SIPS
INDUSTRIES

PRODUCT INFORMATION

Delcorp Australia Pty Ltd

Structural Insulated Panels – Pre-manufactured designed panels for building floors, walls, and roofs in the Residential and Commercial building industries.

In 2022, Delcorp Australia Pty Ltd was born to give builders access to fast and efficient building method that is taking Europe, America, and Asia by storm. With SIPs industries well established in the UK, Australia was the perfect environment to introduce energy efficient building methods.

Known particularly for its strength, versatility and outstanding insulation properties, SIPs construction is one of the fastest growing building systems globally, and SIPs Industries is proud to be an Australian SIPs floor panel, roof panel and wall panel manufacturer.

SIPs Industries are manufactured in Western Australia and supply across all of Australia.

Sales and Support

Our sales and technical support are available nationwide to offer advice, process orders and provide one-on-one service.

Contact our departments:

Sales and General Enquiries	08 9494 2211	ext 1
Estimating and Scheduling	08 9494 2211	ext 2
Technical and Drafting	08 9494 2211	ext 3

General Enquiries: info@sipsindustries.com.au
Website: www.sipsindustries.com.au

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SIPS General Information

SIPS Industries Panels are used for Floors, Walls, and Roofs. SIPs Industries panels are termite resistant, fire retardant, cyclone rated and CODEMARK® certified. The offsite manufacture process means the build time for the structural and insulated framework can be reduced massively in comparison to other building methods. Together with high thermal ratings (R-Values), the panels are also air-tight, up to 60 time more air-tight than typical construction methods.

Floors:

SIPS Floor panels are 175mm thick (R4.4) and require a bearer beneath the panels at max 2.7m spacing's. The floor panels are generally used in ground floor situations where the building is on post and bearers due to a sloping site, or a requirement for the building to be off the ground.

This provides a lightweight and speed advantage over other products and systems as the floor is ready to walk on and pre-insulated and air-tight. Refer to span charts and more information in the specification and design parts of this document.

Walls:

Wall panels are the most common use of SIP's. The wall panels are available in three thicknesses; 115mm thick – generally used for internal wall framing for structural capacity and acoustic performance. This panel can also be used as an external wall as it achieves R2.8.

145mm thick – the most common external wall choice due to its R3.57 thermal rating, which will eclipse the national construction code requirements for years to come. This thickness with cladding is similar to that of double brick achieving the same recessed look to the windows as traditional construction.

165mm thick – the deepest wall panel will attain R4.1 which will provide the best thermal rating. This panel will achieve the requirements of the German Passivhaus standard.

Roofs:

SIPS Roofs allow for designers to vault or rake the ceiling internally, which can enlarge the special feel to a room and welcome more light into a space. With a thermal rating of R4.4 the 175mm thick panel can span up to 6m unsupported. The SIPS, being airtight and highly insulated, will reduce outside noise to a minimum and help to keep the energy or cooling or heating within the building space, an enormous amount of heat is either lost or gained through traditional roofing. The inherent strength of the panels will permit large overhangs to shade glazing and keep buildings cool in summer.

Australian Building Compliance

SIPS are Approved in accordance with the ABCB JAS/ANZ Codemark® Scheme.

SIPS INDUSTRIES Products are proud to be Codemark® Certified. The Certification Scheme (the Scheme) is a voluntary third-party building product certification scheme that authorises the use of new and innovative products in specified circumstances in order to facilitate compliance with Volumes One and Two of the NCC, also known as the Building Code of Australia or BCA.

The Codemark® accredited building certifiers and auditors question and check over every technical document, our fabrication procedures and audited our full processes including manufacture and site installation of each product on an annual basis. This gives confidence to our customers, certifiers, builders and of course to ourselves, and helps us to continually improve. CodeMark® provides confidence and certainty to regulatory authorities and the market through the issue of a Certificate of Conformity, which is one of several options available for meeting the 'evidence of suitability' requirements of the BCA.

SIPS Industries panels are typically used for Floors, Walls and Roof Structures, and are as such certified as individual systems. Each System is fully tested and engineered for their individual uses, accompanied by a detailed set of fixing schedules for all climate zones in Australia.

