**NOTE: Green text is for instruction only and not to be included in the final specification**

**1 CARPENTRY**

**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:

NZS1170.5:2004 Structural design actions - Earthquake actions - New Zealand

**1.3 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.

**1.4 Supercrete™ Acoustic Wall Systems**

**1.4.1 Scope**

Supply and install the selected Supercrete™ Acoustic Wall Systems to the locations identified on the drawings, complete with system components and accessories. All aspects of this work shall be in complete accordance with the Supercrete™ Acoustic Wall Systems Design & Installation Guide (check www.superbuild.co.nz, or call 0800 464 787 for the latest editions), other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for Supercrete™ Acoustic Wall Systems.

**1.4.2 Supercrete™ Acoustic Wall System**

Supercrete™ Acoustic Wall System 'Type 1'. A fire-rated inter-tenancy acoustic wall system, incorporating 75mm thick Supercrete™ Autoclaved Aerated Concrete (AAC) panels, for single or multi-storey residential buildings. The Supercrete™ Panels are centralized between two 100mm (nominal) thick insulated timber or steel stud wall frames that are lined with a single layer of plasterboard.

Suitable for load bearing and non-load bearing timber or steel framed walls (the Supercrete™ Panels are non-load bearing components).

STC rating: 61 - 65, depending on plasterboard lining thickness.

Fire rating: 90/90/90.

Total wall thickness: 305mm - 331mm - depending on frame size, separation gap width and lining thickness - 10mm or 13mm.

**Supercrete Acoustic Wall System 'Type 1' Assembly**

|  |  |
| --- | --- |
| **Construction** | **Note** |
| Plasterboard lining | Single layer, screw/adhesive fixed to framing |
| 100mm nominal thickness wall framing | Timber or steel stud frame |
| 90mm thick, R2.0, glasswool insulation | Installed within the framing cavity |
| 10mm - 20mm separation gap | Between the frame and 75mm Supercrete™ Panel |
| 75mm Supercrete™ Panel | Non-load bearing application |
| 10mm - 20mm separation gap | Between the frame and 75mm Supercrete™ Panel |
| 100mm nominal thickness wall framing | Timber or steel stud frame |
| 90mm thick, R2.0, glasswool insulation | Installed within the framing cavity |
| Plasterboard Lining | Single layer, screw/adhesive fixed to framing |

Location: List locations on building of the Supercrete™ AWS Type 1 Walls

**1.4.3 System Components**

**Supercrete™ Panels** - 75mm. 600mm wide x 75mm thick, standard square profile edge, steel mesh reinforced, lightweight Autoclaved Aerated Concrete (AAC) panels. Available in 2400mm, 2550mm, 2700mm, 2850mm and 3000mm lengths. 525kg/m³ nominal dry density. Non-toxic and non-combustible.

Installed vertically (end-on) and fixed in accordance with the selected Supercrete™

Acoustic Wall System type requirements.

**Corrosion Protection Coating.** Applied to exposed reinforcing steel of Supercrete™ Panels as an anticorrosion treatment.

Choose one or more of the following paragraphs as appropriate to the detailing on the drawings

DPC - 'Type 1' Wall - Base Connection Options 1 & 2

**Damp-proof Course** - for Supercrete™ Acoustic Wall System 'Type 1' - Base Connection Options 1 & 2.  Bituminous or hi-impact polyethylene DPC in accordance with AS/NZS 2904, installed as a bond breaker between the bedding mortar along the base of the Supercrete™ Panels and the concrete slab.  The width of the DPC shall match the width of the Supercrete™ Panels.  The concrete slab surface must be straight and flat, and free of ridges and high points and debris, prior to installing the DPC.

##### Bedding Mortar - 'Type 1' Wall - Base Connection Options 1 & 2

**Supercoat™ Superbase Render Mortar**- for Supercrete™ Acoustic Wall System 'Type 1' - Base Connection Options 1 & 2.  A cement-based, polymer modified adhesive.  Used as a levelling bed mortar, nominal 10mm thick, between the Supercrete™ Panels and the concrete slab or DPC slip layer (all other panel joints must be adhered with Supercrete™ Superbond Adhesive).
Use only when ambient temperatures are between 5°C - 25°C.  Supplied as a bagged dry powder and mixed on site with clean, uncontaminated water in accordance with the manufacturer's requirements.

