

# Supercrete<sup>TM</sup>

Sustainable Cost Effective Construction & Coating Systems



## Panel Fences Brochure

### Sound Insulation • Quality Privacy • Fire Resistant



**Supercoat<sup>TM</sup>**

**100% NZ**  
Owned & Operated

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## What are Supercrete™ Panel Fences?

Supercrete™ Panel Fences are made from 75mm thick precast sheets of Supercrete™ lightweight autoclaved aerated concrete (AAC). These panels are located in reinforced concrete posts, cast in place with specially designed steel formwork. The fences have excellent noise blocking properties, are fast to construct, giving the appearance of solid masonry, at a fraction of the cost.

The versatility of Supercrete™ AAC allows it to be easily worked with normal carpentry tools, to either produce unique designs, or to construct one of the standard designs shown here.

## Benefits

- **Excellent Acoustic Properties** - Adding a Supercrete™ 75mm Panel Fence to problem noise areas greatly reduces sound levels in outdoor living spaces and enhances the overall performance of the acoustic design for a property. These great looking fences help to reduce noise before it reaches your Supercrete™ Panel clad building. This combination significantly reduces traffic noise for home owners on busy roads.
- **Fast to Construct** - Construction rates of up to 30 metres per day for two people, once the initial moving strip has been laid.
- **Great Price** - Supercrete™ Panel Fences are typically more cost effective than timber framed fences with light fibre cement or ply sheeting.
- **Adaptable** - Customizing the fence designs or creating your own, is as simple or involved as you wish to make it, with the full range of Supercrete™ Block and Panel products available for differing effects.
- **Solid** - Supercrete™ Panel Fences are stronger than most other forms of fence construction.
- **Easy** - Construction can be carried out by any accomplished homebuilder or tradesman by hiring the

formwork. Alternatively, construction can be arranged for you, by your local Supercrete™ Distributor.

- **Attractive** - Supercoat™ Coating Systems provide an ideal finish for Supercrete™ fences, with the versatility to produce smooth or textured surfaces.
- **Permanent** - Supercrete™ Panel Fences are constructed completely from inert mineral materials and cannot rot or decay.

## Components

The method of construction is shown in Details 1 & 2.

**Supercrete™ Panels** are 75mm thick with a single layer of longitudinal and transverse reinforcing through the centre. The panels are dimensionally very accurate and are available in 600mm or 300mm heights. This fence system uses 2400mm long panels except in very high wind zones.

Panels are easily cut using a segmented diamond blade in a portable saw. Circular curves can be cut with a tungsten grit or a diamond tipped saber saw. Panels typically weigh only 65 kg and can be easily handled by two people.

**Supercrete™ Block** is used for column caps and decorative embellishments. The block is available in a variety of thicknesses from 50 to 300mm and all are 600mm long by 250mm high. The block is easily cut with a handsaw, and can be carved or routed to shape, and worked with any normal carpentry tool.

**Supercoat™ AAC Superbond Adhesive** is used to glue the horizontal edges of panels together. This is a modified cement mortar supplied in powder form in 25 kg bags. It is mixed to a creamy consistency and applied using a broad knife or notched trowel, with finished joints being only 2 to 3mm thick.

**Post Formwork** is made from 3mm galvanized steel sheet bent to shape. One former is used on each side of the panels to clamp them in place during pouring. The two formers are held together by sleeved M12 through bolts. Brackets welded to the back of the formwork are used to locate a threaded prop on each side for accurately positioning the formwork vertically.

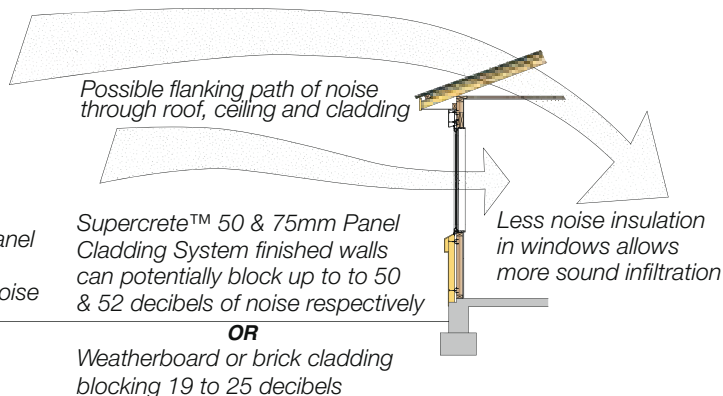
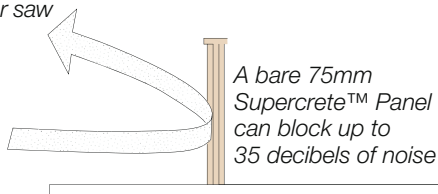
## Typical noise levels and paths.

