**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 4'.  A fire-rated acoustic wall system, incorporating two layers of 75mm thick Supercrete™ Autoclaved Aerated Concrete (AAC) panels, for interior walls in commercial and residential buildings.  The two layers of the Supercrete™ Panels are separated by a 30mm central cavity and are lined with a single layer of plasterboard.
Suitable for non-load bearing applications only.
STC rating: 62.
Fire rating:  -/120/120.
Total wall thickness:  200mm.

**Supercrete Acoustic Wall System 'Type 4' Assembly**

|  |  |
| --- | --- |
| **Construction** | **Note** |
| Plasterboard lining | Single layer, screw/adhesive fixed to Supercrete™ Panel |
| 75mm Supercrete™ Panel | Non-load bearing application |
| 30mm minimum separation gap/cavity | Between the two layers of Supercrete™ Panel |
| 50mm thick glasswool insulation | Installed in the cavity between the Supercrete™ Panel layers |
| 75mm Supercrete™ Panel | Non-load bearing application |
| Plasterboard Lining | Single layer, screw/adhesive fixed to Supercrete™ Panel |

Location: List locations on building of the Supercrete™ AWS Type 4 Walls

**1.4.3 System Components**

Choose either of the following paragraphs as appropriate to the detailing on the drawings

Supercrete™ Panel - Square Profile Edge

**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.

Supercrete™ Panel - T&G Profile Edge

**Supercrete™ Panels** - 75mm.  600mm wide x 75mm thick, T&G 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.

**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.

**Supercoat™ Superbase Render Mortar** - for Supercrete™ Acoustic Wall System 'Type 2, 3, & 4'.  A cement-based, polymer modified adhesive.  Used as a levelling bed mortar, nominal 10mm thick, between the Supercrete™ Panels and the concrete slab (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.

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

Slotted Base Angle - 'Type 4' Wall - Base Connection

**Slotted Base Angle** - for Supercrete™ Acoustic Wall System 'Type 4' - Base Connection.  50mm x 50mm x 1.2mm thick, galvanised slotted 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 fixed through the slots of the angle into the panel with 14-10 x 65mm hex. head screws at maximum 600mm centres - two per panel, minimum 50mm from the panel edge.

Deflection Head Channel - 'Type 4' Wall, max. 3200mm high

**Deflection Head Channel Top Track** - for Supercrete™ Acoustic Wall System 'Type 4' with a maximum height of 3200mm.  76mm wide x 50mm x 0.75mm thick, galvanised steel channel, fixed to the concrete soffit with masonry anchors at maximum 600mm centres.  Installed continuously along the wall length as lateral support to the top of Supercrete™ Panels.  The panels are fitted into the channel, with a maximum 15mm head gap, and without being fastened to the channel - do not fasten the channel flange to the panels.

Deflection Head 'J'-Channel - 'Type 4' Wall, max. 3200mm high

**Deflection Head 'J'-Channel Top Track** - for Supercrete™ Acoustic Wall System 'Type 4' with a maximum height of 3200mm.  76mm wide x 100mm/50mm x 0.75mm thick, galvanised steel unequal channel, fixed to the concrete soffit with masonry anchors at maximum 600mm centres.  Installed continuously along the wall length as lateral support to the top of Supercrete™ Panels.  The panels are fitted into the channel, with a maximum 15mm head gap, and without being fastened to the channel - do not fasten the channel flange to the panels.

Deflection Head Angle - 'Type 4' Wall, over 3200mm high

**Deflection Head Steel Angle** - for Supercrete™ Acoustic Wall System 'Type 4' - with a height greater than 3200mm.  Two, parallel, 50mm x 50mm x 1.2mm thick, galvanised steel angles, fixed to the concrete soffit with masonry anchors at maximum 600mm centres.  Installed continuously along the wall length as lateral support to the top of Supercrete™ Panels.  The panels are fitted between the two flanges, with a maximum 15mm head gap, and without being fastened to either angle - do not fasten the angles to the panels.

Slotted Angle Head Track - 'Type 4' Wall, over 3000mm & fixed at head

**Slotted Steel Angle Head Track** - for Supercrete™ Acoustic Wall System 'Type 4' - with a height greater than 3000mm, and with top-fixed panels.  75mm x 50mm x 1.2mm thick, galvanised slotted steel angle, fixed to the concrete soffit with masonry anchors at maximum 600mm centres.  Installed continuously along the wall length as lateral support to the top of Supercrete™ Panels.  The panels are installed with a maximum 15mm head gap, and fastened to the flange with 14-10 x 65mm hex. head screws at maximum 600mm centres - two per panel, 50mm from the panel edge.

