be installed vertically when used as a bracing element.
- Always install panels with the printed side showing 'This Side Out' to the exterior of the building.
- Panels joints must be formed on solid framing with panel edges fully supported and gapped minimum 4mm apart (vertical and horizontal).
- Panel fixing - refer to Panel Fixing clause. Do NOT drive fixings below the panel surface.
- All vertical and horizontal panel joints, other than at mid-floor inter-storey junctions, must be sealed with an approved flexible flashing tape
- Allow a minimum of 4 mm between panel joints to accommodate dimension movement.

Horizontal Joints:
- Panel joints on walls greater than 3050mm high (except inter-storey joints) shall be formed on solid blocking, of the same gauge as the studs, with a 4mm gap between upper and lower panels. Panels higher than IBS RigidRAP® 2440 mm must be fixed top plate to bottom plate. When walls are higher than 2440 mm, IBS RigidRAP® 2745 or 3050 mm sheets can be used.
- Inter-storey joints shall be made at each mid-floor level and incorporate a proprietary rigid 'Z' flashing and a 15mm gap between upper and lower panels. The panels must NOT be fixed to the mid-floor structure (joists, blocking, etc). IBS RigidRAP® must not be exposed to weather (atmospheric conditions) for more than 3 months after installation. Install cladding systems as soon as possible to enclose and protect installed IBS RigidRAP®.
- If the bracing systems requires GIB HandiBrac® hold down brackets, they shall be fixed to each end-to-end studs and to bottom plate with concrete hold downs as per manufacturer’s specifications. Refer to the IBS RigidRap® installation guide 3.3.13.3 for more information.

4.3.11 Limitations

When specifying IBS RigidRAP® as a bracing element, the designer must take into account site specific conditions and the building with respect to, but not limited to, the
following:
• Environmental (exposure) zone
• Wind zone
• Wall bracing table for wind and EQ demand
• Structural design loads
• Structural framing requirements
• Preparation of substrate
• External envelope

• Other materials likely to affect the performance of IBS RigidRAP®Refer to the IBS RigidRAP® Design & Installation Guide for more information on limitations.

- Allow a minimum of 4 mm between panel joints to accommodate dimension movement.
- Maximum spacings of wall studs must not exceed 600 mm centres.
- Curved walls, minimum radius 2.5 m are allowable, the IBS RigidRAP® panels must be fixed horizontally onto framing studs with spacing and stud centres dependent on the radius.
- A proprietary 'Z' flashing must be installed at mid floor level where IBS RigidRAP® is installed on multi levels. Serviceability of the joints may be affected if - at the time the timber framing is installed - its moisture content is greater than 18%.
- For wall heights greater than 3050 mm horizontal wall joints are permitted, provided the panel joint is over solid blocking of the same gauge as the studs.
- Panels higher than IBS RigidRAP® 2440 mm must be fixed top plate to bottom plate. When walls are higher than 2440mm, IBS RigidRAP® 2745 or 3050 mm sheets can be used.
- All joints, other than mid floor level, (vertical and horizontal) must be sealed with an IBS approved self-adhesive "flashing tape" as specified in section 3.4. IBS recommend 150 mm flashing tape or a proprietary Z flashing for horizontal joins.
- A hole 100 x 100 mm maximum within an envelope of 100 mm from top and vertical edges and 200 mm from the bottom of the IBS RigidRAP® panel will not affect the bracing capacity. Multiple holes of this size are permitted provided the centre lines of the holes are not closer than 600 mm.
- Steel fixings and fastenings must be in accordance with table 4.1, NZS 3604: 2011.
- IBS RigidRAP® must be allowed to acclimatise for at least 48 hours prior to installation.
- Do not install IBS RigidRAP® if the building paper has delaminated from the OSB sheet.

4.3.12 Completion

Check IBS RigidRAP® rigid air barrier and bracing systems have been installed correctly according to the Technical Literature and as indicated on the design drawings.

Check that all IBS RigidRAP® panel joints, window and door openings and panel penetrations are correctly sealed with flexible flashing tape according to the Technical Literature.

Check for damage and defects - replace or repair as necessary to the required standard.

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 all of this work complete and to the required standard in accordance with the Technical Literature and warranty requirements.

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

Complete and sign the Restricted Building Work (RBW) memorandum. Issue a copy of the RBW document to the Building Consent Authority and, where applicable, to the Main Contractor.

Issue to the Owner a copy of the IBS RigidRAP® Care & Maintenance requirements, and a copy of the IBS RigidRAP® Product Warranty.

4.4 Stratco Profiled Metal Wall Cladding

4.4.1 Scope

Supply and install Stratco - Profiled Metal Wall Cladding, 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 Stratco - Profiled Metal Wall Cladding technical literature and publications (check http://www.stratco.co.nz or call (0800) 787 282 for the latest editions), and other relevant product manufacturers' recommendations.

No substitutions are permitted for Stratco - Profiled Metal Wall Cladding.

For the purpose of this specification, Stratco - Profiled Metal Wall Cladding is referred to as 'Profiled Metal Wall Cladding', and all 'Stratco' associated technical literature and publications, including the 'Stratco Product Technical Statement', installation instructions and drawings, are collectively referred to as the 'technical literature'.

Extent of work:

The following is a list and/or general description of the extent of the Stratco - Profiled Metal Wall Cladding works, which are more specifically defined in the contract documents, required for the completion of the contract works:

4.4.2 Requirements

4.4.2.1 Defective materials & workmanship:

Should defective materials and/or work be found at any time before the final acceptance of the work, it shall be rejected. Rejected Stratco - Profiled Metal Wall Cladding materials and work shall be repaired and/or replaced to the satisfaction of the Contract Administrator without delay and at no additional cost to the Principal.

4.4.2.2 Quality assurance:

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

4.4.2.3 Inspections & reporting:

Inspections shall take place at each of the stages as scheduled in the building consent. Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection.

Carry out all necessary pre-installation and installation inspections for each area of the works.

Complete all necessary pre-installation checklists prior to installation, and all necessary installation checklists.

Complete all necessary final checklists and installation sign-off certificates before handing over completed work.

4.4.2.4 Producer statement (PS3):

The Stratco - Profiled Metal Wall installer shall furnish a fully completed PS3 Producer Statement (Construction) at time of application for Code Compliance Certificate. The Producer Statement shall accurately reflect the scope of the installation of the Profiled Metal Wall Cladding in accordance with the consented drawings and specifications.

4.4.2.5 Samples:

As required, provide samples of the specified Stratco - Profiled Metal Wall cladding for verification by the Contract Administrator.

4.4.2.6 Substitutions:

The Stratco - Profiled Metal Wall Cladding shall be as specified herein and on the design drawings. The substitution of the Stratco - Profiled Metal Wall Cladding for an alternative brand is not permitted under any circumstances.

The substitution of the specified Stratco - Profiled Metal Wall Cladding or ancillary component for an alternative Stratco - Profiled Metal Wall system or ancillary component 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 an alternative Stratco - Profiled Metal Wall Cladding or ancillary component to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Contractor.

4.4.2.7 Warranty:

Warranty for Manufacturer or Supplier:

- 15 years minimum for coatings

Commence the warranty from the date of installation.

Warranty - Installer/ Applicator:

Warrant this work under normal environmental and use conditions against weatherproofing failure.

Workmanship – Refer to Supplier.

4.4.2.8 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.

4.4.3 Profile

Stratco Superdek Wall sheet - a trapezoidal profile; 28mm rib height and 750 - 760mm effective cover based on the selected BMT.

Material type - Refer to 'Wall Sheet Material' clause.
Thickness - 0.40mm BMT(G550), 0.55mm BMT(G550), 0.9mm BMT (aluminium)
Windload – Low, Medium, High, Very High, Extra High.
Mass (KG/M2)- Refer to 'Stratco'

Installed in accordance with the manufacturer's requirements to the locations and details shown on the drawings.