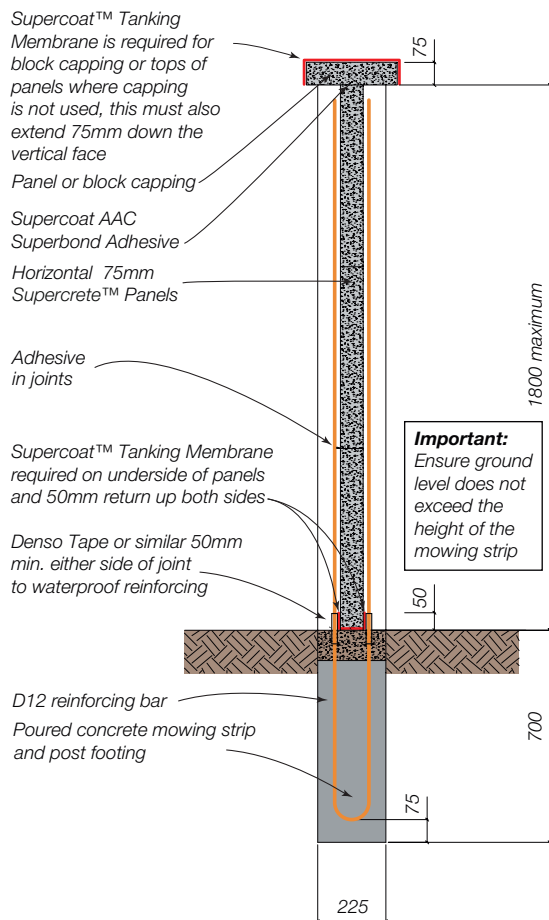
### TYPICAL TRAFFIC NOISE – 12 m FROM ROAD EDGE

60 dBa 2 lane urban road 6,000 vehicles/day @ 50km/hr  
66 dBa 4 lane busy urban road 20,000 vehicles/day @ 60km/hr  
68 dBa 4 lane motorway 25,000 vehicles/day @ 100km/hr

### OTHER NOISE

88 to 94 dBa Lawnmower  
100 to 104 dBa circular saw





**Detail 1. Typical cross-section of fence.**

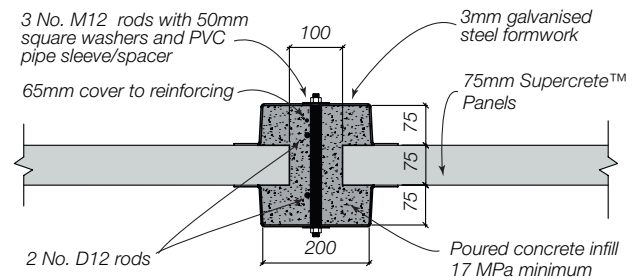
**Supercoat™ Coating Systems.** A variety of Supercoat™ Coating Systems are available from your local Supercrete Distributor. Please visit [www.superbuild.co.nz](http://www.superbuild.co.nz) to locate your local Distributor to discuss the various finishing options available.

## Design

Supercrete™ Panel fences to a height of 1.8m with a post spacing of 2.5m can be used in all New Zealand wind zones except for the Very High and Extra High Wind Speed classification in NZS 3604. The latter requires that the post spacing be reduced to 1.8m. This is assuming good ground conditions for post installation. If the ground strength is in doubt, advice should be sought from a qualified engineer or soils expert.

Fence height can be varied from 600mm to 1800mm in 300mm modules, using 300 or 600mm high panels. The finished post size is 225mm deep by 200mm wide.

The details show a 225mm wide mowing strip poured integral with the post footings. This can be wider, but the 225mm width does enable the formwork to be easily located transversely with its outer edge on the edge of the mowing strip.



**Detail 2. Typical cross-section of post.**

Suggestions for the different fence styles are shown. These are all made from combinations of Supercrete™ Panel and Block. Once the basic panel and posts are constructed, all embellishment and decoration is just glued on using Supercoat™ AAC Superbond Adhesive so the final appearance can be as simple or intricate as desired.

A bare 75mm Supercrete™ Panel has an approximate STC rating of 35 i.e. it can reduce noise levels by 35 decibels. However, this is dependant on the source of the noise, whether from above or below the fence, the frequency of the noise, and whether there are any flanking paths for the noise to travel around the end of the fence.



