

Panelex

Residential SIPs System

PRODUCT BROCHURE

Affordable, Innovative & Energy Efficient Structural Insulated Panels (SIPs) for the Australian Market

The Panelex system provides a solution to a high performing home, increasing energy efficiency and internal comfort, creating a more sustainable and cost effective approach to home building.

What are SIPs?

SIPs (Structural Insulated Panels) are a high performance modular building product, that consists of an insulating foam-core sandwiched by an external structural layer. SIPs have been used in the building industry for more than 70 years, but until recently has been unable to break in to the market as a common building material and system.

Recent and increasing demand for innovative, eco-friendly and efficient building systems in the Australian market have made SIPs one of the fastest growing systems available.

Panelex Overview

The Panelex SIPs panels consist of uniquely designed Wall, Floor and Roof panels that together formulate a strong, eco-friendly building system which brings about many benefits for the owner and builder.

All Panelex products are made up of a polyurethane (PUR) or a polyisocyanurate (PIR) insulating core that is structurally and thermally superior to Polystyrene (EPS), which is found in most other SIPs products. Our PUR or PIR panel cores are thermally bonded to the panel skins during the manufacturing process, and have unique, integrated joining systems that strengthens the panel and allows a fast and simple installation process, with an embedded structural steel for increased structural integrity, as well as added fixing points for external cladding systems.

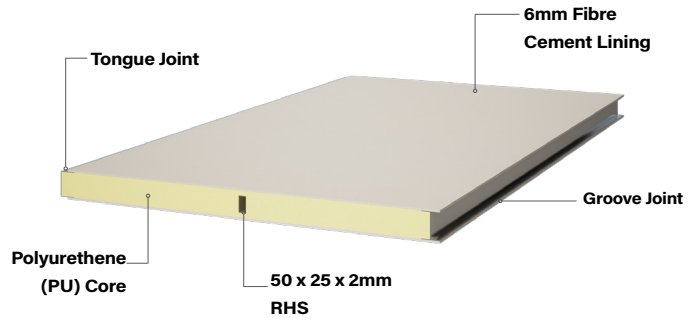


90mm External Wall Panel

Thickness: 90mm

R-Value: 3.4

- Used for Ground Floor & First Floor External Walls
- Embedded Structural Steel
- High-Density Polyurethane (PIR) Insulation

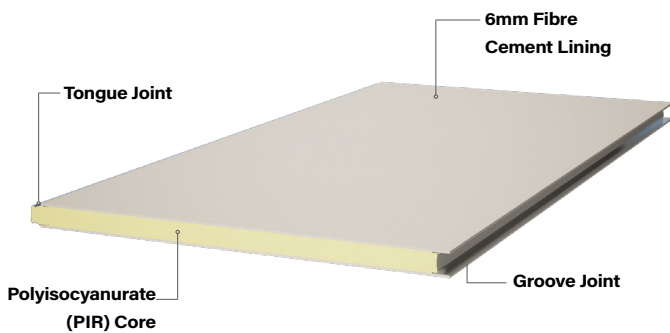


65mm Internal Wall Panel

Thickness: 65mm

R-Value: 2.4

- Rigid, Easy to Install Internal Wall Panel, Or External Wall for
- High-Density Polyisocyanurate (PIR) Insulation

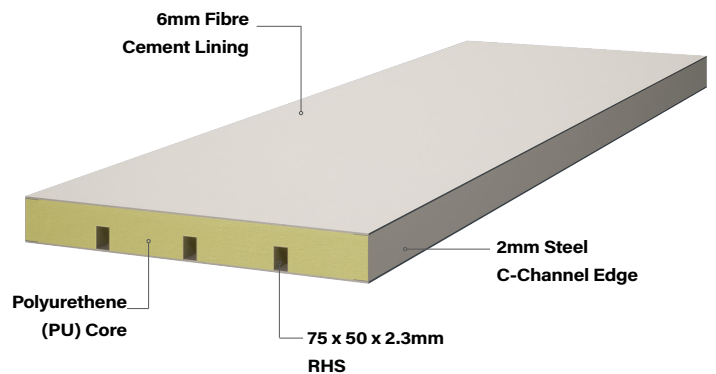


Floor Panel

Thickness: 100/150mm

R-Value: 4.9/7.7

- Capable of Large Spans
- Quick & Easy to Install
- Embedded Structural Steel
- High-Density Polyurethane (PU) Insulation