Installed Location:
Thickness:

4.4.4 Wall Sheet Material

COLORSTEEL® Maxam™ to selected BMT. Pre-painted hot dipped aluminium/zinc/magnesium alloy coated steel coil, with a minimum coating weight of 150g/m², conforming with AS/NZS 2728 Class 6. COLORSTEEL®

Colour:

4.4.5 Cavity Batten & Closures

4.4.5.1 Castellated Cavity Battens - Vertically Orientated Wall Cladding:

Castellated Cavity Battens for vertically orientated wall cladding over framing should be installed horizontal over the wall underlay and directly over nogs or girts at maximum spacing to suit the cladding profile and as shown on the drawings. Fix to timber framing with 40 x 2.5mm hot-dipped galvanised flat head nails or fix to lightweight steel framing with 6g x 30mm self-drilling (AS 3566 Corrosion Class 3) countersunk screws. Do not use battens treated with copper azole or AQC treatment. Where shown and as specified on the drawings, install a separation layer over the face of timber cavity battens to ensure isolation of materials between the cladding and the cavity batten. Closures to be UPVC installed as per design details and manufacturers requirements.

4.4.6 Wall Ancillary Components & Accessories

Cladding screw 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 cladding profile and material and the supporting structure material; all in accordance with the NZMRM Code of Practice and E2 External Moisture.

Metal Flashings. Profiled metal cladding flashings shall be fabricated from material with the same coating as the cladding material, to maintain durability and compatibility requirements. Flashings shall be 0.55BMT G300 steel or H34 Aluminium coated to the same standards as the profiled cladding

sheets, and notched/scribed when installed across the cladding profile or provided with a soft edge – in accordance with COLORSTEEL® and NZMRM Code of Practice requirements.

Flashings, flashing fastenings and fastening frequency shall be in accordance with the NZMRM Code of Practice.

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

Rivet Fastenings. Rivets shall be sealed aluminium minimum 4mm diameter.

Use only neutral-curing silicone or MS polymer sealant, compatible with the specified metal cladding and flashing materials and finishes, that is suitable for the required application and use in accordance with the sealant manufacturer's instructions and to NZMRM Code of Practice requirements. All sealed joints must be mechanically fastened, and excess sealant neatly removed to prevent unnecessary dirt build-up. Sealant shall only be used to seal between two metal surfaces, do not fill holes or gaps with sealant.

Proprietary Collar Flashings. EDPM or silicone-polymer proprietary flexible collar flashings for weatherproofing cladding-penetrating pipes/flues/ducts. Sized to suit the applicable pipe/flue/duct and installed in strict accordance with the manufacturer's requirements and the NZMRM Code of Practice.

Profiled Foam Closure Strip. Non-bituminous, compressible, closed-cell foam strips profiled to fit the specified cladding profile. Installed to the details shown on the drawings and in accordance with COLORSTEEL® and NZMRM Code of Practice recommendations.

4.4.7 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 assembly and installation of the Stratco Profiled Metal Wall Cladding to the required layout, details and tolerances.

4.4.8 Qualifications & 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 suitably qualified to install Profiled Metal Wall Cladding, to fully comply with all warranty requirements in accordance with the manufacturer's requirements.

All cutting, fixing and installation techniques, fastenings and sealants shall be exactly as recommended by and 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 NZMRM Code of Practice Section 4.10. Isolate dissimilar materials (metal and non-metal) in close proximity as necessary by fitting separator strips. Place isolators between metals and treated timber or cement-based materials.

Do not allow unpainted lead-sheet or copper materials to come in contact with, or allow water run-off from these onto Zincalume or galvanised materials.

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

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 suitably qualified to install Profiled Metal Wall Cladding, to fully comply with all warranty requirements in accordance with the manufacturer's requirements.

Installers of COLORSTEEL Dridex® shall be supervised by an accredited COLORSTEEL Dridex® installer. Installers of COLORSTEEL Maxam® shall be supervised by an accredited COLORSTEEL Maxam® installer.

All cutting, fixing and installation techniques, fastenings and sealants shall be exactly as recommended by and 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 NZMRM Code of Practice Section 4.10. Isolate dissimilar materials (metal and non-metal) in close proximity as necessary by fitting separator strips. Place isolators between metals and treated timber or cement-based materials. Do not allow unpainted lead-sheet or copper materials to come in contact with, or allow water run-off from these onto Zincalume or galvanised materials.

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

4.4.9 Delivery & Handling

Store profiled Metal Wall Cladding, flashings and accessories clear of level ground, on bearers at evenly spaced centres as recommended by the NZMRM Code of Practice. 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.

4.4.10 Preparation

Check that the specified building underlay (to NZS 2295) has been installed in accordance with NZBC requirements and the manufacturer's recommendations, and with all finishing tapes, flashings etc. at windows, doors, corners and penetrations all correctly incorporated to provide a continuous seal.

Check that appropriate additional restraint is correctly installed over the underlay to keep bulk insulation from pushing the underlay into the cavity space.

Ensure that all underlays directly behind Profiled Metal Wall Cladding are of absorbent type as required in E2/AS1 Table 23. Check that all preparatory materials are lapped such that any water will run down to the exterior.
Check that ground levels and drains are constructed so that there will be no ponding water against the building, and that the ground will always remain clear of the cladding by at least 100mm in accordance with E2/AS1.

4.4.11 Installation

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 Working at Heights.

Prevent contact with, or run-off from, incompatible materials in accordance with the recommendations in the NZMRM Code of Practice.

Protect the finished surface from damage at all times; replace the whole sheet where a significant depth of the finish has been damaged (including flashings).

Accurately set-out the planned cladding layout prior to fixing to ensure true and accurate cladding lines and incorporate correct relationships with other design features shown on the drawings; maintain this accurate set-out throughout installation.

Keep cladding lines consistent and true along the wall; with side-laps of sheets to be straight, true and accurately aligned up and down. Check for and eliminate any creep and/or spread of sheets during installation.

Cut metal cladding and flashings by shear only - do not use abrasive cutting tools. Do not use black lead pencils for marking pre-finished metal cladding and flashings.

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

Install fasteners in a straight line with a consistent fastening pattern on each sheet in accordance with 'technical literature' requirements. Fasteners are to be set using a snug fitting socket and a setting tool that does not unduly damage the finish coating of the screw. Depth of setting is to be sufficient

to achieve slight compression of the sealing washer without distorting the profile or the sealing washer itself.

Aluminium rivets are to be sealed type minimum 4mm diameter. Clip-fastened sheets shall be fixed with concealed proprietary fastening clips appropriate for the cladding profile and material, substrate/structure and the environment in accordance with the NZMRM Code of Practice recommendations.

Install flashings as detailed on the drawings and in accordance with the Zealand Metal Roofing Code of Practice. All flashings shall be neatly formed and finished, securely fastened to the structure, weatherproof, and lapped such that any water will run down to the exterior. For highly visible flashings, plan each flashing joint and/or junction with specific regard to aesthetic requirements. Penetration flashings shall be as per the design details and shall not rely solely on silicone sealant to achieve weathertightness of the flashing.

Handle sheets carefully to avoid scratching and denting. Do not walk on cladding sheets prior to installation. Remove strippable film, if applied, immediately after installation of wall cladding to avoid resin staining. Ensure sealant is trapped between joint surfaces and not exposed to the visual surface.

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 Working at Heights.

Ensure cavity battens and closures are installed in accordance with specifications and suitable separation is provided between treated battens and Profiled Metal Wall Cladding.

Install Profiled Metal Wall Cladding in accordance with the design drawings. Confirm the layout and location of all control joints; the layout of the cavity battens; and any specific cladding detailing requirements prior to installation.

Prevent contact with, or run-off from, incompatible materials in accordance with the recommendations in the NZMRM Code of Practice.
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).

Accurately set-out the planned cladding layout prior to fixing to ensure true and accurate cladding lines and incorporate correct relationships with other design features shown on the drawings; maintain this accurate set-out throughout installation.

Keep cladding lines consistent and true along walls and around corners; with side-laps of vertically orientated sheets directed away from the prevailing wind and/or line of sight; to straight, true and accurately aligned lines in both directions - vertical and horizontal. Check for and eliminate any creep and/or spread of sheets during installation.

