

HySSIL Lightweight High Strength Concrete Wall Panel Technology

The Innovation, It's Origins and Uses

HySSIL is a new generation high strength, lightweight concrete building product developed under collaborative research agreements involving Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO) and private industry group, HySSIL Pty Ltd (HySSIL).

The CSIRO commenced researching high strength, lightweight concrete in the late 1990's in response to requests from developers, architects and engineers for a product which could provide the properties of concrete at significantly reduced weight, but which would also overcome the deficiencies of lightweight concrete products already on the market such as autoclaved aerated concrete (AAC).

The first products being developed are wall panels and associated systems, to be followed by blocks and then flooring systems.

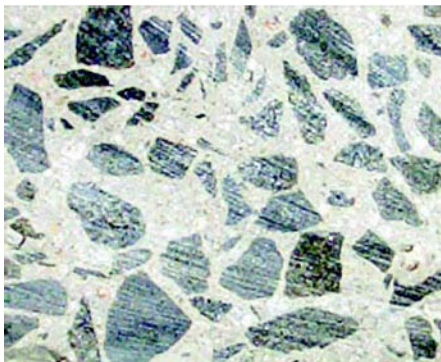
Why HySSIL Is Innovative and What It Will Replace

HySSIL is a unique cellular cementitious product which is approximately half the weight of conventional aggregate based concrete at similar strength ratings which facilitates cost effective building designs and reduced transport and erection costs. Densities range from 1,000 kg/m³ to 1,500 kg/m³ compared with conventional concrete at 2,500 kg/m³. Compressive strengths range from 10 MPa to 25 MPa.

It also has five times the thermal resistance of conventional concrete which translates to highly energy efficient buildings and reduced building running costs. HySSIL can be used in external and internal applications, and can be produced as either load bearing or non-load bearing.

HySSIL has a smooth, robust surface finish which means that finishing costs are lower than for concrete and AAC. It is highly suitable for external applications as drying shrinkage is 40% less than concrete and water resistance is superior to similar strength concrete and AAC. Acoustic properties are comparable with conventional concrete.

HySSIL is designed to replace conventional concrete and AAC building products in a range of residential, commercial, industrial and institutional building applications and engineering structures such as road noise barriers.



Conventional concrete cross section
Density: 2,500kg/m³

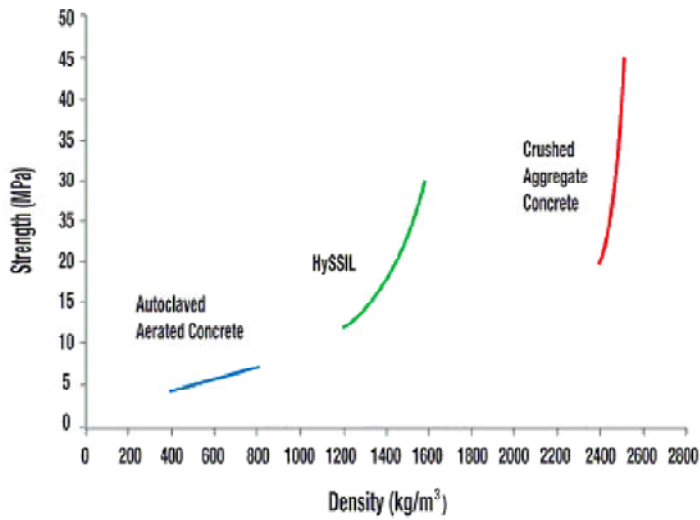


HySSIL cross section
Density: 1,400kg/m³

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LIGHTWEIGHT, HIGH STRENGTH CONCRETE PANELS 2005 Nova Award Nomination 7

Strength Density Curve



100 mm HySSIL panels prior to erection



Close up 100 mm HySSIL panels



HySSIL demonstration building