**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 concrete surfaces that the wall is to be built on/under is clean, straight and true to line and level, and free of ridges, irregularities and defects - carry out any remedial work to the surfaces as necessary.
Check that all movement control joints 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 4' Wall - max. 3200mm high

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

Fasten the specified deflection head channels to the soffit true to line along the line of the Supercrete™ Panel walls, with fastenings at maximum 600mm centres and maximum 100mm from the channel ends.  Mitre joint the channel at any change of direction; all joints must be tightly butted together without any gaps.  Seal all channel joints, and any gap between the soffit and the channel, with the specified fire/acoustic sealant.  For uneven and irregular soffits, seat each channel on two parallel beads of the specified fire/acoustic sealant.

Fasten the base angles to the slab along the line of the Supercrete™ Panel walls, with fastenings at maximum 600mm centres and maximum 100mm from the angle ends.

Erect the Supercrete™ Panels to one wall first and then to the other.  Lay a nominal 10mm thick levelling bed of Supercoat™ Superbase Render Mortar along the base line of the first wall - limit mortar laying to three panels at any-one-time.

Install the first Supercrete™ Panel, plumb and true to line and plane, vertically on-end with the top edge fitted into the deflection head channel, and the base of the panel set into the bedding mortar.
Ensure that there is not build-up of mortar between the base of the panel and the base angle flange, and that the panel is tight against the flange.
While positioning the panel in place, fit the Proseal® IBS Rod between the top of the panel and the deflection head channel.
Fasten the base of the panel, through the base angle slots and into the panel, with 14-10 x 65mm hex. head screws at maximum 600mm centres - two per panel, minimum 50mm from the panel edge - do not fasten the top of the panel to the deflection head channel.
Apply a coat of Supercoat™ Superbond Adhesive to the edge of the next panel and position the panel in place with the top edge fitted into the deflection head channel, and the base set into the bedding mortar.
Fit the Proseal® IBS Rod between the top of the panel and the deflection head channel.
Joint the panels together with the vertical joint finished tight and parallel with full contact of the adhesive along joint.
Fasten the panel in place to the base angle, plumb and true to line and plane - do not fasten the top of the panel to the deflection head channel.
Finish adhesive joints flush and even with the panel faces removing any excess adhesive and droppings as each panel is installed.
Fasten at the base of the panels of the second wall through the panel and into the slotted base angle with 14-10 x 90mm hex. head screws at the same layout.
Install fibreglass wool insulation to the cavity between the panels as the panels of the second wall are installed - refer to Insulation for specification requirements.
This process is repeated until the panel installation is complete for the first wall and then to the second wall.

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.

Finish Supercrete™ Panels at openings 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.

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 installing plasterboard wall linings.

Install plasterboard wall linings to the Supercrete™ Panel 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.

Seal the 10mm gapped edges of the plasterboard wall linings to floors, soffits, internal corners, and door frames flush with the finished plasterboard surface with the specified fire/acoustic sealant.

Complete the Supercrete™ Acoustic Wall Systems Checklist.

'Type 4' Wall - over 3200mm high with Deflection Head

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

Fasten the specified deflection head angles to the soffit true to line along the line of the Supercrete™ Panel walls, with fastenings at maximum 600mm centres and maximum 100mm from the angle ends.  Mitre joint the angle at any change of direction; all joints must be tightly butted together without any gaps.  Seal all angle joints, and any gap between the soffit and the angle, with the specified fire/acoustic sealant.  For uneven and irregular soffits, seat the angle on a bead of the specified fire/acoustic sealant.

Fasten the base angles to the slab along the line of the Supercrete™ Panel walls, with fastenings at maximum 600mm centres and maximum 100mm from the angle ends.

Erect the Supercrete Panels to one wall first and then to the other.  Lay a nominal 10mm thick levelling bed of Supercoat™ Superbase Render Mortar along the base line of the first wall - limit mortar laying to three panels at any-one-time.