Cut metal cladding and flashings by shear only - do not use abrasive cutting tools. Do not use black lead pencils for marking pre-finished metal cladding and flashings.

Screw fastenings for pre-painted metal must be pre-painted prior to installation for an accurate colour match.

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

Install fasteners in a straight line with a consistent fastening pattern on each sheet to achieve a flat surface and resist design wind loads. Fasteners into timber are to have a minimum of 30mm embedment into structural framing. For pierce fastened profiles, fasteners are to be positioned in the pan adjacent to a rib unless otherwise specified.

Install fasteners in a straight line with a consistent fastening pattern on each sheet to achieve a flat surface and resist design wind loads. Fasteners into steel are to have a minimum penetration of three threads through the steel member. For pierce fastened profiles, fasteners are to be positioned in the pan adjacent to a rib unless otherwise specified.

Fasteners are to be set using a snug fitting socket and a setting tool that does not unduly damage the finish coating of the screw. Depth of setting is to be sufficient to achieve slight compression of the sealing washer without distorting the profile or the sealing washer itself.
Aluminium rivets are to be sealed type pre-painted to match cladding, minimum 4mm diameter. Clip-fastened sheets shall be fixed with concealed proprietary fastening clips appropriate for the cladding profile and material, substrate/structure and the environment in accordance with the NZMRM Code of Practice recommendations.

Install flashings to internal and external corner junctions, window/door and other openings, eave and soffit junctions, parapets and at junctions with other cladding systems and building elements as detailed on the drawings and in accordance with the Zealand Metal Roofing Code of Practice. All flashings shall be neatly formed and finished, securely fastened to the structure, weatherproof, and lapped such that any water will run down to the exterior. For highly visible flashings, plan each flashing joint and/or junction with specific regard to aesthetic requirements. Penetration flashings shall be as per the design details and shall not rely solely on silicone sealant to achieve weathertightness of the flashing.

Form vertical movement control joints to the locations, layout and details shown on the drawings. Movement control joints shall be aligned with control joints in the structural framing. Confirm the location of movement control joints prior to installation.

Handle sheets carefully to avoid scratching and denting. Do not walk on wall cladding sheets prior to installation. Remove strippable film, if applied, immediately after installation of wall cladding to avoid resin staining. All accessories are to be colour matched prior to installation, do not use colour match paint for repairing any blemishes. Ensure sealant is trapped between joint surfaces and not exposed to the visual surface.

4.4.12 Compatibility

Ensure material is isolated from incompatible materials. It must not be in contact with, or receive run off from, less noble metals such as copper, brass and lead. It should not be in wet contact with stainless steel. Sustained wet contact with timber, either treated or untreated, must be avoided. For more information, see the COLORSTEEL® Installers Guide (available at www.colorsteel.co.nz).

4.4.13 Completion

Check that the Stratco Profiled Metal Wall Cladding 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. Ensure that the work of other trades does not reduce the clearances of the cladding to ground, deck or roof that are required by the NZ Building Code.

Leave all work complete and weathertight and to the required standard. Leave the completed works and surrounding surfaces clean and free of debris and rubbish. Remove all rubbish and excess material from the site.

Maintenance should be carried out in accordance with Stratco's maintenance requirements.

4.5 Cemintel Territory External Vertical Cladding System

4.5.1 Scope

4.5.1.1 Scope:

Supply and install Cemintel Territory External Vertical Cladding System, 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 Cemintel Territory External Vertical Cladding System technical literature and publications (check https://www.cemintel.co.nz , or email orders@csr.co.nz, or call 0800 999 277 for the latest editions), and other relevant product manufacturers' recommendations.

No substitutions are permitted for Cemintel Territory External Vertical Cladding System.

For the purpose of this specification, the ‘Cladding System’ is referred to as ‘Cemintel Territory External Vertical Cladding System’ and all ‘CSR Cemintel’ associated technical literature and publications, including the Product Technical Statement, installation instructions and drawings, are collectively referred to as the 'technical Literature'.

Cemintel Territory External Vertical Cladding System is designed for residential and commercial buildings as an external cladding system. The system incorporates a vermin proof cavity system, panel mounting clips and ‘tongue & groove’ cement bonded fibrous wood cladding panels with a pre-finished texture applied to the front face.

Extent of work:

The following is a list and/or general description of the extent of the Cemintel Territory External Vertical Cladding System works, which are more specifically defined in the contract documents, required for the completion of the contract works:

4.5.2 Cemintel Territory External Vertical Cladding System

4.5.2.1 Cemintel Territory Woodlands cladding panel:

Cemintel Territory External Vertical Cavity Cladding System with Territory 'Woodlands' 455mm wide x 16mm thick, 'tongue and groove' cement bonded fibrous wood panel with pre-finished textured finish fixed to specified wall system with proprietary components.

Location – External use.

Substrate system – Drained & vented cavity, refer to 'Fixing' & 'Preparation' clause.
Material – Cement bonded fibrous cement panel
Mass – 24.6 – 30 KG per panel
Fire rating – Type 'A' to ISO5660 requirements. Refer to 'CSR Cemintel'
Finish/ Colour – Teak, Grey Gum, Ebony, Jarrah Slats, Kwila Slats, Oaky Slats. Options available on request – Smoked, Cedar, Limed, Birch.
Texture – Woodlands
Protective coating – 'Nichiguard' stain resistant coating applied during manufacture
Panel Width - 455mm
Panel standard length – 3030mm long

Installed Vertically, over proprietary panel clips that form a nominal 15mm drained cavity, to specified exterior walls in accordance with the manufacturer's requirements and as shown on the drawings.

Panels are 'tongue and groove' profile along the longest edge forming a watertight seal when joined. End joints are aligned with adjacent panels and finished with specified sealant. All Cladding is to be installed to the requirements of the 'technical literature'

Panels are secured to the specified wall system with proprietary panel clips fastened through specified building wrap or Rigid Air Barrier to the requirements of the 'technical literature'

Location:
Colour:

4.5.3 Requirements

4.5.3.1 Defective materials & workmanship:

Should defective materials and/or work be found at any time before the final acceptance of the work, it shall be rejected. Rejected Cemintel Territory External Vertical Cladding System materials and work shall be repaired and/or replaced to the satisfaction of the Contract Administrator without delay and at no additional cost to the Principal.

4.5.3.2 Quality assurance:

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

4.5.3.3 Inspections & reporting:

BCA inspections shall take place at each of the stages as scheduled in the Building Consent. Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection.

Carry out all necessary pre-installation and installation inspections for each area of the works.

Complete all necessary Pre-Installation Checklists prior to installation, and all necessary Installation Checklists.

Complete all necessary Final Checklists and Installation Sign-Off Certificates before handing over completed work.

4.5.3.4 Producer statement (PS3)

The Cemintel Territory External Vertical Cladding System installer shall furnish a fully completed PS3 Producer Statement (Construction) at time of application for Code Compliance Certificate. The Producer Statement shall accurately reflect the scope of the installation of the Cemintel Territory External Vertical Cladding System in accordance with the consented drawings and specifications.

4.5.3.5 Samples:

As required, provide samples of the specified Cemintel Territory External Vertical Cladding System, including selected finish and colour, all as agreed, for verification by the Contract Administrator. Installation should not commence until approval has been gained.

4.5.3.6 Substitutions:

The Cemintel Territory External Vertical Cladding System shall be as specified herein and on the design drawings. The substitution of the Cemintel Territory External Vertical Cladding System for an alternative brand, system or product is not permitted under any circumstances.

The substitution of a specified Cemintel Territory External Vertical Cladding System or component for an alternative Cemintel Territory External Vertical Cladding System or component 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 an alternative Cemintel Territory External Vertical Cladding System or component to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Contractor.

4.5.3.7 Warranty:

Cemintel Territory External Vertical Cladding System Warranty - according to the warranty terms and conditions.

- 15 -year warranty for Cemintel Territory External Vertical Cladding System materials and installation.
- Provide this warranty on the ‘CSR Cemintel’ standard warranty form.
- Commence the warranty from the date of delivery to site and/or product collection.

