

Litecrete Residential Wall Panels

Litecrete precast residential wall panels have been designed to offer a durable alternative to traditional house construction methods. Litecrete precast panels form an integral wall - solid, continuous and airtight. Litecrete is manufactured using pumice as an aggregate, which reduces the weight of the concrete yet achieves 12 MPA strength. The air cells in the pumice, plus the induced air entrainment, provide excellent insulating properties. Litecrete is manufactured under strict quality-controlled factory conditions, delivered to site and rapidly installed. Various thicknesses can be manufactured to order, from a minimum of 150 mm, depending upon the climate zone (see INSULATION section). Panels have fully embedded steel reinforcing. Maximum size panel is 7 metres x 3.5 metres and can be used for single-storey or two-storey applications.



Durability

Litecrete does not rot, harbour mould or mildew, split or crack. When used and installed in accordance with the limitations and instructions of the manufacturer, the specifically designed components of the Litecrete wall panel system can be expected to meet the New Zealand Building Code durability requirement of 50 years, provided the Litecrete wall panels are installed and finished as recommended and all protective linings, coating systems and seals are correctly maintained. Associated sealants, seals, flashings and sealing systems are required to have 15 years durability.

Sandblasted finish

The Litecrete panels can be sandblasted prior to shipping, which removes the cured concrete paste on the surface and exposes the pumice aggregate. The panels should be clear sealed after installation. Cost is an extra \$25 per square metre.

Band-sawn timber finish

This is achieved by placing band-sawn timber planks on the casting beds and pouring the concrete mix on top, resulting in the band-sawn texture being imprinted into the concrete surface. (See photo at right). This cost is an extra \$40 per square metre.

External coatings

The flat, exterior surface of the panel is produced off a steel casting bed. If a plaster-type finish is specified the large, flat panel surfaces mean that only a minimal plaster thickness (1/2mm) is required. Therefore, the exterior can be either (1) painted or (2) skim coated with 1-2 mm of plaster then painted. However, vapour-permeable coatings (paint) or plaster systems should be used. We recommend systems that have been BRANZ appraised and/or meet the NZBC requirements. There are numerous exterior plaster systems available, such as Plaster Systems Ltd's Ezytex. From time to time a natural "concrete look" is required on the exterior face. A matt finish vapour-permeable clear sealer system should be applied. Because Litecrete is manufactured from natural materials no one panel is exactly the same colour and variations must be accepted from one batch of concrete to another.



Maintenance

External coating systems must be maintained in accordance with the respective manufacturer's instructions and all damage repaired promptly to ensure the ongoing weathertight properties of the coating systems. In addition to these system-specific requirements, the following general maintenance procedures must also be implemented: Any dirt accumulation or organic growth that may occur should be regularly removed from the external surface by cleaning with warm water and detergent and a soft bristled broom. Solvent-based cleaners must not be used. The external cladding system should be checked yearly for damage to the system itself, deterioration of seals and possible water entry at junctions and joints. Any damage to the coatings, which does occur, must be repaired in accordance with the manufacturer's instructions. Where exterior plaster finish systems are used, it may be necessary to recoat both the top paint coating in accordance with the manufacturer's instructions, after 8-15 years, to restore the visual appearance.

Internal finishing

Some designers specify Litecrete panels in their natural state as the finished interior wall surface, to achieve an "industrial" or "honest" ambiance. It is difficult to be able to install precast concrete panels with both faces having a natural, untouched finish. The panels must be propped temporarily, requiring threaded inserts or fixing bolts to be drilled into either the exterior or interior face. Also, typical floor-slab/wall panel attachments such as Drossbach tubes or grout sleeves require holes on the internal face for grouting. Even after filling these attachment/grouting holes can never be completely disguised. Be aware that the interior face of the panel has a rougher, trowelled finish, as opposed to the exterior face, which is off a smooth steel mould. Because Litecrete is manufactured from natural materials no one panel is exactly the same colour and variations must be accepted from one batch of concrete to another. Litecrete recommend that exposed interior panel surfaces have a thin skim coat (1-2 mm) applied first as the base, which can then be finished with a range of plaster or paint systems.



Internal linings

1. Gib® plasterboard can be glue-fixed direct to Litecrete solid wall panels, if required, rather than plastering the surface, using Fosroc Panel Bond or Selleys Liquid Nails adhesive.
2. 40 mm vertical timber battens can be attached to 150 mm thick Litecrete panels at 600 mm centres. The battens provide a cavity for the installation of through services and for extra insulation.
3. 50 mm Kingspan insulating board (with plasterboard already attached) can also be glued direct to the 150 mm thick walls.

Retaining walls

The structural requirements of precast concrete retaining walls require a minimum strength of 25 MPa. As the strength of Litecrete is 12 Mpa it is not recommended for below-grade (retaining) applications. Wilco Precast can supply normal precast concrete retaining panels if required.

Alternative external cladding

Alternative exterior cladding systems, such as brick, stone or weatherboards, can be attached to Litecrete exterior wall panels. Such systems must be fit for purpose and must comply with the relevant provisions of the New Zealand Building Code. In all cases the manufacturers' installation, application and maintenance instructions must be followed.

External plant-Ons

There are proprietary products available, which can be attached to the exterior surfaces of Litecrete walls to replicate classic architectural styles with features such as windowsills, quoins, cornices and mouldings. These are generally manufactured from lightweight concrete, expanded polystyrene or plaster. Such products should be attached according to the manufacturers' recommendations and finished in a similar manner to the Litecrete panels.