CODEMARK Australia CM40361

SIPS Wall Panels

CODEMARK Australia CM40362

SIPS Roof Panels

CODEMARK Australia CM40363

`SIPS Floor Panels

"SIPS Industries are the first and only Codemark® certified structural insulated panel manufacturer of its kind in Australia, proudly certified since 2014"

Nishanth Tedla

Passivhaus

Passivehaus design incorporated minimal thermal bridging of the building's structural elements, with a highly air-tight and insulated building envelope. The system (or movement) originally developed in Germany and was more specific to a colder climate with short warm spells of summer, requiring little to no solar gain. The principle involves creating a building environment of consistent temperature with fresh air delivered through an energy exchange unit. Another benefit often not discussed is that there is little need to consider the building orientation for solar gain which is an option often taken away from the client doe to site sizes and orientation.

SIPs panel performance lends towards the Passivhaus principles of design without the need to add very much extra consideration to the design, whereas with alternative building materials, consideration for thermal breaks, vapour management, internal air-tightness and high R-Values; are all part and parcel of SIPS system whether the building is Passivhaus or not. SIPs have been used for numerous Passivhaus and Passivhaus principle designs and held the record for the most air-tight building in the southern hemisphere at 0.25ACH @50Pa. A typical Australian new home leaks 15ACH (Air Changes Per Hour).

Air-Tightness ✓ **Highly Insulated** ✓ **Minimal Thermal Breaks** ✓ **Moisture Managed** ✓

Bush Fire Attack (BAL)

"*A Bushfire Attack Level (BAL) is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat, and direct flame contact. It's measured in increments of radiant heat (expressed in kilowatts/m2).*

A BAL is the basis for establishing the requirements for construction (under the Australian Standard AS3959-2009 Construction of Buildings in Bushfire Prone Areas), to improve protection of building elements from bushfire attack." – Bushfire Prone Planning

BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
Direct Exposure to Flames from Fire, with high heat flux and ember attack	Ember & burning debris attack, high heat flux with likely exposure to flames	Ember attack, with burning debris and higher heat flux	Increased Ember Attack and Burning Debris	Risk of Ember Attack Only

SIPS Industries **Floor Panels** comply with AS 3959 for all zones if fully enclosed. For unenclosed subfloor spaces the underside of the panels needs fire protection if less than 400mm from the ground and must be lined with non-combustible sheeting for BAL 40 and for BAL-FZ the floor panel needs to be protected with a 30min resistance to incipient spread of fire system.

Wall panels are permitted for use up to BAL 40 with a non-combustible cladding, refer to AS3959 for minimum thicknesses. For wall panels in BAL-FZ, the panels require to be lined to achieve an FRL (Fire Resistance Level) of 30/30/30.

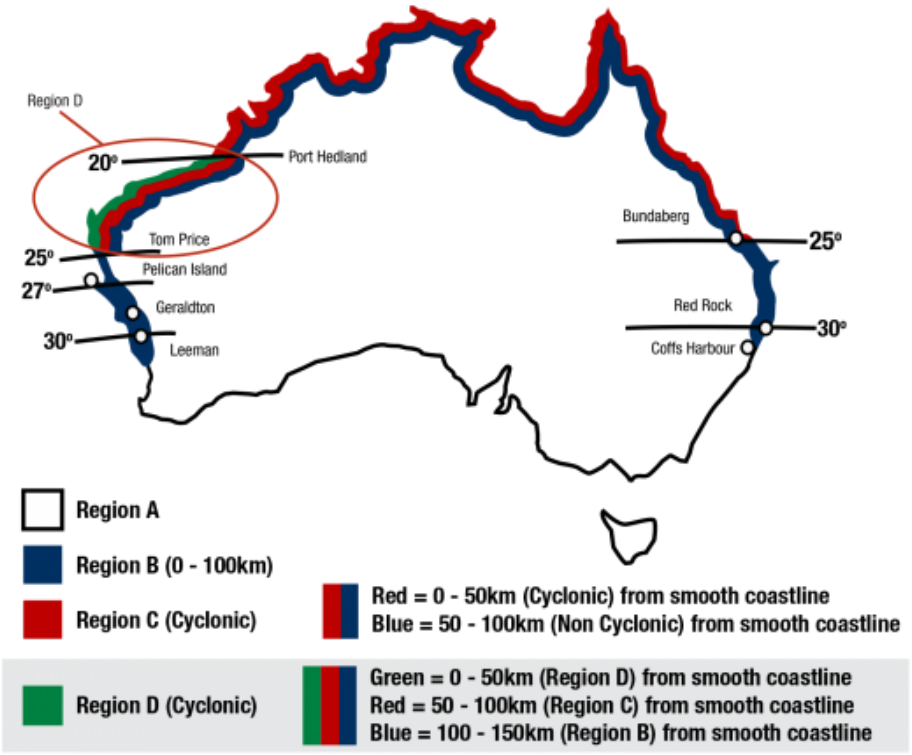
SIPs **Roof Panels** can be used for BAL-Low up to BAL-40 and will require a lining to achieve an FRL of 30/30/30 for use in BAL-FZ.