Include a copy of the manufacturer's maintenance requirements with the warranty.

4.5.3.8 Safety:

Comply with the Health and Safety at Work Act 2015 (HSWA)http://www.worksafe.govt.nz, 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.

4.5.4 Ancillary Components & Accessories

4.5.4.1 L- Form Cavity Vent:

Proprietary ‘L’ shaped x 1200mm long vent section with EDPM tape & compressible foam filler.

4.5.4.2 Cavity Closure Strip:

Proprietary 50mm x 15mm x 3000mm UPVC cavity closure profile strip.

4.5.4.3 Internal Corner Flashing:

Proprietary 50mm x 50mm x 2400mm Galvalume AZ150 corner flashing.

4.5.4.4 Joint Backing Strip Double Flange:

Proprietary double joining flange manufactured from 0.3mm BMT steel with Galvalume AZ150 corrosion resistant and bond breaker coating.

4.5.4.5 Control Joint internal Flashing:

Proprietary 85mm x 85mm - 0.35mm BMT steel with AZ150 corrosion resistant coating and powder coated finish.

Colour – Bronze, Silver, White

Colour:

4.5.4.6 Control Joint External Flashing:

Proprietary 85mm x 85mm - 0.35mm BMT steel with AZ150 corrosion resistant coating and powder coated finish.

Colour – Bronze, Silver, White

Colour:

4.5.4.7 Control Joint flashing:

Proprietary 35mm x 90.5mm x 3030mm long 0.35mm BMT steel with AZ150 corrosion resistant coating and powder coated finish.

Colour – Bronze, Silver, White

Colour:

4.5.4.8 50mm Horizontal Spacer

Proprietary 15mm x 50mm x 1200mm long extruded plastic strip

4.5.4.9 90mm Vertical Spacer:

Proprietary 15mm x 90mm x 2000mm long extruded plastic strip

4.5.4.10 Vertical Panel Clip Flashing:

Proprietary 50mm x 60mm galvalume AZ150 flashing.

4.5.4.11 Vertical Panel Clip:

Proprietary 62mm x 45mm x 15mm panel fixing clip manufactured from 'SuperDyma' corrosion resistant coated steel.

4.5.4.12 Vertical Starter Strip:

Proprietary 15mm offset from frame x 3030mm long strip manufactured from 1.2BMT steel with Galvalume AZ150 corrosion resistant coating.

4.5.4.13 Vertical Base Starter Strip:

Proprietary 95mm x 23mm x 3000mm long strip manufactured from 1.2mm BMT steel with Galvalume AZ150 corrosion resistant coating.

4.5.5 Co-operation

4.5.5.1 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, the assembly and installation of the Cemintel Territory External Vertical Cladding System to the required layout, details and tolerances.

4.5.6 Workmanship

4.5.6.1 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 of the Cemintel Territory External Vertical Cladding System shall only be carried out by experienced installers, familiar with the specified products and their installation techniques, in

accordance with the manufacturer's requirements and Technical Literature, and with the warranty requirements.

All installation techniques shall be exactly as recommended by 'CSR Cemintel'. All work shall be such as to leave a neat, efficient, robust and structurally sound installation, to the required standard and free from damage and defects.

Take all reasonable measures during fabrication and installation to protect the Cemintel Territory External Vertical Cladding System finish from damage and surface marking. Carry out routine cleaning of this work as necessary.

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

4.5.7 Delivery & Handling

4.5.7.1 Delivery & handling:

Take delivery of materials and accessories undamaged and in good condition. If materials and accessories are delivered damaged, record all damage with suitable photographic records and contact 'CSR Cemintel' within 5 working days to notify of this damage.

Reject any item found to be defective or damaged and contact the manufacturer/supplier for replacement.

Store components and accessories undercover in a secure and weatherproof space, off the floor, on a flat and level surface in accordance with the manufacturer's requirements. Ensure stored items are protected from damage and contamination and imposed loads until required for installation.

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

Should a problem be encountered with any Cemintel Territory External Horizontal Cladding System item during use or delivery, immediately contact 'CSR Cemintel' on 0800 999 277. Do not continue to use the item that is not performing to specification or expectation. Keep the item in question and where possible, the packaging and/or manufacturer's details.

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

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

Installers shall conform to all relevant WorkSafe NZ Guidelines and Codes of Practice http://www.worksafe.govt.nz - including the OSH Guidelines For the Provision of Facilities and General Safety in the Construction Industry.

4.5.8 Preparation

4.5.8.1 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.

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.

4.5.9 Installation

4.5.9.1 Installation:

Cemintel Territory External Vertical Cladding panels are to be installed true to line and level and fixed to specified wall system with either mounting clips and/or face fixings as detailed in the ‘technical literature’.

Ensure all bracing, wall wrap, ‘Rigid Air Barrier’, window, door, services penetrations, and other misc. work is complete and inspected as required before the installation of cladding system is applied.

Prior to installation, prime all site-cut panel edges with Cemintel Sealer to the directions noted in the ‘technical literature’ Cemintel cladding panels are to be joined to adjacent panels with Cemintel colour matched sealant to the details shown in the 'technical literature'

Finish Cemintel Territory External Vertical Cladding panels round window and door openings, and at wall/roof junctions, parapets, and at junctions with other building elements and cladding systems, to the details shown on the drawings.

Neatly form pipe or other penetration through Cemintel Territory External Vertical Cladding panels with an even margin all round and seal flush with the specified flexible sealant. Ensure that a pipe bandage is fitted to all pipes etc. to maintain weathertightness and air pressure resistance prior to installing the cladding system.

Fixing:

Refer to 'fixing' clause for details of fasteners required for different wall systems.

All cladding panels, packers, trims, flashings, and other ancillary components are to be 'fixed' to the requirements of the 'technical literature'.
Face fixed panels shall have the fasteners set just below the panel surface and flush filled with Cemintel Territory Putty filler. Spot prime 304 nail heads with an approved metal primer before the filler is applied. Complete the finished surfaces with the specified finish coats.

4.5.10 Fixing

4.5.10.1 Fixing to timber Frame - Backing strips & other non- proprietary components:

- For Timber frame use 1.6mm x 40mm long Galvanised clout

- For Steel frame use 6-gauge x 40mm long Class 3 self-drilling button head screw

- For H515 Top hat section use 8-gauge x 12mm long self-drilling button head screw

4.5.10.2 Face Fixing to Masonry Frame - Starter strip, clips & other components:

Cemintel self-drilling CSK self-embedding head screw with Cat5 Armagalv protection x 45mm long fixed in accordance with 'Technical literature'

4.5.10.3 Fixing to Masonry Frame - Starter strip, clips & other components:

Class 3 8-gauge self-drilling wafer head screw with galvanised protection x 12mm long fixed in accordance with 'Technical literature'

4.5.10.4 Fixing to timber Frame with Rigid Air Barrier or Bracing Sheet- Starter strip, clips & other components:

Cemintel galvanised steel screw with Cat5 Armagalv protection x 63mm long fixed in accordance with 'Technical literature'

4.5.10.5 Fixing to timber Frame - Starter strip, clips & other components::

Cemintel 410 graded stainless steel screw with coated protection x 35mm long fixed in accordance with 'Technical literature'

4.5.11 Primers & Sealant

4.5.11.1 Cemintel Edge Sealer:

Cemintel panel edge sealer compound applied in accordance with the 'technical literature'

4.5.11.2 Cemintel Primer:

Cemintel Primer applied in accordance with the 'technical literature'. Primer must be applied in-situ no less than 30 minutes and no more than 6 hours before application of the Cemintel colour matched sealant.

4.5.11.3 Cemintel Territory Putty:

Cemintel territory putty compound applied to exposed ‘Smartfit’ windows fixings and panel fixing holes in accordance with the 'technical literature

4.5.11.4 Cemintel 'colour matched' Sealant:

Cemintel colour matched sealant is to be applied in accordance with the 'technical literature'

4.5.12 Completion

4.5.12.1 Completion:

Check the Cemintel Territory External Vertical Cladding System 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 ‘CSR Cemintel’ requirements to the required standard. Replace Cemintel Territory External Vertical Cladding System 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 ‘CSR Cemintel’ Warranty.