##### Slotted Base Angle - 'Type 1' Wall - Base Connection Option 2

**Slotted Base Angle** - for Supercrete™ Acoustic Wall System 'Type 1' - Base Connection Option 2.  50mm x 50mm x 1.2mm thick, galvanised slotted steel channel, fixed to the concrete slab at maximum 600mm centres with a M8 masonry anchor and 25mm x 3mm round washer.  Installed continuously along the wall length as lateral support to the base of Supercrete™ Panels.  The panels are fixed through the angle slots into the panel with 12-11 x 65mm hex. head screws at maximum 600mm centres - two per panel, minimum 50mm from the panel edge.

##### Base Channel - 'Type 1' Wall - Base Connection Option 3

**Base Channel** - for Supercrete™ Acoustic Wall System 'Type 1' - Base Connection Option 3.  76mm wide x 32mm x 0.75mm thick, galvanised steel channel, fixed to the concrete slab with masonry anchors at maximum 600mm centres with a M8 masonry anchor and 25mm x 3mm round washer.  Installed continuously along the wall length as lateral support to the base of Supercrete™ Panels.  The panels are seated (not fastened) into the channel after installing the base channel.

**Supercoat™ AAC Superbond Adhesive**.  A cement-based, polymer modified adhesive.  Applied as a thin bed adhesive to the edges of the Supercrete™ Panels at all panel-to-panel joints (except control joints).  Use only when ambient temperatures are between 10°C - 30°C, including the entire curing period.  Supplied as a bagged dry powder and mixed on site with clean, uncontaminated water in accordance with the manufacturer's requirements.

**Wall Brackets**- for Supercrete™ Acoustic Wall System 'Type 1' - Frame-to-Panel Tie Connection.  75mm x 40mm x 50mm wide x 1.6mm thick pre-drilled proprietary brackets.  Manufactured from Aluminium, Galvanised Steel or Zincalume.
Fasten to timber framing with two 12-11 x 25mm, hex. head, self-drilling screws, or with two 30mm x 3.15mm galvanised bracket nails.
Fasten to steel framing with two 10-16 x 16mm, hex. head, self-drilling screws.
Fasten to Supercrete Panels with two 12-11 x 50mm, hex. head, self-drilling screws, or with two 12-8 x 60mm, pan head, self-drilling screws.

Bracket material:

**Promat Promaseal® IBS Rod** - for Supercrete™ Acoustic Wall System 'Types 2, 3 & 4' - Fire Protection Strip.  22mm diameter proprietary fire protection foam strip for sealing joints and gaps in walls and floors.  Installed in a continuous strip in the gap between the edge of the Supercrete™ Panels and the underside of the deflection head track.  Allow continuous rod at transitions.  Where jointing is unavoidable, overlap and splice ends minimum 200mm - do not joint rod at bends or transitions.

**Fire Rated/Acoustic Rated Sealant** - Holdfast Firecryl FR Fire Retardant Sealant.  Used to seal Supercrete™ Acoustic Wall System corner junctions, plasterboard wall lining joints to floors, soffits and door frames, movement control joints, deflection head track soffit junctions, and around pipes, conduits, brackets, etc. that penetrate the Supercrete™ Acoustic Wall System.
Applied to the specified FRR and/or STC requirements in accordance with the sealant manufacturer's recommendations and with Supercrete™ Acoustic Wall installation requirements.

**Steel Stud Partitioning** - for Supercrete™ Acoustic Wall System 'Types 1, 2, & 3' - refer to separate section for steel stud partitioning specification requirements.

**Insulation** - refer to Insulation for specification requirements.

**Plasterboard** - refer to separate section for plasterboard specification requirements.

**1.4.4 Co-operation**

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

Co-ordinate with other trades to ensure that the Supercrete™ Acoustic Wall System correctly allows for door installation, and for the locations of pipes, outlets, cables and other fittings installed by others, and to install Supercrete™ Acoustic Wall System as required.

**1.4.5 Workmanship**

Where required by the NZ Building Amendment Act 2012 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

Installation of Supercrete™ Acoustic Wall Systems shall be carried out by qualified and experienced tradespersons, familiar with the specified products and installation techniques, to fully comply with all Superbuild International Ltd warranty requirements and in accordance with the Supercrete Acoustic Wall Design and Installation Guide and as shown on the drawings.