Install the first Supercrete™ Panel, plumb and true to line and plane, vertically on-end with the top edge fitted between the deflection head tangles, and the base of the panel set into the bedding mortar.
Ensure that there is not build-up of mortar between the base of the panel and the base angle flange, and that the panel is tight against the flange.
While positioning the panel in place, fit the Proseal® IBS Rod between the top of the panel and the deflection head angle.
Fasten the base of the panel, through the base angle slots and into the panel, with 14-10 x 65mm hex. head screws at maximum 600mm centres - two per panel, minimum 50mm from the panel edge - do not fasten the top of the panel to the deflection head angles.
Apply a coat of Supercoat™ Superbond Adhesive to the edge of the next panel and position the panel in place with the top edge fitted between the deflection head angles, and the base set into the bedding mortar.
Fit the Proseal® IBS Rod between the top of the panel and the deflection head angle.
Joint the panels together with the vertical joint finished tight and parallel with full contact of the adhesive along joint.
Fasten the panel in place to the base angle, plumb and true to line and plane - do not fasten the top of the panel to the deflection head angles.
Finish adhesive joints flush and even with the panel faces removing any excess adhesive and droppings as each panel is installed.
Fasten at the base of the panels of the second wall through the panel and into the slotted base angle with 14-10 x 90mm hex. head screws at the same layout.
Install fibreglass wool insulation to the cavity between the panels as the panels of the second wall are installed - refer to Insulation for specification requirements.
This process is repeated until the panel installation is complete for the first wall and then to the second wall.

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.

Finish Supercrete™ Panels at openings 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.

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 installing plasterboard wall linings.

Install plasterboard wall linings to the Supercrete™ Panel 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.

Seal the 10mm gapped edges of the plasterboard wall linings to floors, soffits, internal corners, and door frames flush with the finished plasterboard surface with the specified fire/acoustic sealant.

Complete the Supercrete™ Acoustic Wall Systems Checklist.

'Type 4' Wall - over 3200mm high with Fixed Head

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

Fasten the specified head track angle to the soffit true to line along the line of the Supercrete™ Panel walls, with fastenings at maximum 600mm centres and maximum 100mm from the channel ends.  Mitre joint the channel at any change of direction; all joints must be tightly butted together without any gaps.  Seal all angle joints, and any gap between the soffit and the angle, with the specified fire/acoustic sealant.  For uneven and irregular soffits, seat the angle on a bead of the specified fire/acoustic sealant.

Fasten the base angles to the slab along the line of the Supercrete™ Panel walls, with fastenings at maximum 600mm centres and maximum 100mm from the angle ends.

Erect the Supercrete Panels to one wall first and then to the other.  Lay a nominal 10mm thick levelling bed of Supercoat™ Superbase Render Mortar along the base line of the first wall - limit mortar laying to three panels at any-one-time.

Install the first Supercrete™ Panel, plumb and true to line and plane, vertically on-end with the top edge fitted against the head track angle, and the base of the panel set into the levelling bed mortar.
Ensure that there is not build-up of mortar between the base of the panel and the base angle flange, and that the panel is tight against the flange.
Fasten the panel, through the slotted base and head angles and into the panel, with 14-10 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 top edge fitted against the head track angle, and the base set into the bedding mortar.
Joint the panels together with the vertical joint finished tight and parallel with full contact of the adhesive along joint.
Fasten the panel in place to the base angle and slotted head angle, plumb and true to line and plane.
Finish adhesive joints flush and even with the panel faces removing any excess adhesive and droppings as each panel is installed.
Seal flush the head gap between the top of the panels and the head track angle with the specified fire/acoustic sealant over a PEF backing rod.
Fasten the panels of the second wall through the panel and into the base and head angles with 14-10 x 90mm hex. head screws at the same layout.
Install fibreglass wool insulation to the cavity between the panels as the panels of the second wall are installed - refer to Insulation for specification requirements.
This process is repeated until the panel installation is complete for the first wall and then for the second wall installation.

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.

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

Carefully form any necessary pipe, conduit or other services penetrations through the Supercrete™ Panels 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.

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 Installing plasterboard wall linings.

Install plasterboard wall linings to the Supercrete™ Panel 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.

Seal the 10mm gapped edges of the plasterboard wall linings to floors, soffits, internal corners, and door frames flush with the finished plasterboard surface with the specified fire/acoustic sealant.

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.