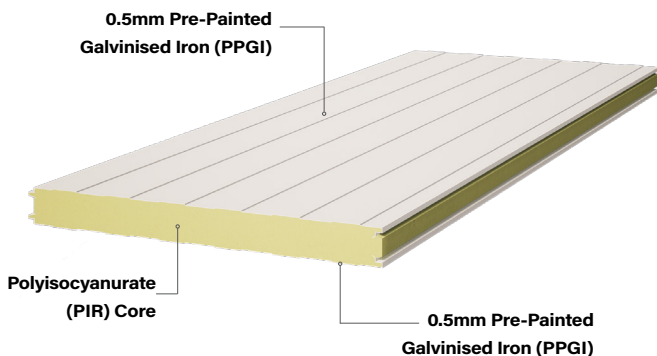


Roof Panel

Thickness: 75/100/125/150mm

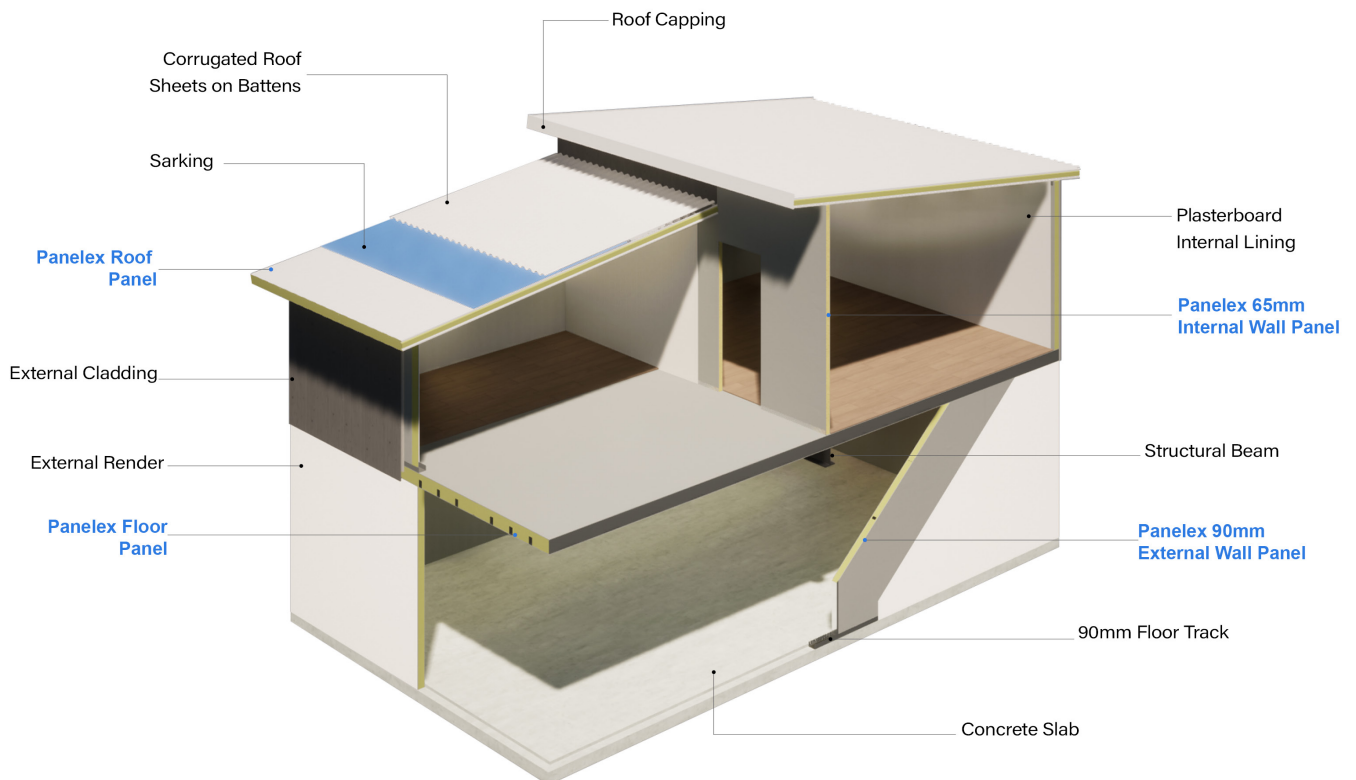
R-Value: 3.1/4.2/5.2/6.25

- Simple Skillion Roof
- Capable of Large Spans
- Pre-Painted Galvinised Iron (PPGI) External Skin, able to be used as Finished Eaves & Ceiling
- High-Density PU or PIR Insulation



The Complete Panelex Building System

The simple construction system makes building a home quick and cost effective. The diagram below shows how the Panelex SIPs panels combine easily with other building materials, to create the most efficient and cost effective solution.



Benefits of Panelex

The Panelex Residential System is designed to be as simple and efficient as possible during construction without compromising on quality.

Construction Benefits

- **Fast and Simple Installation**
- **Less Reliance on Skilled Trades**
- **One Installation Team to Lock-up**
- **Less Wastage On-Site**
- **Reduced Supply Chain for Trades and Materials**
- **Pre-cast Conduits for Simple Electrical Wiring.**
- **Reduced Scaffolding and Equipment Hire Costs**



Home Owner Benefits

Superior comfort and flexibility in design are a beneficial result of the Panelex system. With dense thermal insulation embedded in a thin structurally integral modular panel, the design opportunities are unlimited.

Unique Design Opportunities

With a new construction system comes a new way to design a home. Sharp modern edges and stylish skillion roofs become the norm with Panelex. A traditional double brick house offers little individuality in the interior and exterior of the building, unless costly design features are incorporated. The Panelex system on the other hand can be completely customizable creating unique shapes both inside and out with little additional cost.

- **Raked Ceiling & Skillion Roof**

The Panelex roof panels have the ability to span long distances, creating simple and effective roof and ceiling features. With the roof panels being manufactured with pre-painted galvanised iron (PPGI), it creates a finished layer that can be used as an external soffit with no added soffit lining, and fixing an internal plasterboard ceiling to the roof panel is as simple as fixing to any other building system.

- **Flexibility in External & Internal Finishing**