Carry out all necessary installation inspections in accordance with the Supercrete™ Acoustic Wall Systems Installation Checklist to fully comply with the manufacturer's warranty requirements as the works progress.

All cutting, jointing, fixing, sealing and finishing techniques of the Supercrete™ Acoustic Wall System materials and components shall be exactly as recommended by the manufacturer. All work shall be such as to leave a neat, efficient, robust and installation.

**1.4.6 Delivery & Handling**

Store Supercrete™ Panels on the delivery pallets, clear of the ground on a flat, even and level surface - do not stack pallets more than two high - keep materials and products dry and protected from damage and contamination at all times.

Store Supercoat™ adhesive compounds under cover out of direct sunlight, keep dry and protect from damage and moisture at all times.

Do not used damaged or faulty materials or products, or products that are beyond their designated shelf life. Reject panels that are structurally damaged and contact Superbuild International Ltd for replacement.

Handle all products and materials in accordance with the manufacturer's requirements and in a manner that prevents damage or deterioration to the material. Do not install Supercrete™ Panels in wet conditions.

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.

Cut and drill Supercrete™ Panels outside in open air or in a well-ventilated space. Site-cut

Supercrete™ Panels shall have any exposed steel reinforcing treated with metal primer prior to installing the panel.

**1.4.7 Preparation**

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

Check that the wall framing of the wall that the Supercrete™ Panels are to be fastened to and supported by is complete and able to support the lateral load of the panels.

Check that the concrete surface where the wall is to be constructed is clean, straight and true to line and level, and free of ridges, irregularities and defects - carry out any remedial work to the surface as necessary.

Check that all movement control joints/saw cuts in the floor slab are located to the layout and dimensions shown on the drawings.

**1.4.8 Installation**

Construct the Supercrete™ Acoustic wall System exactly in accordance with the Design & Installation Guide and as shown on the approved design drawings.
As shown on the drawings; confirm the layout and location of the Supercrete™ Acoustic Walls, movement control joints, and any specific detailing requirements prior to installation.
Accurately cut the panels to suit the layout allowing for installation a tolerances, and apply a corrosion protection coating to any exposed reinforcing steel on the panels before installation.
Supercrete™ Panels shall be installed vertically (end-on) and fully bonded at vertical panel joints with Supercoat™ Superbond Adhesive - except at control joints.  Panel joints shall not exceed 3mm in width.

Choose one or more of the following paragraphs

##### 'Type 1' Wall - Base Connection Option 1

Accurately set-out the line of the Supercrete™ Panels and framed walls to the layout and dimensions shown on the drawings.

Fasten the wall brackets to the erected wall framing at the required set-out, with brackets aligned plumb with the wall line of the Supercrete™ Panels and positioned within 50mm either side of the centreline of each panel.

Lay the DPC slip layer onto the concrete slab along the line of the Supercrete™ Panel wall - overlap any DPC joints to ensure that the panels will be completely separated from the concrete slab.

Lay a nominal 10mm thick levelling bed of Supercoat™ Superbase Render Mortar over the DPC slip layer - limit mortar laying to three panels at any-one-time.

Install the first Supercrete™ Panel vertically on-end, plumb and true to line and plane - with the base of the panel set into the levelling bed mortar and with the wall brackets fastened to the panel face.
Apply a coat of Supercoat™ Superbond Adhesive to the edge of the next panel and position the panel in place with the base set into the bedding mortar and with the vertical joint finished tight and parallel with full contact of the adhesive along joint.
Fix the panel in place to the wall brackets, plumb and true to line and plane.
Finish adhesive joints flush and even with the panel face - remove excess adhesive and droppings as each panel is installed.
This process is repeated until the panel installation is complete.

Form door openings and movement control joints to the locations and details shown on the drawings.  Vertical control joints shall be nominal 10mm wide and spaced at maximum 6000mm intervals on any single wall element, and shall be in accordance with Supercrete™ design requirements for wall intersections and corner junctions.  Finish vertical control joints with the specified fire/acoustic sealant applied over a PEF backing rod.

When constructing a multi-storey wall, stack the Supercrete™ Panels vertically and form a 10mm wide horizontal control joint between the panels at joist level.  Pack panels apart with fibre cement (or non-combustible equivalent) packers and seal both sides of the control joint with the specified fire/acoustic sealant over a PEF backing rod.  Do not use Supercoat™ Superbond Adhesive to seal/fix panels along the horizontal control joint.