Care must be taken to detail the building and construction in accordance with the relevant BAL criteria of AS3959-2009. Contact our technical team for advice.

Cyclone Rated

SIPS Industries panels are tested for use in Wind Region D (cyclonic), the highest level in Australia. Excessive testing has been carried out to determine the panel's ability to withstand wind classes up to C4.

SIPs Industries have built several homes in Exmouth, sheltered residential units and large commercial premises in Port Hedland, along with many others in the severe tropical cyclone risk area of north Western Australia.



Fire Resistant/Retardant

SIPS Industries panels are a Type C building material which means it is suitable for use in all Classes of construction but may be limited to residential and low rise commercial and industrial buildings if being used as a structural component of the build, like most timber frame structures. SIPS panels have been rigorously tested in fire situates across the US and Europe, and many of these test videos are available online. The panels perform exceptionally due to the rigid insulation preventing heat transferring through the panel, maintaining the panels structural, integrity and insulation.

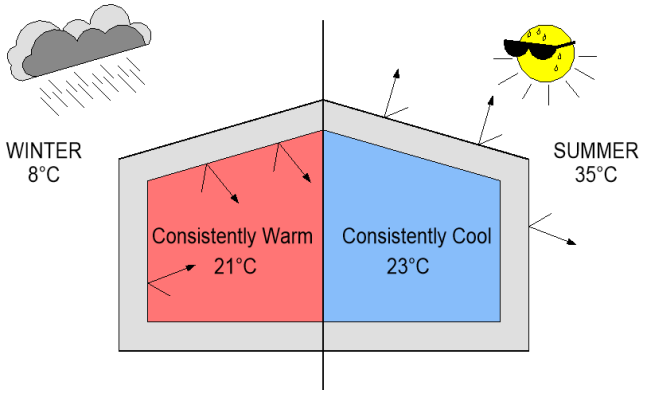
The panels, as with any lightweight framing, performs best when lined with plasterboard, however it is permitted to expose the panels for residential use. Where fire resistance levels are required, SIPs have been tested to achieve fire resistance levels for 60 minutes and 90 minutes (FRL's 60/60/60 and 90/90/90). Refer to SIPS Typical details or contact our friendly technical team for advice.

The panels use EPS (Expanded Polystyrene) as the insulation material pressed within the core of the panel, it is a worldwide regulation that EPS must contain a Fire Retardant for use in the building industry. The fire-retardant forces the polystyrene to melt away from a naked flame and self-extinguish, meaning the EPS will not continue to burn. Numerous tests and research have gone into the effects of EPS in a fire and as the EPS is encapsulated in the panel, it therefore does not present and undue fire hazard.

Thermal Efficiency, Comfort and Savings

The thermal efficiency of SIPS builds is widely documented, and a few important factors of SIPS builds contribute to this;

Insulation – The first and foremost influence in achieving an energy efficient building. Insulation in the building envelope will reduce the loss of energy from the building. The insulation methods vary through the different building systems available, but SIPs provide the most consistent level of insulation using insulated block splines to join the panels, reducing thermal breaks traditionally caused by vertical structural members.