# Construction

After setting out, the mowing strip is excavated and boxed. Post centres are then marked on the boxing and post foundations excavated by hand or using a motorized posthole borer. Normally, postholes should be 700mm below ground level for a 1.8m high fence, and a minimum of 200mm diameter; but this is dependant on soil type and condition. D12 rods bent into a U shape are then lowered into the post holes and held in place by tying to cross pieces on top of the formwork. Care is needed in placing these rods to ensure that they are at exactly 2.5m centres and that they are exactly in the centre of the formwork. The rods should be 85mm centre to centre. Denso Tape or similar should be wrapped around the bars for 50mm above and below the level of the top of the mowing strip to protect reinforcing at the joint.

The post footings and mowing strip are then filled with standard 17 MPa concrete and floated off. Areas where the posts are to be poured on top should be roughened.

After the concrete has hardened, one side of the post formers are positioned on the footing, and held up with the



threaded props. The formers are placed off vertical a few degrees away from the fence centerline. All formers should be coated with a mould release agent.

The underside and a 50mm return up both sides of the panels sitting on the footing should be coated with Supercoat™ Tanking Membrane waterproofing agent. The lowest panel is lifted into place and leant back on to the formers - it may be necessary to wedge the bottom of the panel to guarantee that it leans against the former. The panel should be placed longitudinally 50mm past the edge of the post mould. Supercoat™ AAC Superbond Adhesive is then trowelled on top of the panel and the next panel is placed on top, also leaning back on to the post formers. The next panel is done similarly.



Once the top panel is placed, the second post former is positioned at the end from which the fence is being built. M12 threaded rods are placed through the holes in the formers. These rods should be sleeved with PVC pipe to enable removal after pouring. Nuts and washers are used to loosely clamp the forms together and once the fence has been brought vertical using the screw props, these nuts are tightened.

The next set of panels is then placed in position and the whole process repeated. When all panels are in place, or when all formers have been used, the post forms are filled with 17 MPa concrete and lightly vibrated. Forms should ideally be left in place for a minimum of 7 days. If removed earlier, measures should be taken to keep the concrete moist, either by wrapping the posts, or with sprinklers, for the balance of the 7 days.

Note that corner or angle posts may require special formwork either from timber or from bent up steel sheet.

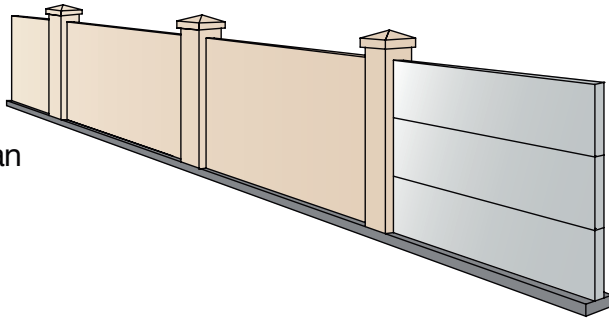
Cappings on top of the fence, and/or decorative features are cut to size and glued in place using Supercoat™ AAC Superbond Adhesive.

When the posts are cured and the panels dry, the Supercoat™ Coating System of choice can be applied.

# Design Suggestions

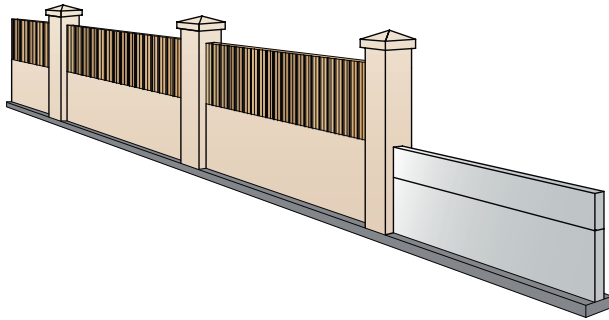
(Named after famous historic walls)

The Hadrian



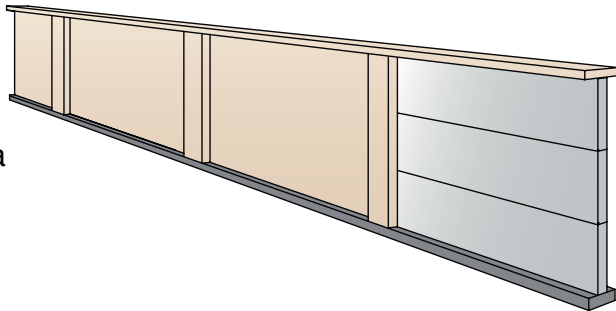
Basic 3 panel high fence with post capping from Supercrete™ Block