Finish Supercrete™ Panels at openings, parapets, and at junctions with other building elements exactly as detailed.

Carefully form any necessary pipe, conduit or other services penetrations through the Supercrete™ Panel with an even 10mm margin all round.  Neatly seal the penetration flush to the panel surface with the specified fire/acoustic sealant over a PEF backing rod.

Build the second framed wall, closing off the inner Supercrete™ Panel wall, to the correct set-out, and tie the Supercrete™ Panels to the frame with the wall brackets fastened to the panels and framing at the required set-out and positioned within 50mm either side of the centreline of each panel.

Carry out an inspection of the wall installation to ensure that all construction work - and work by others, including electrical and cabled services and plumbing services - is complete, before closing off the wall framing with insulation and plasterboard wall linings.

Install fibreglass wool insulation to the framed wall cavities - refer to Insulation for specification requirements.

Install plasterboard wall linings to the framed walls - refer to other specification section for specification requirements.
Carefully form any necessary pipe, conduit or other services penetrations through finished plasterboard with an even 10mm margin all round.  Neatly seal the penetration flush with the finished plasterboard surface with the specified fire/acoustic sealant over a PEF backing rod.

Complete the Supercrete™ Acoustic Wall Systems Checklist.

##### 'Type 1' Wall - Base Connection Option 2

Accurately set-out the line of the Supercrete™ Panels and framed walls to the layout and dimensions shown on the drawings.

Lay the DPC slip layer onto the concrete slab along the wall line - overlap any DPC joints to ensure that the panels will be completely separated from the concrete slab.

Fasten the base angle over the DPC slip layer to the slab true to line, with fastenings at maximum 600mm centres and maximum 100mm from the angle ends.

Fasten the wall brackets to the wall framing at the required set-out, with brackets aligned plumb with the flange/upstand of the base angle and positioned within 50mm either side of the centreline of each panel.

Lay a nominal 10mm thick levelling bed of Supercoat™ Superbase Render Mortar over the DPC slip layer - limit mortar laying to three panels at any-one-time.

Install the first Supercrete™ Panel vertically on-end, plumb and true to line and plane, with the base of the panel set into the levelling bed mortar and with the wall brackets fastened to the panel face.
Ensure that there is not build-up of mortar between the panel and the flange of the base angle and that the panel is tight against the flange.
Fasten the base of the panel, through the angle slots and into the panel, with 12-11 x 65mm hex. head screws at maximum 600mm centres - two per panel, minimum 50mm from the panel edge.
Apply a coat of Supercoat™ Superbond Adhesive to the edge of the next panel and position the panel in place with the base set into the bedding mortar and with the vertical joint finished tight and parallel with full contact of the adhesive along joint.
Fix the panel in place to the base channel and the wall brackets, plumb and true to line and plane.
Finish adhesive joints flush and even with the panel face - remove excess adhesive and droppings as each panel is installed.
This process is repeated until the panel installation is complete.

Form door openings and movement control joints to the locations and details shown on the drawings.  Vertical control joints shall be nominal 10mm wide and spaced at maximum 6000mm intervals on any single wall element, and shall be in accordance with Supercrete™ design requirements for wall intersections and corner junctions.  Finish vertical control joints with the specified fire/acoustic sealant applied over a PEF backing rod.

When constructing a multi-storey wall, stack the Supercrete™ Panels vertically and form a 10mm wide horizontal control joint between the panels at joist level.  Pack panels apart with fibre cement (or non-combustible equivalent) packers and seal both sides of the control joint with the specified fire/acoustic sealant over a PEF backing rod.  Do not use Supercoat™ Superbond Adhesive to seal/fix panels along the horizontal control joint.

Finish Supercrete™ Panels at openings, parapets, and at junctions with other building elements exactly as detailed.

Carefully form any necessary pipe, conduit or other services penetrations through the Supercrete™ Panel with an even 10mm margin all round.  Neatly seal the penetration flush to the panel surface with the specified fire/acoustic sealant over a PEF backing rod.

Build the second framed wall, closing off the inner Supercrete™ Panel wall, to the correct set-out, and tie the Supercrete™ Panels to the frame with the wall brackets fastened to the panels and framing at the required set-out and positioned within 50mm either side of the centreline of each panel.

