

Permastop®

Permastop®

Building Blanket

Making Metals Roofs Better



Fletcher[™]
Insulation

*Creating an environmentally
sustainable future*

The right choice for metal deck roofing

As more and more buildings, both commercial and domestic, are being built with metal deck roofing and metal wall cladding the need to install the right insulation is crucial. To increase the comfort and energy efficiency of the buildings we work and live in, the right choice for effective insulation performance is **Permastop®**.

Permastop® will:

- Increase the comfort of the building for the occupants.
- Save money as the demand for energy is reduced.
- Increase the energy efficiency of buildings helping to reduce greenhouse gas emissions.
- Reduce noise, both from outside and inside, with improved acoustic performance.
- Control condensation under a metal deck roof and maintain it's expected lifespan.

The right thermal insulation

Permastop glasswool blanket insulation faced with *Sisalation*® is available in material R-value of R1.3, R1.8, R2.5 and R3.0 and nominal thickness of 55, 75, 100 and 130mm.

With the requirements of the Building Code of Australia demanding a Total R-Value of R3.2 in many constructions you can be confident that correctly installed, *Permastop* will comply.

Installing the correct insulation greatly improves the comfort of occupants by reducing the extremes of temperature and thereby reducing the need for artificial heating and cooling saving money and helping the environment.

The right acoustic insulation

Metal Deck roofing and wall cladding is a popular choice due to it's lightweight, economy and suitability for the Australian climate. While many people enjoy the sound of rain on the roof it can become deafening in extreme conditions, especially hail. *Permastop* is not only an effective thermal insulation but acts as a baffle to reduce sound transmission both from outside and inside sources.

The acoustic performance of 75mm *Permastop* can reduce rain noise by as much as 18dB(A) compared to a metal roof with no insulation. *Permastop* also stops noise from the rapid expansion of metal deck roofs under the sun.

For both domestic and commercial applications *Permastop* is the right choice to control noise down under.

Sound absorption

Permastop with various facings has the following sound absorption co-efficients when tested in accordance with AS1045 by the Reverberation Room Method. Tests were carried out with no air space behind the samples and results are based on test reports from RMIT Department of Applied Physics.

Nominal Thickness	Sound absorption coefficients (reverberation) at frequencies (Hz) of:					
	125	250	500	1000	2000	NRC
55mm (<i>Sisalation</i> ® Light Duty)	0.45	0.85	1.05	0.45	0.20	0.60
55mm (<i>Sisalation</i> ® Heavy Duty Perforated)	0.35	0.60	1.00	1.05	0.85	0.90
75mm (<i>Vapastop</i>)	0.40	0.95	1.15	0.75	0.70	0.90





Condensation & dust protection

When you create an atmosphere of warmth or coolness inside the building or home in contrast to the outside temperature, condensation can form on the underside of the metal roof or wall.

To aid in the control of condensation *Permastop* is faced with a moisture barrier of high quality Sisalation® foil. Not only does the Sisalation enhance the thermal quality of *Permastop* glasswool insulation it also acts as a non-permeable barrier to moisture.

Another bonus is that the transmission of dust is reduced and in bushfire prone areas *Permastop* assists in preventing burning embers from entering the roof space. *Permastop* glasswool insulation is non-combustible.

Meeting the BCA requirements

The BCA (Building Code of Australia) has in place Energy Efficiency Provisions for commercial buildings specifying minimum deemed-to-satisfy insulation levels.

Insulation is a cost effective way of improving a buildings energy efficiency and now most new homes built in Australia are required to incorporate wall and roof insulation.

In Commercial buildings with conditioned spaces in most climatic zones in Australia a Total R-value of R3.2 for roofs and a Total R-value of R1.8 for walls is to be achieved. The provisions apply to class 5 to 9 buildings including offices, shops, warehouses, hospitals and assembly buildings with a conditioned space.

Permastop with Sisalation® foil facing allows you to comply with the BCA Energy Efficiency Provisions for commercial buildings in all climatic zones across Australia.

Permastop also conforms to metal roofing manufacturer's specification and is more cost effective than alternative insulation options.