Provide all necessary Producer Statements.

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.

Comply with all relevant provisions and recommendations of:

2311:2017(AS/NZS)	Guide to the painting of buildings
3604:2011(NZS)	Timber-framed buildings

5.3 Resene Construction Systems Plaster Cladding

5.3.1 Scope

All of the wall surfaces identified for Rockcote on the drawings, together with all associated flashings, reveals finishing and other details. Note that no substitutions are permissible for any of the products specified herein.

5.3.2 General

All materials and workmanship incorporated into the house construction by this subcontract shall be such as to qualify in every detail and respect for the Rockcote 15 year Product Performance Warranty and the Licensed Rockcote Plasterers 5 year Workmanship Warranty.

If the Cladding Plasterer considers that general conditions of previous work is unsatisfactory to ensure a proper finish for the cladding work required they shall give immediate notice to the Contractor or Designer as appropriate and shall not proceed until necessary improvements have been made. Failing such notice the Cladding Plasterer will not be relieved of the responsibility for a poor finish due to such unsatisfactory condition.
(and)
'The Contractor and Subcontractors affected shall be jointly and severally responsible for completion of the whole of the works in a completely watertight condition and shall therefore examine all details to be satisfied that this condition can be achieved. If any detail is considered unsatisfactory the Designer shall be immediately notified and they will then either interpret the detail to the Contractor's satisfaction, or accept responsibility for watertightness at the points in question, always assuming reasonable workmanship.'

5.3.3 Workmanship

All work shall be carried out by experienced and skilled PPCS (Proprietary Plaster Cladding Systems) Registered Tradesmen licensed to apply Rockcote Systems exterior cladding renders, and be in

accordance with best and latest trade practice. Ensure that all plant and tools are kept clean and free from earlier mixes.

Apply all materials and install all Rockcote and Resene sealers, renders and protective coatings in strict accordance with manufacturer's recommendations.

Carefully proportion each batch and thoroughly mix. No re-tempering of any partially set or dried material. Observe Rockcote specification requirements with regard working in direct sun and protecting work from rain or frost for 24 hours or until cured.

Arrange plastering sequence to avoid conspicuous join marks or badly set out joins in large surfaces. Properly cure all plaster to prevent shrinkage or druminess. Leave all plastered surfaces clean, sound, smooth, even and with a true finish, and free from blemishes of any kind.

5.3.4 Work

Arrange for all appropriate or required inspections by Rockcote Systems registered PPCS assessors to qualify for their 15 year warranty.

Submit a clearly identified 300 x 300mm sample of the selected texture finish and colour for signed approval of the Designer or Owner as appropriate, and do not proceed until this is returned.

Ensure that the work of other trades does not reduce the cladding to ground, deck or roof clearances that are required by the Code.

Clean up thoroughly on completion, and provide the producer statement and appropriate warranties to the main contractor. Provide on-going maintenance instructions to ensure that NZBC Durability requirements are met.

5.3.5 Preparation

Check that any other fixings, brackets or electrical or plumbing elements that in any way affect the cladding plaster system are correctly in place, are flashed or taped as required, and are appropriate for finish sealing.

Install pre-primed Rockcote uPVC flashings exactly as noted, detailed, or recommended, and saddle and apron flashings, balustrades and handrails junctions, etc. as detailed or required, using sealants, adhesives and fixings as recommended by Rockcote.

Prepare for control joints in the positions shown on the drawings and elsewhere as required to fully comply with Rockcote recommendations, and arrange for a Rockcote technical inspector to confirm that the control joints are in their appropriate positions and they are all that are required. Prepare drained movement junctions at all positions where the Rockcote abuts other materials.

Mask all adjacent windows, doors or other joinery, roofs, plumbing or electrical items, and pre-finished surfaces etc. that could possibly be marked by the render work, and use drop cloths and ground covers to keep the works area clean.

Immediately prior to applying coatings check the full substrate surfaces and brush, scrub, wash, or rasp as required to remove any dirt, dust, oxidation, formwork release agents or similar. Prime to improve adhesion or damp down to control suction before applying render on hard or smooth or absorbent surfaces.

5.3.6 Wall Structure/Substrate

Check all aspects of preparatory works, including but not limited to:

Check that the blockwork surface is straight, plumb and sound - have any damage remedied. With a straightedge check that the wall surface is sufficiently true to achieve the required Rockcote surface. Rub off any mortar fins.

Check that all builder supplied flashings, sealing tapes etc. at windows, doors, junctions, corners and penetrations are all correctly installed.

5.3.7 Installation

5.3.7.1 No substrate installation required - Concrete Block/Precast (plaster coating only)

Concrete Block and/or Precast/Tilt-up Concrete Panel substrate - plaster coating. No substrate installation required - plaster directly onto the substrate.

5.3.8 Mesh Coat

Mesh Coat applied to Concrete Block and/or Precast Panel substrate: Rockcote PM 100, applied with a notched trowel,
Plus - Rockcote LiteRock Solid Render, 8-10mm thickness minimum,
Plus - Rockcote Blue Mesh (170 g/m², 8 x 9mm mesh),
Plus - Rockcote PM 100 Quick Render 1-2mm (floated to true surface).

5.3.9 Finish

Provide details of your custom Finish or add a new clause option.

5.3.10 Protective Finish Coat

Provide details of your custom Protective Finish Coat or add a new clause option.

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:

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:

6.3.2 Requirements

6.3.2.1 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.

6.3.2.2 Warranty - applies to BRANZ Appraised Pink® Batts® Ceiling & Wall products

Pink® Batts® Lifetime Product Warranty:

- 50 Years Warranty for BRANZ Appraised Pink® Batts® ceiling and wall products installed according to the warranty conditions.
- Provide the Pink® Batts® Lifetime Product Warranty on the manufacturer's standard warranty form.
- Commence the warranty from the date of permanent installation.

6.3.2.3 Substitutions

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

The substitution of a specified Pink® Batts® product for an alternative Pink® Batts® branded product by the Installer (PinkFit® or other) 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 Pink® Batts® branded products to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Installer.

6.3.3 Underfloor Thermal Insulation

6.3.3.1 Pink® Batts® SnugFloor® R2.6 Narrow

Product code 7131451. A non-combustible, resin bonded fibrous glasswool insulation manufactured from over 80% New Zealand sourced recycled glass and cured urea extended phenolic resin. Suitable for use in timber-framed floors. R-value R-2.6. 110mm thick x 480mm wide x 1220mm long segments.

BRANZ Appraised for use as a thermal insulating material for timber framed floors in new and existing domestic buildings according to the conditions and limitations of BRANZ Appraisal No.632.

Pink® Batts® SnugFloor® R2.6 Narrow is licenced with Environmental Choice New Zealand: Thermal Building Insulant Licence No.2504017.

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

Installed Location:

6.3.4 Wall Thermal Insulation

6.3.4.1 Pink® Batts® Classic R1.8 Wall

Pink® Batts® Classic R1.8 Wall - product code 7127118. A non-combustible, resin bonded fibrous glasswool insulation manufactured from recycled and virgin glass and cured urea extended phenolic resin. R-value R-1.8. 90mm thick x 560mm 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

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

Installed Location:

6.3.4.2 Pink® Batts® Ultra® R2.8 Wall

Pink® Batts® Ultra® R2.8 Wall - product code 7127128. A non-combustible, resin bonded fibrous glasswool insulation manufactured from recycled and virgin glass and cured urea extended phenolic resin. R-value R-2.8. 90mm thick x 560mm 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® R2.8 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:

6.3.4.3 Pink® Batts® Ultra® R3.2 140mm Wall

Pink® Batts® Ultra® R3.2 140mm Wall - product code 7127132. 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 560mm 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 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:

6.3.5 Ceiling Thermal Insulation

6.3.5.1 Pink® Batts® Classic R1.8 Ceiling

Pink® Batts® Classic R1.8 Ceiling - product code 7110118. A non-combustible, resin bonded fibrous glasswool insulation manufactured from recycled and virgin glass and cured urea extended phenolic resin. R-value R-1.8. 95mm thick x 432mm wide x 1220mm long segments.

