

BIO-SIPS: A DEEPER SHADE OF GREEN?

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ABSTRACT: A relatively recent innovation in building component systems for housing, Structural Insulated Panels systems (SIPs) are fast gaining popularity in North America and Europe. A prefabricated structural element, SIPs can be used for walls, roofs and floors without the requirement for framing. Hailed as a ‘green building product’ and promoted as environmentally sustainable, the Structural Insulation Panel Association claims in its website that SIPs create a ‘green’ home through:

- Energy efficiency and renewable energy
- Waste reduction during the construction process
- Creation of healthy indoor environments

While these claims have validity when SIPs are compared to light timber framed construction, SIPs still have a high environmental footprint, are not biodegradable and typically contain chemicals that are considered hazardous.

This paper looks at emerging research into ‘bioSIPs’ – biologically based Structural Insulated Panel systems, to compare the attributes and assess the disadvantages of these potentially new ‘green’ building components. It does this by comparing the performance of a typical Structural Insulated Panel system with a variety of BioSIPs. It then goes on to consider which components of SIPs could be improved on and identifies how this could be achieved in the context of the New Zealand environment.

Key Words: SIPs, Bio-SIP, Kiwi-SIP, sustainability, green building products