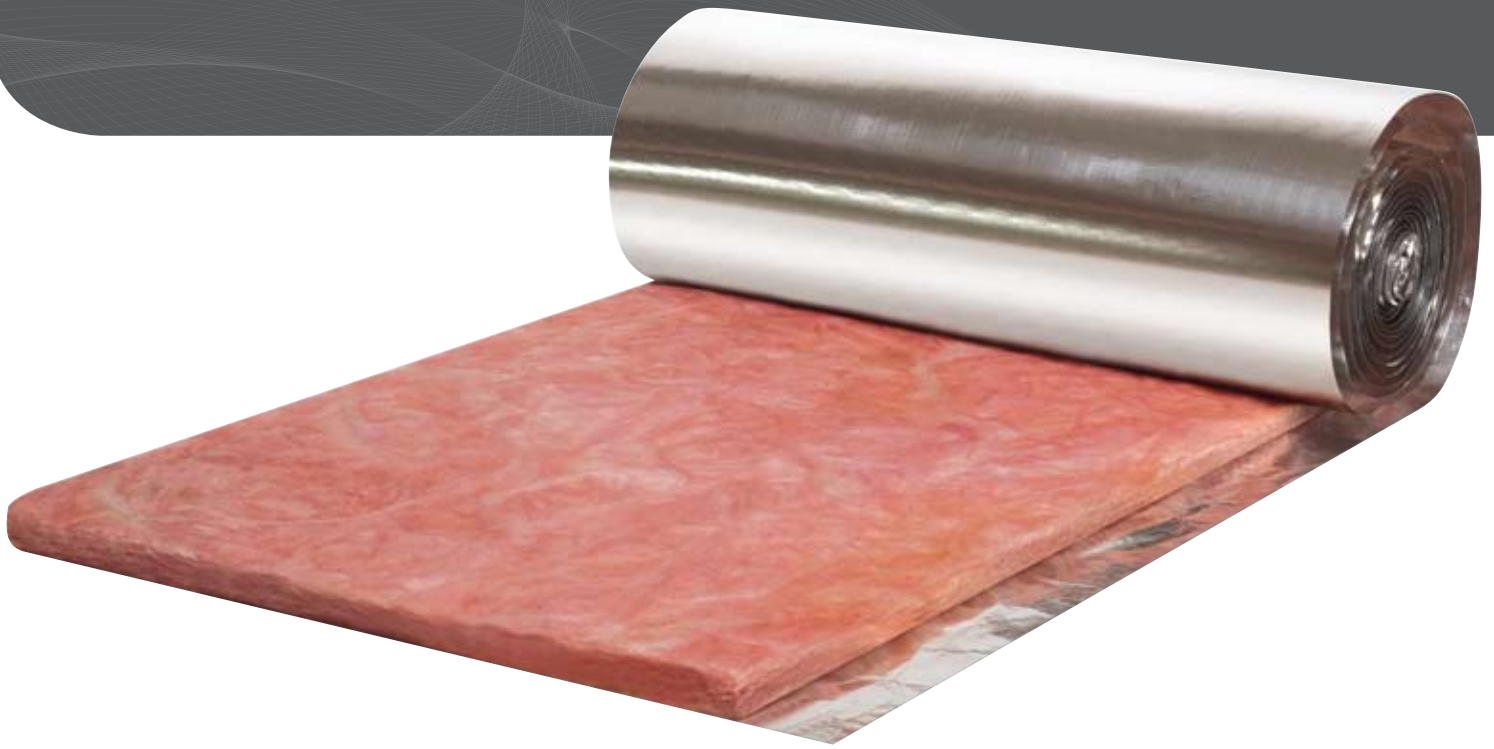


Sustainability

Measures that satisfy the needs of people today while enhancing the quality of life for future generations. The demands on non-renewable resources for the production of energy are not sustainable without compromising the environment. Insulation, correctly specified and installed, is one of the most critical products in improving energy efficiency and thereby reducing the growth of greenhouse gas emissions. Fletcher Insulation™ is committed to providing environmentally sustainable products and utilises approximately 70% recycled glass in the production of glasswool insulation. *Fletcher Insulation* products comply with the Green Star Insulant ODP Emissions credit requirement, avoiding the use of ozone depleting substances in both manufacture and composition.



PERMASTOP®
Making metal roofs better



Quality and performance guaranteed

Permastop glasswool blanket insulation is made in Australia to Australian standards using FBS-1 bio soluble glasswool. *Permastop* has the best possible fire rating when tested to AS1530.3. Early fire Hazard requirements. The glasswool component is non-combustible and the Sisalation® used has a flammability index of less than 5 when tested to AS1530.3.

Guaranteed for the life of the home, *Permastop* is the quality choice of leading builders and roofers.