Pink® Batts® ceiling insulation is a lightweight flexible glasswool insulation products designed to:
- thermally insulate ceilings in new homes, be retrofitted into existing homes without insulation, or over existing insulation for better performance;
- fit easily into standard ceiling constructions, or be easily cut to fit non-standard constructions;
- meet the requirements of the New Zealand Building Code for different designs and environments.

Pink® Batts® Classic R1.8 Ceiling is BRANZ Appraised - refer to BRANZ Appraisal No.238. Refer to Product data sheet - https://www.pinkbatts.co.nz/assets/Uploads/Downloads/Roof-and-RTA-Data-Sheet-February-2023.pdf

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

Installed Location:

6.3.5.2 Pink® Batts® Superbatts® R5.0 Ceiling

Pink® Batts® Superbatts® R5.0 Ceiling - product code 7113150. A non-combustible, resin bonded fibrous glasswool insulation manufactured from recycled and virgin glass and cured urea extended phenolic resin. R-value R-5.0 - 225mm thick x 460mm wide x 1220mm long segments.

Pink® Batts® ceiling insulation is a lightweight flexible glasswool insulation product designed to:

- thermally insulate ceilings in new homes, be retrofitted into existing homes without insulation, or over existing insulation for better performance;
- fit easily into standard ceiling constructions, or be easily cut to fit non-standard constructions;
- meet the requirements of the New Zealand Building Code for different designs and environments.

Pink® Batts® Ultra® R5.0 Ceiling is BRANZ Appraised - refer to BRANZ Appraisal No.238.

Pink® Batts® Ultra® R5.0 Ceiling is licenced with Environmental Choice New Zealand: Thermal

Building Insulants Licence No.2504017. Refer to data - https://www.pinkbatts.co.nz/assets/Uploads/Downloads/Roof-and-RTA-Data-Sheet-February-2023.pdf

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

Installed Location:

6.3.6 Acoustic Insulation

6.3.6.1 Floor - Pink® Batts® Silencer® Midfloor

Pink® Batts® Silencer® Midfloor - product code 7310051. A non-combustible, resin bonded fibrous glasswool insulation manufactured from recycled and virgin glass and cured urea extended phenolic resin. IIC Rating 43 (*construction: 200 x 50mm floor joist @450mm crs, 20mm particle board flooring, 10mm GIB standard plasterboard ceiling lining fixed to ceiling battens @ 400mm crs)*. R-value R-3.6 (estimate only). 150mm thick x 432mm wide x 1140mm long segments.

Pink® Batts® Silencer® Midfloor insulation is specifically designed to reduce noise transmission between floors.

Refer to product data - https://www.pinkbatts.co.nz/assets/Acoustic-Silencer-Product-Sheet-FEB20-RevD.pdf

Installed as inter-storey floor acoustic insulation to the locations shown on the drawings in accordance with the manufacturer's requirements.

Installed Location: as preferred by client. Use Midfloor insulation between ground floor and Level 1 on Units 3-4, 7-8.

6.3.7 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.

6.3.8 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

6.3.9 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

6.3.10 Installation

6.3.10.1 General

Install Pink® Batts® Insulation in accordance with NZS 4246.
All installation work shall be carried out 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

6.3.10.2 Pink® Batts® SnugFloor®

Install Pink® Batts® SnugFloor® Insulation in accordance with NZS 4246.

All installation work shall be carried out 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

6.3.10.3 Pink® Batts® Wall

Install Pink® Batts® Wall Insulation in accordance with NZS 4246.

All installation work shall be carried out 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

6.3.10.4 Pink® Batts® Ceiling - General Suspended Ceiling

Install Pink® Batts® Ceiling Insulation in accordance with NZS 4246.

All installation work shall be carried out 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

6.3.10.5 Pink® Batts® Ceiling - Truss/Framed Roof

Install Pink® Batts® Ceiling Insulation in accordance with NZS 4246.

All installation work shall be carried out 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

6.3.10.6 Pink® Batts® Ceiling - Armstrong Suspended Ceiling

Carefully lay Pink® Batts® BIB insulation blanket over the Armstrong suspended ceiling lining at right angles to the ceiling supports, ensuring there is no undue compression, gaps, creases, tucks or folds in the insulation.

Limit BIB insulation to a maximum of 1.27 kg/m2 - R2.6 (maximum) with the grid supporting the weight of the insulation. Where a higher total R value is required provide additional insulation between or below the roof structure on mesh as required by the drawings.

Butt insulation, without leaving gaps, against wall lining along suspended ceiling edges - where necessary, drape insulation into open wall cavities, trim around wall framing as necessary.

Firmly butt all insulation blanket joins together, ensuring there are no gaps, and maintain full thickness of the insulation to ensure maximum thermal performance.

Ensure that the appropriate clearances are maintained for electrical equipment, heating and ventilation equipment, heated flues and pipes, etc. Where possible, place insulation beneath electrical wiring and plumbing. Take extreme care when working around exposed electrical cables - treat all cables as live.

6.3.10.7 Pink® Batts® Silencer® Midfloor

Install Pink® Batts® Silencer® Midfloor in accordance with NZS 4246.

All installation work shall be carried out 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

6.3.11 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.

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:

1170.0:2002 SUPP1(AS/NZS)	Structural design actions - General principles - Commentary
1170.2:2011(AS/NZS)	Structural design actions - Wind actions
2295:2006(NZS)	Pliable, permeable building underlays
2728:2013(AS|NZS)	Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements
2904:1995(AS/NZS)	Damp-proof courses and flashings
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
NZBC F2	Hazardous Building Materials
NZBC G12	Water Supplies
NZMRM Code of Practice	NZ Metal Roof and Wall Cladding Code of Practice - Version 3.0
SNZ HB 3604:2011	Timber-framed buildings - Selected extracts from NZS 3604:2011

7.3 Thermakraft Underlay, DPM, DPC & Tapes

7.3.1 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:

7.3.2 Requirements

7.3.2.1 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.

7.3.2.2 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.

7.3.2.3 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.

7.3.3 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:

7.3.4 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.

7.3.5 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:

7.3.6 Underlay Support

Thermakraft Thermastrap. A 19mm wide x 0.4mm thick polythene embossed rigid strap. For use as a support for non-self support roof underlays, and to restrict the bellowing of flexible wall underlays in drained cavities. Suitably tensioned when installed to avoid any sagging and to keep the flexible underlay in a flat plane. Installed at right angles to roof purlins or walls studs, at maximum 300mm centres.

Application/Use:

7.3.7 Window Flashing Tape

7.3.7.1 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:

7.3.8 Underlay Penetration Seals

7.3.8.1 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'.

7.3.9 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.

7.3.10 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.

7.3.11 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.

7.3.12 Preparation

7.3.12.1 General

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

Do not commence installation until all necessary preliminary works by others is 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 is complete.

Supporting timber framing shall comply with NZS 3604, or with NZS 3603 and AS/NZS 1170 for specific design, and have a maximum moisture content of 20% at the time of cladding installation. Allow LOSP treated timber to sufficiently flash-off before installing Thermakraft building underlays and foils.

Supporting light structural steel framing shall comply with the requirements of AS/NZS 4600 or the NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria. Comply with the light structural steel framing fabricator's specifications and requirements for fixing cladding and roofing components.

Supporting heavy steel structures shall comply with NZS 3404.

7.3.12.2 Under-Slab Basecourse

Under-Slab Basecourse - prior to laying under-slab DPM, check all aspects of preparatory works, including but not limited to:

- Check that the under-slab basecourse has been correctly laid and compacted as specified.
- Check that the surface has been properly prepared and compacted to the required standard, and is smooth and flat.
- Ensure any sand blinding is free of aggregate, sharp protrusions.
- Ensure the final surface is free of hollows and ponded water prior to laying the DPM.

