FastFix®

Residential Panel System

SHEMCO
BUILDING SYSTEMS

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

FastFix panels can be maufactured to custom designs, or alternatively, designers can utilisethe standard panel sizes to influence the design of the home, for a more cost effective approach.

What are SIPs?

SIPs (Structural Insulated Panels) are a high performance modular building product, essentially made up of an insulating foam-core sandwiched by outer facings of various materials. 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.

FastFix Overview

The Fast Fix range consists 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.

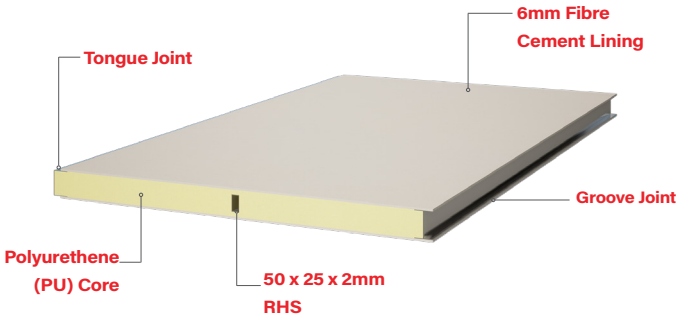
All Fast Fix products are made up of a polyurethane (PUR) or a polyisocyanurate (PIR) insulating core that is structurally and thermally superior to Polystyrene (EPS), which is found in most other SIPs products. any other insulating material. PU or PIR panel cores are thermally bonded to the panel skins during the manufacturing process, and have unique, integrated joining systems that strengthens the panel and allows a fast and simple installation process.

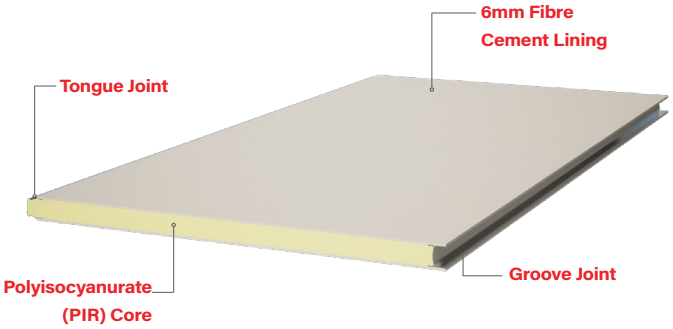
90mm External Wall Panel

Thickness: 90mm

R-Value: 3.4

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





65mm Internal Wall Panel

Thickness: 65mm

R-Value: 2.4

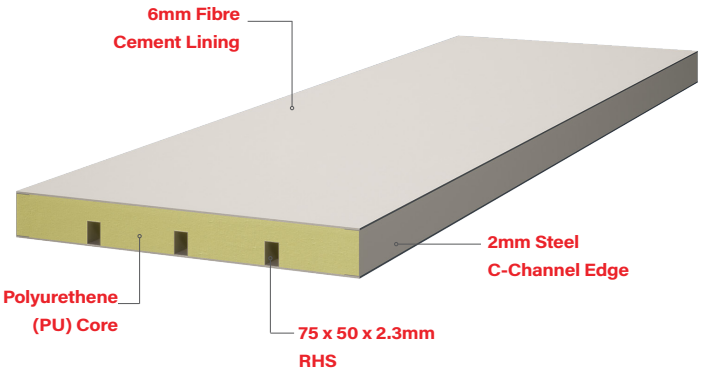
- Rigid, Easy to Intall Internal Wall Panel
- High-Density Polyisocyanurate (PIR) Insulation

