Fact Sheet

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# Discover new design and construction flexibility with SIPS solutions.

*SIPS incorporates a core of expanded polystyrene (EPS) sandwiched between two oriented strand boards (OSBs).*

*An example of a SIPS prefabricated home*

***The combination of the two materials used in SIPS panels combine the advantages of both; the structural strength of the OSB is complemented by the thermal and acoustic properties of the core of EPS.***

***Combining the structural stability of oriented strand board (OSB) with the insulating properties of polystyrene, structural insulated panel systems (SIPS) are a fast, flexible design and construction option.***

## Composition

SIPS incorporate a core of expanded polystyrene (EPS) sandwiched between two oriented strand boards (OSBs). The combination of the two materials combine the advantages of both; the structural strength of the OSB is complemented by the thermal and acoustic properties of the core of EPS.

Species used in the OSB are generally softwoods and occasionally hardwoods, depending on the area from which they are sourced.

## Appearance

When not erected, SIPS appear like a sandwich, with the darker OSB flanking a thick inner section of lighter coloured polystyrene.

When installed, the only part of the SIPS that is visible is the OSB. OSB is made of compressed fragments of wood and so appears as a large sheet of wood in which can be seen moderately large timber fragments. As SIPS are typically large sheets, the wood strands are much more visible than in small pieces of OSB.

The colour of OSB, depending on the species of timber and the resin used in its creation, usually ranges from light yellow to medium or dark brown.

## Applications

SIPS are designed for structural uses, particularly project applications that require large sheets of material. As such, SIPS can be suitable for:

- standard walls
- bracing and shear walls
- roofing
- flooring
- tall walls

## Standards

There is no specific Australian Standard for SIPS. In the US, APA – The Engineered Wood Association has published ANSI/APA PRS 610.1: Standard for Performance Rated SIPs in Wall Applications, and the International Residential Code (IRC) adopted SIPS under IRC Section R614.

SIPS do not come in defined grades, due to the lack of prescriptive standards, but can be manufactured in a range of densities to provide specific levels of thermal and acoustic performance.

The absence of Australian Standards means that individual suppliers can produce SIPS that may significantly differ in their structural properties.

Before you choose SIPS panels or systems, you should ensure that that they meet the National Construction Code (NCC) in addition to any local building requirements.

## The advantages of engineered wood products

The popularity of engineered wood products (EWPs) like SIPS, is due to the many advantages they have over other building materials.

Typically, the benefits of EWPs include:

- Greater dimensional flexibility
- Improved structural design properties and performance
- Improved dimensional stability
- More efficient use of a valuable natural resource with less wastage
- Faster construction times
- Reduced onsite OH&S risk

EWPs and associated building systems also have environmental advantages over alternative building materials such as concrete and steel. Wood is a naturally renewable resource that has a low embodied energy and also acts as a carbon store (up to 50% of the dry weight of wood is carbon).