Carry out an inspection of the wall installation to ensure that all construction work - and work by others, including electrical and cabled services and plumbing services - is complete, before closing off the wall framing with insulation and plasterboard wall linings.

Install fibreglass wool insulation to the framed wall cavities - refer to Insulation for specification requirements.

Install plasterboard wall linings to the framed walls - refer to other specification section for specification requirements.
Carefully form any necessary pipe, conduit or other services penetrations through finished plasterboard with an even 10mm margin all round.  Neatly seal the penetration flush with the finished plasterboard surface with the specified fire/acoustic sealant over a PEF backing rod.

Complete the Supercrete™ Acoustic Wall Systems Checklist.

##### 'Type 1' Wall - Base Connection Option 3

Accurately set-out the line of the Supercrete™ Panels to the layout and dimensions shown on the drawings.

Fasten the base channel to the slab true to line along the Supercrete™ Panel wall line, with fastenings at maximum 600mm centres and maximum 100mm from the channel ends.

Fasten the wall brackets to the wall framing at the required set-out, with brackets aligned plumb with the flange/upstand of the base channel and positioned within 50mm either side of the centreline of each panel.

Install the first Supercrete™ Panel vertically on-end, plumb and true to line and plane, with the base of the panel seated in the base channel and with the wall brackets fastened to the panel face - do not fasten the panel(s) to the base channel.
Apply a coat of Supercoat™ Superbond Adhesive to the edge of the next panel, and position the panel in place with the base seated in the channel and with the vertical joint finished tight and parallel with full contact of the adhesive along joint.
Fix the panel in place to the wall brackets, plumb and true to line and plane.
Finish adhesive joints flush and even with the panel face - remove excess adhesive and droppings as each panel is installed.
This process is repeated until the panel installation is complete.

Form door openings and movement control joints to the locations and details shown on the drawings.  Vertical control joints shall be nominal 10mm wide and spaced at maximum 6000mm intervals on any single wall element, and shall be in accordance with Supercrete™ design requirements for wall intersections and corner junctions.  Finish vertical control joints with the specified fire/acoustic sealant applied over a PEF backing rod.

When constructing a multi-storey wall, stack the Supercrete™ Panels vertically and form a 10mm wide horizontal control joint between the panels at joist level.  Pack panels apart with fibre cement (or non-combustible equivalent) packers and seal both sides of the control joint with the specified fire/acoustic sealant over a PEF backing rod.  Do not use Supercoat™ Superbond Adhesive to seal/fix panels along the horizontal control joint.

Finish Supercrete™ Panels at openings, parapets, and at junctions with other building elements exactly as detailed.

Carefully form any necessary pipe, conduit or other services penetrations through the Supercrete™ Panel with an even 10mm margin all round.  Neatly seal the penetration flush to the panel surface with the specified fire/acoustic sealant over a PEF backing rod.

Build the second framed wall, closing off the inner Supercrete™ Panel wall, to the correct set-out, and tie the Supercrete™ Panels to the frame with the wall brackets fastened to the panels and framing at the required set-out and positioned within 50mm either side of the centreline of each panel.

Carry out an inspection of the wall installation to ensure that all construction work - and work by others, including electrical and cabled services and plumbing services - is complete, before closing off the wall framing with insulation and plasterboard wall linings.

Install fibreglass wool insulation to the framed wall cavities - refer to Insulation for specification requirements.

Install plasterboard wall linings to the framed walls - refer to other specification section for specification requirements.
Carefully form any necessary pipe, conduit or other services penetrations through finished plasterboard with an even 10mm margin all round.  Neatly seal the penetration flush to the finished plasterboard surface with the specified fire/acoustic sealant over a PEF backing rod.

Complete the Supercrete™ Acoustic Wall Systems Checklist.

**1.4.9 Completion**

Carry out a final inspection immediately after installation.
Check that the Supercrete™ Acoustic Wall System has been installed correctly in accordance with the manufacturer's Design & Installation Guide and as shown on the drawings, and that the walls are plumb and straight and true to line.  Check that all control joints and penetrations are sealed and completed correctly.
Check for damaged and defective work - replace or repair as necessary.

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

Provide the Supercrete™ Acoustic Wall Systems Installation Producer Statement.