

SIPs - Structural Insulated Panels

- advantages and disadvantages compared with other forms of framing

Comfort and cost are always of interest to homeowners - reasons why more and more designers and developers are looking at the benefits that come with using SIPs for the construction of homes. So, what are SIPs and what do they do?

The term SIP is an abbreviation. It stands for "Structural Insulated Panel". Meaning, a panel that is designed to be able to be used for walls and or roofs or and or floors, with load-bearing capability built-in. Equally importantly, SIPs provide air-tight insulation. Most SIP panels are made from two outer sheets such as galvanised sheet metal or sheet or other sheet material, with thick, solid insulation, such as Expanded Polystyrene, glued in between. Technically speaking, a SIP is what is termed an insulating sandwich panel.

Generally speaking, SIPs are produced as either a panel 1,200mm wide and 2,400mm in height, or, as a whole wall section including openings for windows and doors. Here is a photo of a typical panel style SIP:



Explanation of a SIP

On coming across a SIP panel for the first time, it is obvious that they are large, heavy objects, requiring either several persons to handle them, or, some form of mechanical handling equipment on the site.

However, most SIP "systems" enable the panels to sit into a track or bottom plate arrangement, to assist with rapid installation. Such systems also have a top plate arrangement to secure the panels at the top.

This then allows for a roof truss or the like to be sat on-top of the panels.

From the above, it soon becomes apparent that the efficient installation of SIPs requires persons properly trained in the full process of preparing and then installing them. One builder who specialises in the construction of SIP designed houses, made it clear how well organised one needs to be, to install SIPs efficiently. As a rough rule of thumb, the walls of a SIP house takes about two weeks to erect, ready for the roof.

So, apart from a short timeframe to erect the walls, what you may ask, are the other benefits of a SIP built home? That answer comes from the insulation glued between the two outer sheets. The thicker the solid insulation, the more energy efficient and comfortable will be the interior of the home. In fact, with the use of a 'heat recovery ventilation system', very little or *no heating* may be needed to maintain a comfortable interior temperature, *all through the year*. And that, is a worthwhile goal. And SIP panels are competitively priced compared with traditional materials. Which is why SIP construction, is becoming more and more popular.

For more information about the use of SIPs, visit the BEAL web-site
www.beal.co.nz/Info/SIPS