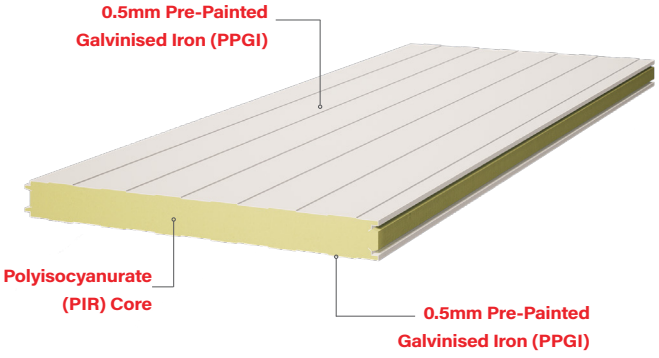
Floor Panel

Thickness: 100/150mm

R-Value: 4.9/7.7

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





Roof Panel

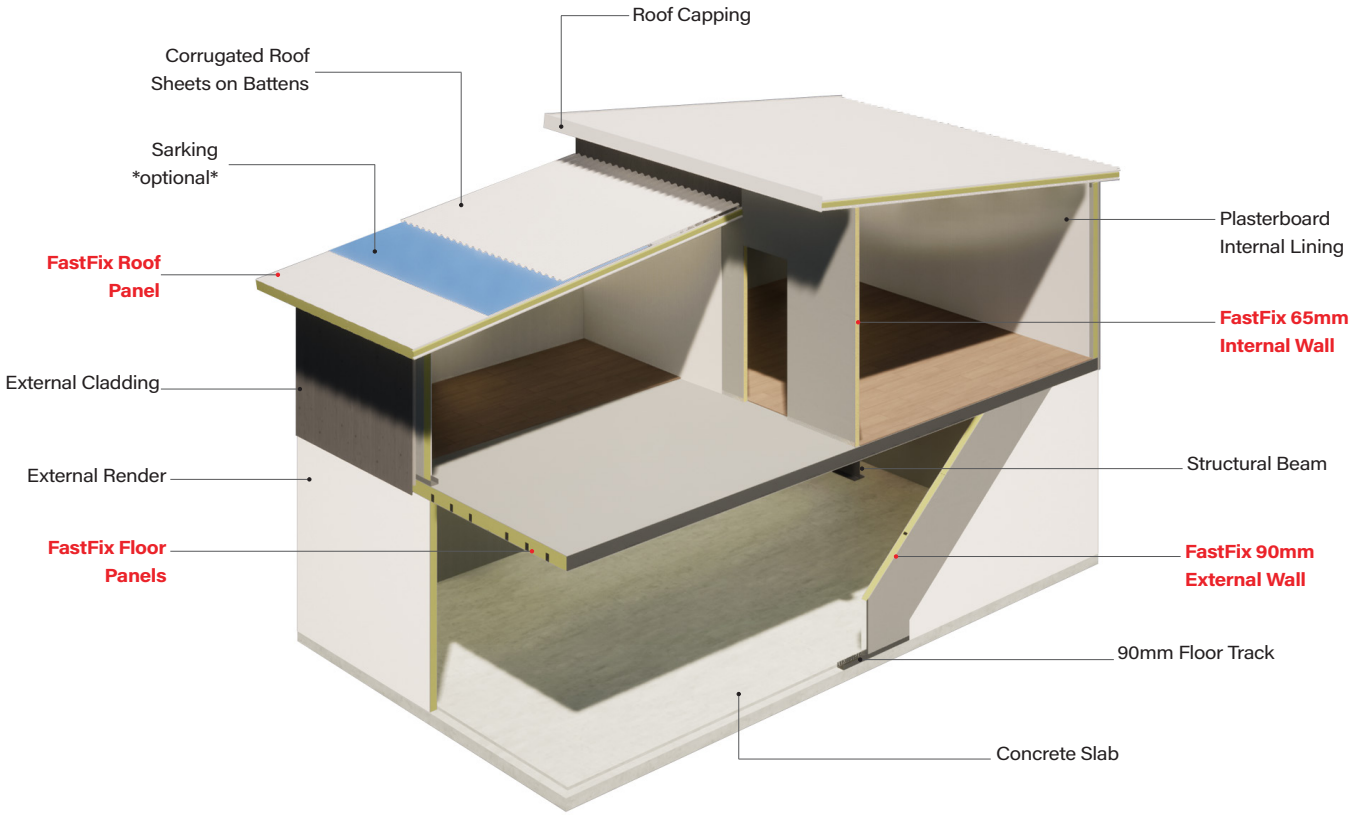
Thickness: 75/100/125/150mm

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 FastFix Building System

The simple construction system makes building a home quick and cost effective. The diagram below shows how the FastFix panels combine easily with other building materials.



Benefits of FastFix

The Fast Fix Residential Building System is designed to be as simple as possible for the builder, or owner builder without compromising on any benefits to the home owner

Builder 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
- Draw upon Lock-up Claims Faster
- Pre-cast Conduits for Simple Electrical Wiring.
- Reduced Scaffolding and Equipment HIre Costs

Home Owner Benefits

Superior comfort and flexibilty in design are a beneficial result of the FastFix 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 FastFix. A traditional double brick house offers little individuality in the interior and exterior of the building, unless costly design features are incorporated. The FastFix 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 FastFix roof panels have the ability to span long distances, creating simple and effective roof and ceiling features and oportunities. With the roof panels being manufactured with pre-painted galvanised iron (PPGI), it creates a finished layer that can be used as a ceiling with no added plasterboard lining, although, fixing a 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.

Perfect for Rural Properties with Extreme Temperatures & Freedom in Design.

The design flexibility and thermal benefits of the FastFix system make it optimal for homes in rural areas, where large spans and high ceilings are sought after, and colder temperatures are more common.

Rural Design & Build Benefits

- **High Walls and Ceilings**

The FastFix walls are able to be custom ordered at any height, making it easy to create high, raked ceilings with the roof panels, which is typically sought after in large rural properties.

- **Extremely energy efficient and air tight construction**

For large rural homes, heating & cooling can take a lot of energy and be highly costly if built as a traditional brick house. This is where the high-density polyurethene (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.

- **Large spans without structural support for roof panels**

The FastFix roof panels are capable of large spans, to create the large open living areas common in rural home design. Although, if larger spans are required, the addition of embedded steel cast-in to the roof panel can extend the roof span drastically.

- **Less Trades in Remote Areas**

In remote areas where skilled tradesman are scarce and expensive, Fast Fix is a perfect building system as its one of the quickest systems on the market and can be installed by most trades and labourers. Typically multiple different trades would need to be coordinated to construct different parts of the structure, in rural areas this can mean there is a lot of waiting for trades or rates are increased. With FastFix containing all structural components for a large rural home, the savings in time and labour are unparalleled.

Superior Interior Comfort

The FastFix panels create 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, compared to a traditional brick house.

- **Thermal Comfort**

Brick houses typically have a high thermal transmittance, usually requiring a lot 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. A FastFix house has an extremely low thermal transmittence due to the high density polyurethene, meaning even without any air-conditioning system the change in internal temperature is only mild and the use of air-conditioning when outside temperatures are at their most extreme is very minimal.

- **Acoustic Comfort**

Air-thightness and rigidity of the FastFix 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.

- **Larger Internal Floor Space**

The external wall panel at 90mm thick offers much more internal floor space than a double-brick 230mm external cavity wall. With the same slab footprint as a typical sized 4x2 design, floor space is increased by more than 10m^{2,}, and with the internal walls being only 65mm instead of the typical 90mm for brick internal walls, the floor space needed for regulation circulation space is reduced and floor area for more important areas such as bedrooms and living spaces is increased.