When the insulation layer is on the inside of the building envelope, as with SIPS, the inside space will heat up or cool down quickly when required. If the building envelope is Air-Tight, that energy will stay within the envelope.

Thermal comfort is the condition of mind that expresses satisfaction with the thermal environment and is assessed by subjective evaluation (ANSI/ASHRAE Standard 55). To feel comfortable, one must not feel draughts, dramatic increases or decreases in temperatures. The space must be a consistent and controlled temperature. SIPS buildings when monitored show a minimal variation of +/- 4°C over a year, varying from 19°C to 23°C. According to The World Health Organisation (WHO), these temperatures are ideal for healthy living.

The **Savings** associated with a well-insulated, well-designed and air-tight building can reduce energy bills by between 50-70%. If the savings are amortized with your mortgage, it is possible to shave 5 years from a 30-year mortgage, on energy bills alone.

Sustainable Product

SIPs Industries Panels are environmentally friendly and complies directly with 3 relevant sections of the Green Star Certification Programme: Indoor Environment Quality, Emissions, and Materials. And indirectly will assist to achieve green stars through Innovation and Energy.

Our timber is sourced from Sustainable forestry's with a Chain of Custody programme in place (CoC). SIPS Industries are proud to be associated with Wood Solutions and maintain the ethos that wood is the ultimate renewal with environmental credentials that far outweigh the alternative building products.

Low Embodied Energy – Carbon Storage

Maximised Green Star – Recycling Wood Waste

Formaldehyde emissions from the product is rated E1 – There are natural formaldehydes in timber, otherwise the rating would be E0.

SIPS Industries panels use no Ozone Depleting substances in its manufacture, or in the manufacture of any of its components. SIPS Industries Panels are HBCD free.

Termite Resistance

SIPs Panels comprise essentially of two materials. OSB Skins enclosing an EPS Core.

OSB – Oriented Strand Board – Sourced from Egger in Germany the board is specifically manufactured for use in Australia. The Board Is treated to H2 levels right through the board and exceeds AS1604-2012.

EPS – Expanded Polystyrene –EPS does not attract termites, in fact, is contains no nutritional value to termites or any living organisms.

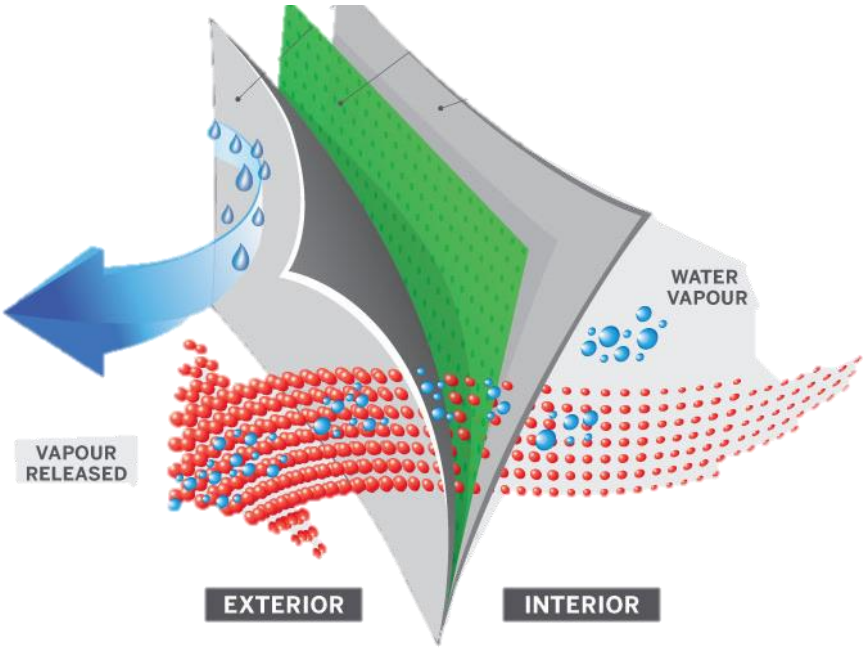
Waterproofing and Breathability

Wall and Roof Panels are required to be wrapped with a breather membrane, also referred to as a Vapour Permeable Barrier. Organic building materials need to breath in order to prevent build-up of moisture within products which can cause serious building performance problems such as material degradation, rot, mould and human health risks.