The Avila



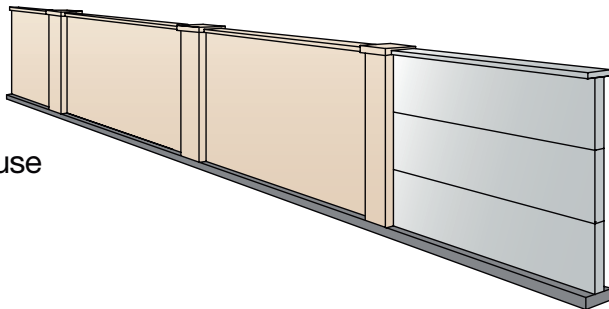
Half height fence with infill panels from timber or colorsteel. Fastenings for infill panels can be cast into concrete when forming posts

The Lucca



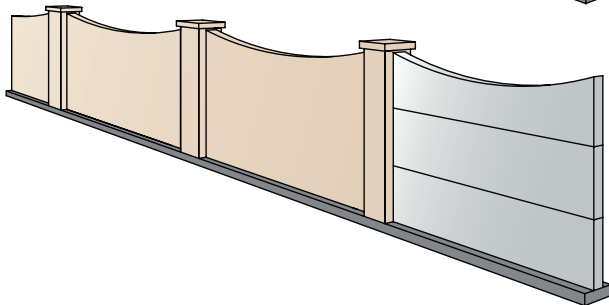
Three panel high fence with 300 x 75mm panel capping continuous along top

The Syracuse



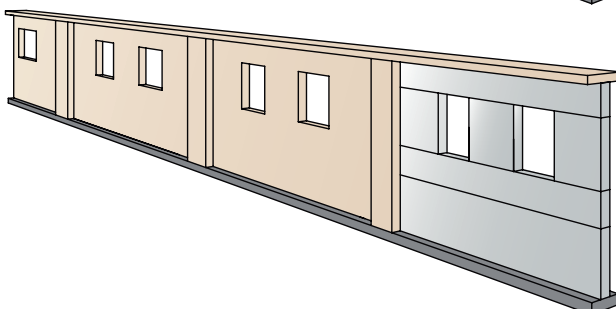
Three panel high fence with 300 x 275 x 75mm Supercrete™ Panel cappings on posts and 200 x 50mm block cappings on top of panels

The Fez



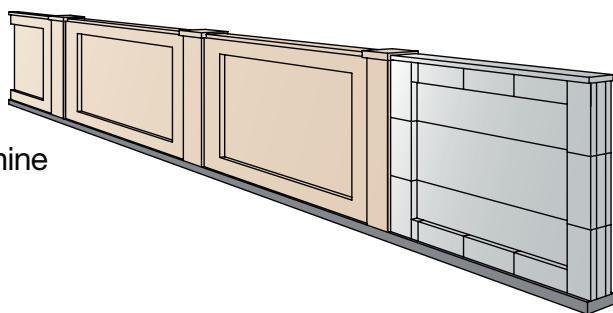
Three panel high fence with top panel cut to concave curve using a sabre saw. Post cappings from 75mm Supercrete™ Panel

The Floyd



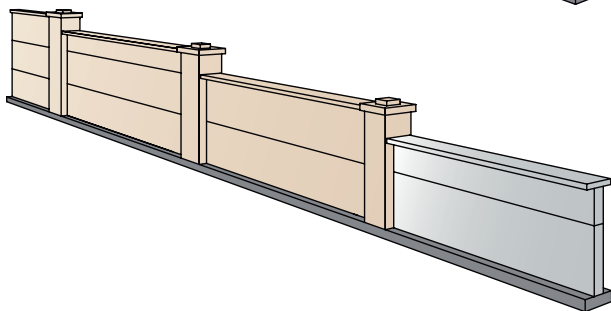
Windows cut into fence by casting end panels into posts and centre panel glued in place with stainless steel locating dowels to panels at top and bottom. Opening height is adjusted using 300mm high panels. Capping from 300 x 75mm Supercrete™ Panel

The Antonine



Three panel high fence with border accents from 200 x 50mm Supercrete™ Block. Post cappings from 300 x 275 x 75mm Supercrete™ Panel and panel capping from 200 x 50mm Supercrete™ Block

The Tiryns



Varying heights formed from 300mm and 600mm panels. Cappings from Supercrete™ Block on Supercrete™ Panel

**Note:** If required for appearance, two thicknesses of panel can be glued together with joints staggered. Overall thickness of posts will increase to 300mm.

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