Whilst the embedded steel in the wall panels provides the high structural properties of the panels, they also act as a strong fixing point for external cladding systems to be fixed directly to the panel, or on cavity battens. The same can be said for interior finishes, as the steel allows for unique interior cladding finishes, or alternatively, the panels can be flushed and painted, without any additional materials.



Superior Interior Comfort

The Panelex system creates a more comfortable interior, as the dense insulation allows the internal temperatures to be easily controlled throughout the home. The air-tightness also means infiltration of cold/hot temperatures is more difficult, and heating and cooling systems are more efficient and effective. The home owner will feel the difference in comfort compared to a traditionally built home.

▪ Thermal Comfort

Traditional brick and stud frame homes typically have a high thermal transmittance, requiring a high amount of heating & cooling which needs to reach all corners of the house to maintain a comfortable temperature throughout the hot and cold months of the year. The Panelex system provides an extremely low thermal transmittance due to the high density polyurethane, meaning even without any air-conditioning system the changes in internal temperature are only mild and the use of air-conditioning when outside temperatures are at their most extreme is very minimal.

▪ Acoustic Comfort

Air-tightness and rigidity of the Panelex system means the noise of wind and rain has little effect on the interior of the home, which is usually not the case with traditional timber roof, which provide little acoustic resistance. The insulated core of the panels also vastly improves the acoustic performance, limiting external noise from neighbours, cars and other external noise.

▪ Energy Efficient and Air-Tight Construction

Heating & cooling can take a lot of energy and be costly if built with traditional methods. This is where the high-density polyurethane (PU), and air-tight construction, helps reduce that cost and keep the hot or cold outside temperatures from transferring into the house. This means opportunities for solar heat gain by strategic window placement is much more efficient and effective, as heat gain through the building fabric is very low.