SIPS Industries wrap our walls and roof panels with Proctor Wall and Roof Membranes which are compliant under AS/NZS4200.1. The membranes used by SIPS Industries are the latest in moisture control, vapour permeable watertight membranes. These products are designed to reduce the risk of condensation forming on the panel surface or within the building envelope. While allowing moisture (water vapour) to pass outward and diffuse into the air via the ventilated cavity. The membranes prevent the ingress of water both during and after construction.

The Figure Shows the layer build-up of the membrane, allowing vapour to pass through from inside to outside, but it will not allow moisture to pass from outside to inside. This ensures a dry structure that will last a lifetime.

"The problem of moisture in buildings is often perceived to be negligible in Australia due to our warmer climate, construction methods and history of damage. That perception is wrong and places the parties responsible for the design and delivery of a building at risk of liability and the owner and occupiers at risk of financial loss and compromised health. Traditionally our buildings were not airtight and had little or no insulation. However, as a result of changing occupant practices (such as closing windows to exclude external noise or retain conditioned air) and the introduction of mandatory energy efficiency and enhanced bushfire construction requirements, building practices are changing, requiring a change in detailing so that moisture related problems are adequately managed."



– Australian Building Codes Board (ABCB) – Condensation in Buildings 2011

Acoustic Performance

The performance of the panels will vary depending on the application. SIPs Panels due to the solid core, layered build-up, air-tightness and addition of plasterboard lining, will typically perform considerably well in a laboratory test. It is also true that the system, comprising of an organic lining material, will absorb sound and dull any echo often found with new builds.

Performances are based on laboratory testing performed by SIPs industries or other manufacturers.

Wall Panel Airborne Acoustic Test Description	Rw(C;Ctr) dB
SIPS Industries 60/60/60 Party Wall. Double 115mm SIPS panel with 40mm cavity filled with 50mm Rockwool 14kg/m³, 1/13mm + 1/16mm Fyrcheck to each side.	64(-2,-7)
SIPS 115mm Wall panel with 2 layers of 15mm plasterboard to one side, and 1 Layer of 15mm Plasterboard on a 25mm resilient batten with 25mm Rockwool 60kg/m³	54(-2,-7)
SIPS 115mm Wall panel with no lining to one side, and 1 layer of 15mm Plasterboard on a 25mm resilient batten with 25mm Rockwool 60kg/m³	44(-2,-7)
SIPS 115mm Wall panel with 2 layers of 15mm plasterboard to both sides	41(-2,-7)
SIPS 115mm Wall panel with 1 layer of 13mm plasterboard to both sides	33(-2,-7)
SIPS 115mm Wall panel with no lining either side	26(-3,-5)

Decibel reduction is the figure shown in the right-hand side, this is the reduction of noise level when impeded by the SIPS wall build up described. For Example, a TV or Radio is typically 70dB, when one is in an opposing room with a wall build-up of SIPS and a layer of plasterboard both sides; the noise is reduced to 37dB, a soft whisper.

Australian Made

SIPS Industries panels are manufactured in Fremantle, Western Australia. The bulk of material used in SIPS Panels is sourced locally, and we strive to assist local businesses sourcing our wood products from Western Australia supporting local industry and jobs.

Ready-Cut

SIPS Ready Cut is a series of premanufactured and standard panel size option. Using pre-determined panel sizes will increase supply speed, reduce cost by up to 50% and reduce wastage. See our panel sizes at www.sipsreadycut.com.au or contact our office.



Downloads and Further Information

"Surely we have a responsibility to leave for future generations, a planet that is healthy and habitable by all species."

– Sir David Attenborough

At SIPS Industries, we are constantly testing and developing our product; to bring you the best information possible and ensure our product complies across Australia and stands out as the number one choice for energy efficiency, construction speed, comfortable living, and sustainable material choice.

Check out or full downloads available on our website.

www.sipsindustries.com.au/products/downloads

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SIPS Roof Panels

SIPS Floor Panels

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