7.3.12.3 Under-Slab Tidy Slab

Under-Slab Tidy Slab - prior to laying under-slab DPM, check all aspects of preparatory works, including but not limited to:
- Check that the tidy slab blinding has been laid and finished to the required standard.
- Ensure the finished tidy slab is dry and free of all loose aggregate and sharp protrusions.
- Ensure the final surface is free of hollows and ponded water prior to laying the DPM.

7.3.12.4 Wall Framing

Wall Framing - prior to wall underlay installation check all aspects of preparatory works, including but not limited to:
- Check that wall framing has been completed as shown on the drawings, complies with the relevant design and construction standards.
- Check that framing is securely fixed, true to line and plane, is plumb and level where required, and is trimmed at edges, openings and penetrations as required.
- Check that there are no projections due to structural bracing and bracketry etc.
- Check that the required clearances from ground, deck, balcony or lower roof to the bottom edge of the underlay/cladding are in accordance with NZBC E2/AS1.

Aluband tapes to be used in conjunction with IBSRigidRap and GIB Weatherline RAB boards.

7.3.12.5 Roof Structure

Roof Structure - prior to roof underlay installation check all aspects of preparatory works, including but not limited to:
- Check that the supporting purlins or battens are set-out 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 complete, and dressed back and adhered to a solid substrate along the roof edge as shown on the approved drawings.
- Check that all trimming for roof penetrations, all roof/wall junction blocking, and all necessary work by other trades is complete.
- Check that solid sarking required for fully-supported roofing is complete and securely fixed in accordance with the approved drawings.
- Check that any required anti-ponding boards for tiled roofs have been correctly installed to a minimum 5° (1:12) fall to the eaves gutter.

7.3.13 Installation - Wall Underlay

7.3.13.1 Aluband Window Flashing Tape

Install Aluband Window Flashing Tape in accordance with the manufacturer's requirements, to the locations and details shown on the approved drawings.

Window Sills:
- Fit Thermakraft Corner Moulded Piece to the bottom corners of the opening.

- Cut Aluband Window Flashing Tape to the length of the sill trimmer plus an additional 400mm.
- Apply the tape over the underlay along the sill trimmer, with the back edge flush with the inside edge of the framing, and returned minimum 200mm up both trimming studs.
- Fold the tape minimum 50mm over the face of the underlay on the outside of the opening.
- Press the tape firmly in place over the underlay to ensure a continuous weathertight seal is maintained.

Window & Door Lintels:
- Install Aluband Window Flashing Tape to the top corners of framed window and door openings, over the underlay and 200mm along the lintel and 200mm down the trimming stud, with the back edge flush with the inside edge of the framing.
- Fold the tape minimum 50mm over the face of the underlay on the outside of the opening.
- Press firmly in place over the underlay to ensure a weathertight seal.
- Apply a 100mm strip of Aluband Window Flashing Tape at 45° over the taped outside face of each corner.

Avoid joining Aluband Window Flashing Tape. Where necessary, form joins with minimum 100mm overlap, keep any required joining to an absolute minimum.

Do not over-stretch tape during installation, and ensure adequate adhesion and weathertightness is maintained against the underlay.

Do not leave Aluband Window Flashing Tape exposed to weather and UV light for more than 42 days after installation - replace with new window flashing tape if 42 day's exposure is exceeded.

7.3.14 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.

7.4 Stratco Profiled Metal Roof Cladding

7.4.1 Scope

Supply and install Stratco - Profiled Metal Roofing, 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 Stratco - Profiled Metal Roofing technical literature and publications (check

http://www.stratco.co.nz or call (0800) 787 282 for the latest editions), and other relevant product manufacturers' recommendations.

No substitutions are permitted for Stratco - Profiled Metal Roofing.

For the purpose of this specification, Stratco - Profiled Metal Roofing is referred to as 'Profiled Metal Roofing', and all 'Stratco' associated technical literature and publications, including the 'Stratco Product Technical Statement', installation instructions and drawings, are collectively referred to as the 'technical literature'.

Extent of work:

The following is a list and/or general description of the extent of the Stratco - Profiled Metal Roofing works, which are more specifically defined in the contract documents, required for the completion of the contract works:

7.4.2 Requirements

7.4.2.1 Defective materials & workmanship:

Should defective materials and/or work be found at any time before the final acceptance of the work, it shall be rejected. Rejected Stratco - Profiled Metal Roof Cladding materials and work shall be repaired and/or replaced to the satisfaction of the Contract Administrator without delay and at no additional cost to the Principal.

7.4.2.2 Quality assurance:

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

7.4.2.3 Inspections & reporting:

Inspections shall take place at each of the stages as scheduled in the building consent. Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection.

Carry out all necessary pre-installation and installation inspections for each area of the works.

Complete all necessary pre-installation checklists prior to installation, and all necessary installation checklists.

Complete all necessary final checklists and installation sign-off certificates before handing over completed work.

7.4.2.4 Producer statement (PS3):

The Stratco - Profiled Metal Roofing installer shall furnish a fully completed PS3 Producer Statement (Construction) at time of application for Code Compliance Certificate. The Producer Statement shall accurately reflect the scope of the installation of the Profiled Metal Roofing in accordance with the consented drawings and specifications.

7.4.2.5 Samples:

As required, provide samples of the specified Stratco - Profiled Metal Roof cladding for verification by the Contract Administrator.

7.4.2.6 Substitutions:

The Stratco - Profiled Metal Roof Cladding shall be as specified herein and on the design drawings. The substitution of the Stratco - Profiled Metal Roof Cladding for an alternative brand is not permitted under any circumstances.

The substitution of the specified Stratco - Profiled Metal Roof Cladding or ancillary component for an alternative Stratco - Profiled Metal Roofing system or ancillary component 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 an alternative Stratco - Profiled Metal Roofing or ancillary component to satisfy design, performance and compliance requirements, then the cost of these shall be borne by the Contractor.

7.4.2.7 Warranty:

Warranty for Manufacturer or Supplier:

- 15 years minimum for coatings

Commence the warranty from the date of installation.

Warranty - Installer/ Applicator:

Warrant this work under normal environmental and use conditions against weatherproofing failure.

Workmanship – Refer to Supplier.

7.4.2.8 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.

7.4.3 Profile

Stratco Superdek roof sheet - a trapezoidal profile; 28mm rib height and 750 - 760mm effective cover based on the selected BMT.

Material type - Refer to ‘Roof Sheet Material’ clause.
Thickness - 0.40mm BMT(G550), 0.55mm BMT(G550), 0.9mm BMT (aluminium)
Windload – Low, Medium, High, Very High, Extra High.
Mass (KG/M2)- Refer to ‘Stratco’
Minimum pitch - 3 degrees

- 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 and step to gutter.
- Sheet ends must be stop-ended under flashings.

Installed in accordance with the manufacturer's requirements to the locations and details shown on the drawings.

Installed Location:
Thickness:

7.4.4 Roof Sheet Material

COLORSTEEL® Maxam™ to selected BMT. Pre-painted hot dipped aluminium/zinc/magnesium alloy coated steel coil, with a minimum coating weight of 150g/m², conforming with AS/NZS 2728 Class 6. COLORSTEEL®

Colour:

7.4.5 Roof Ancillary Components & Accessories

Fit and lap roofing underlay over the netting/mesh or use a self-supporting underlay. Lay underlay horizontally or vertically with a 150mm side lap, over-sailing the spouting and/or gutters by 10mm, in accordance with 'technical literature'.

Non self-supporting underlay must be supported by hexagonal wire mesh, safety mesh or alternative support, as specified and/or as shown on the approved 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 NZMRM Code of Practice.

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

Cladding screw 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 cladding profile and material and the supporting structure material; all in accordance with the NZMRM Code of Practice and E2 External Moisture.

COLORSTEEL Altimate® must be installed with an aluminium screw or stainless-steel screw. Stainless Steel screws must be installed through a clearance hole. All fasteners to be fitted with a bonded sealing washer.

