

## HySSIL – High Strength, Structural, Insulative, Light Weight Concrete Wall Panel Technology

### The Innovation, its Origins and Uses

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

The CSIRO commenced research into high strength, light weight concrete in the late 90's to fill the gap left by 'Traditional Concrete' and 'Autoclaved Aerate Concrete' (AAC), traditional concrete being heavy and AAC being non-structural. The HySSIL technology provides a product that is structural and light weight.

The first stage of the HySSIL development has been in the manufacture of walling panels and associated systems. Subsequent development will be in the form of blocks and flooring systems.

HySSIL can be used where traditional precast concrete has been used in the past. It can be used in residential housing, light industrial and commercial construction.

### Why HySSIL Is Innovative and What it Will Replace

HySSIL is a unique cellular cementitious product which is approximately half the weight of traditional concrete and for all intensive purposes looks and feels like traditional concrete. Densities ranging from 1000kg/m<sup>3</sup> to 1500kg/m<sup>3</sup> (compared to traditional concrete of 2500kg/m<sup>3</sup>) combined with compressive strengths of 10MPa to 25MPa ensures the HySSIL is a suitable alternative to traditional concrete.

A key benefit of the HySSIL panels is the densified layer which is achieved on both the top and bottom surface of the panel; this layer contributes to the strength and overall surface finish of the panel.

HySSIL is used in both external and internal applications and can be produced in either load bearing or non-load bearing elements and has been developed to substitute conventional methods of construction, such as brick veneer, solid brick, masonry block work and conventional concrete precast.

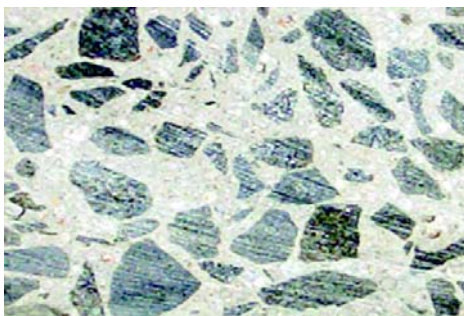
Due to its weight advantages transportation and erection costs are significantly reduced. Combine this with its thermal and acoustic values and fire rating the HySSIL technology present well as a suitable alternative to conventional construction methods.

HySSIL has been designed to replace conventional concrete and AAC building products in a range of residential (single and multi-storey), commercial, industrial and institutional building application and engineering structures such as road noise barriers and temporary road barriers.

HySSIL is embarking on a globalization strategy with serious interest in USA, Thailand, UAE, China and Australia.

### Density / Weight Comparison against conventional concrete

**Conventional Concrete**  
(Cross section)  
Density: 2500kg/m<sup>3</sup>

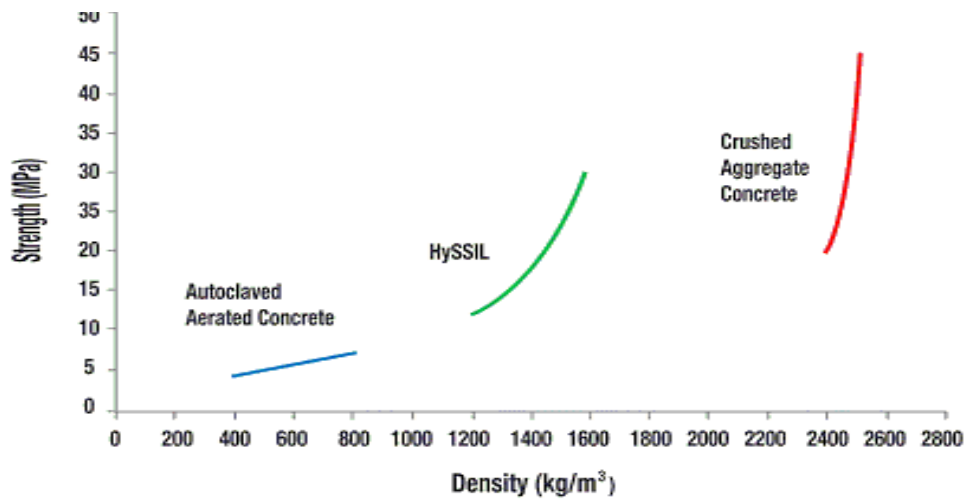


**HySSIL**  
(Cross section)  
Density: 1400kg/m<sup>3</sup>



## HySSIL – High Strength, Structural, Insulative, Light Weight Concrete Wall Panel Technology

Strength - Density Curve



100 mm HySSIL panels prior to erection



Close up 100 mm HySSIL panels



HySSIL demonstration building