Metal Flashings. Profiled metal cladding flashings shall be fabricated from material with the same coating as the cladding material, to maintain durability and compatibility requirements. Flashings shall be 0.55BMT G300 steel or H34 Aluminium coated to the same standards as the profiled cladding sheets, and notched/scribed when installed across the cladding profile or provided with a soft edge – in accordance with COLORSTEEL® and NZMRM Code of Practice requirements.

Flashings, flashing fastenings and fastening frequency shall be in accordance with the NZMRM Code of Practice.

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

Rivet Fastenings. Rivets shall be sealed aluminium minimum 4mm diameter.

Use only neutral-curing silicone or MS polymer sealant, compatible with the specified metal cladding and flashing materials and finishes, that is suitable for the required application and use in accordance with the sealant manufacturer's instructions and to NZMRM Code of Practice requirements. All sealed joints must be mechanically fastened, and excess sealant neatly removed to prevent unnecessary dirt build-up. Sealant shall only be used to seal between two metal surfaces, do not fill holes or gaps with sealant.

Proprietary Collar Flashings. EDPM or silicone-polymer proprietary flexible collar flashings for weatherproofing cladding-penetrating pipes/flues/ducts. Sized to suit the applicable pipe/flue/duct and installed in strict accordance with the manufacturer's requirements and the NZMRM Code of Practice.

Profiled Foam Closure Strip. Non-bituminous, compressible, closed-cell foam strips profiled to fit the specified cladding profile. Installed to the details shown on the drawings and in accordance with COLORSTEEL® and NZMRM Code of Practice recommendations.

7.4.6 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 assembly and installation of the Stratco Profiled Metal Roof Cladding to the required layout, details and tolerances.

7.4.7 Qualifications & 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 suitably qualified to install Profiled Metal Roof

Cladding, to fully comply with all warranty requirements in accordance with the manufacturer's requirements.

All cutting, fixing and installation techniques, fastenings and sealants shall be exactly as recommended by and 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 NZMRM Code of Practice Section 4.10. Isolate dissimilar materials (metal and non-metal) in close proximity as necessary by fitting separator strips. Place isolators between metals and treated timber or cement-based materials.

Do not allow unpainted lead-sheet or copper materials to come in contact with, or allow water run-off from these onto Zincalume or galvanised materials.

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

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 suitably qualified to install Profiled Metal roof Cladding, to fully comply with all warranty requirements in accordance with the manufacturer's requirements.

Installers of COLORSTEEL Dridex® shall be supervised by an accredited COLORSTEEL Dridex® installer. Installers of COLORSTEEL Maxam® shall be supervised by an accredited COLORSTEEL Maxam® installer.

All cutting, fixing and installation techniques, fastenings and sealants shall be exactly as recommended by and 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 NZMRM Code of Practice Section 4.10. Isolate dissimilar materials (metal and non-metal) in close proximity as necessary by fitting separator strips. Place isolators between metals and treated timber or cement-based materials. Do not allow unpainted lead-sheet or copper materials to come in contact with, or allow water run-off from these onto Zincalume or galvanised materials.

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

7.4.8 Delivery & Handling

Store profiled metal roof cladding, flashings and accessories clear of level ground, on bearers at evenly spaced centres as recommended by the NZMRM Code of Practice. 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.

7.4.9 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.

7.4.10 Installation

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 Working at Heights.

Prevent contact with, or run-off from, incompatible materials in accordance with the recommendations in the NZMRM Code of Practice.

Protect the finished surface from damage at all times; replace the whole sheet where a significant depth of the finish has been damaged (including flashings).

Accurately set-out the planned cladding layout prior to fixing to ensure true and accurate cladding lines and incorporate correct relationships with other design features shown on the drawings; maintain this accurate set-out throughout installation.

Keep cladding lines consistent and true along the roof; with side-laps of sheets to be straight, true and accurately aligned up and down. Check for and eliminate any creep and/or spread of sheets during installation.

Cut metal cladding and flashings by shear only - do not use abrasive cutting tools. Do not use black lead pencils for marking pre-finished metal cladding and flashings.

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

Install fasteners in a straight line with a consistent fastening pattern on each sheet in accordance with 'technical literature' requirements. Fasteners are to be set using a snug fitting socket and a setting tool that does not unduly damage the finish coating of the screw. Depth of setting is to be sufficient to achieve slight compression of the sealing washer without distorting the profile or the sealing washer itself.

Aluminium rivets are to be sealed type minimum 4mm diameter. Clip-fastened sheets shall be fixed with concealed proprietary fastening clips appropriate for the cladding profile and material, substrate/structure and the environment in accordance with the NZMRM Code of Practice recommendations.

Install flashings as detailed on the drawings and in accordance with the Zealand Metal Roofing Code of Practice. All flashings shall be neatly formed and finished, securely fastened to the structure, weatherproof, and lapped such that any water will run down to the exterior. For highly visible flashings, plan each flashing joint and/or junction with specific regard to aesthetic requirements. Penetration flashings shall be as per the design details and shall not rely solely on silicone sealant to achieve weathertightness of the flashing.

Handle sheets carefully to avoid scratching and denting. Do not walk on cladding sheets prior to installation. Remove strippable film, if applied, immediately after installation of roof cladding to avoid resin staining. Ensure sealant is trapped between joint surfaces and not exposed to the visual surface.

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 Working at Heights.

Prevent contact with, or run-off from, incompatible materials in accordance with the recommendations in the NZMRM Code of Practice.

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).

Accurately set-out the planned cladding layout prior to fixing to ensure true and accurate cladding lines and incorporate correct relationships with other design features shown on the drawings; maintain this accurate set-out throughout installation.

Keep cladding lines consistent and true along the roof; with side-laps of sheets to be straight, true and accurately aligned up and down. Check for and eliminate any creep and/or spread of sheets during installation.

Cut metal cladding and flashings by shear only - do not use abrasive cutting tools. Do not use black lead pencils for marking pre-finished metal cladding and flashings.

Screw fastenings for pre-painted metal must be pre-painted prior to installation for an accurate colour match.

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

Install fasteners in a straight line with a consistent fastening pattern on each sheet in accordance with 'technical literature' requirements. Fasteners are to be set using a snug fitting socket and a setting tool that does not unduly damage the finish coating of the screw. Depth of setting is to be sufficient to achieve slight compression of the sealing washer without distorting the profile or the sealing washer itself.

Aluminium rivets are to be sealed type pre-painted to match cladding, minimum 4mm diameter. Clip-fastened sheets shall be fixed with concealed proprietary fastening clips appropriate for the cladding profile and material, substrate/structure and the environment in accordance with the NZMRM Code of Practice recommendations.

Install flashings as detailed on the drawings and in accordance with the Zealand Metal Roofing Code of Practice. All flashings shall be neatly formed and finished, securely fastened to the structure, weatherproof, and lapped such that any water will run down to the exterior. For highly visible flashings, plan each flashing joint and/or junction with specific regard to aesthetic requirements. Penetration flashings shall be as per the design details and shall not rely solely on silicone sealant to achieve weathertightness of the flashing.

Handle sheets carefully to avoid scratching and denting. Do not walk on wall cladding sheets prior to installation. Remove strippable film, if applied, immediately after installation of roof cladding to avoid resin staining. All accessories are to be colour matched prior to installation, do not use colour match paint for repairing any blemishes. Ensure sealant is trapped between joint surfaces and not exposed to the visual surface.

7.4.11 Compatibility

Ensure material is isolated from incompatible materials. It must not be in contact with, or receive run off from, less noble metals such as copper, brass and lead. It should not be in wet contact with stainless steel. Sustained wet contact with timber, either treated or untreated, must be avoided. For more information, see the COLORSTEEL® Installers Guide (available at www.colorsteel.co.nz).

7.4.12 Completion

Check that the Stratco Profiled Metal Roof Cladding 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. Ensure that the work of other trades does not reduce the clearances of the cladding to ground, deck or roof that are required by the NZ Building Code.

Leave all work complete and weathertight and to the required standard in accordance with the New Zealand Metal Roofing Code of Practice.

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

Maintenance should be carried out in accordance with Stratco's maintenance requirements.