The right service with cut to length rolls

The need for builders to have the flexibility of ordering *Permastop* at short notice and to have the rolls produced to the exact length required has been answered by *Permastop* now being produced in local centres. Locally produced rolls means efficiency of installation, less wastage and a better end result with a smoother finish. *Permastop* is also available with different facings of Perforated, White and Black. The right product, on time and to your specification makes *Permastop* the right choice everytime.

Glasswool Building Blanket

Fletcher Insulation also produces a general purpose building blanket made from lightweight, flexible and resilient glasswool in several nominal thicknesses, including 55mm, 75mm, 100mm and 130mm providing Material R-values of R1.3, R1.8, R2.5 and R3.0.

Building Blanket provides excellent thermal and acoustic insulation under metal deck roofs and in metal clad walls. Perforated facings can also be laminated to Building Blanket for wall linings in gymnasiums, warehouses, etc.



FLI - 2007
GECA 33-2007 - Building Insulation
www.geca.org.au



NON-COMBUSTIBLE



Permastop® in Residential Homes

STOP Excessive Noise

There's a certain Australian charm about a metal roof. They look great and the sound of gentle rain on the roof is music to the ears for some. It's when the sound of heavy rain or even hail reaches a deafening crescendo that they can be noisy and uncomfortable.

Permastop insulation blanket fixed directly under the metal roof is effective in reducing the noise levels entering homes from rain, hail, aircraft and other outside noises.

75mm *Permastop* can reduce sound transmission through the roof by up to 18dB (A).

Now residential homes can have the character of a metal roof without the compromise.

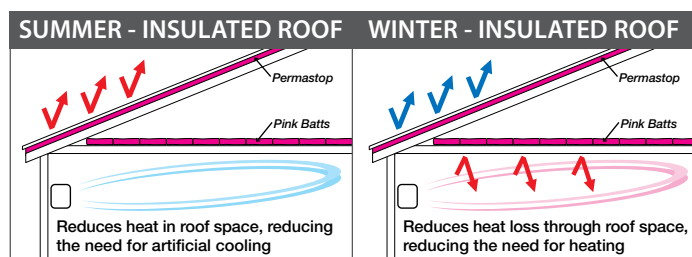
STOP Heating & Cooling Loss

Permastop has the added benefit of providing homes with proven thermal insulation to give you energy savings and makes homes even more comfortable.

Permastop used in conjunction with Pink Batts™ or Fat Batts® in the ceiling gives even more effective insulation performance.

In Australia's hotter areas *Permastop* with Sisalation® reflective foil facing is particularly effective in reducing heat entering the roof space.

Use *Permastop* to maximize your ceiling insulation performance and increase all year round comfort.

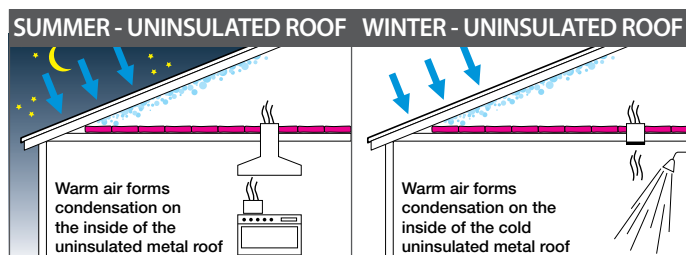


STOP Condensation in Ceilings

Permastop is made with Sisalation® reflective foil facing on one side. This combination acts as an effective barrier against condensation forming on the underside of metal roofs. Especially when warm, moist air is vented into the roof space from bathroom

and kitchen fans and vented range hoods.

Moisture forming inside roof spaces can cause problems with mould forming and cause other forms of water damage to the structure.



STOP High Energy Bills

By using *Permastop* under metal roofs, along with *Pink Batts* or *Fat Batts* in ceilings and walls will help make the home cooler in summer and warmer in winter. Insulation is one of the most cost effective building materials home builders can use to reduce energy bills. Combined with common sense design elements like shading windows from summer sun and weatherstripping doors and windows, homes will be more comfortable and reduces the cost of artificial heating and cooling.



Many Commercial Buildings Require a Total R-Value of R3.2

The following table and map, extracted from the BCA, shows the deemed-to-satisfy roof insulation provisions including the requirement for summer and winter design conditions in the different Climate Zones.

The BCA states that Class 5 to 9 conditioned commercial buildings built in;

Climate Zones 1 – 6

Require a Total R-value of R3.2 in the Summer (heat down) design condition.

Climate Zone 7

Require a Total R-value of R3.2 in the Winter (heat up) design condition.

Climate Zone 8

Require a Total R-value of R4.3 in the Winter (heat up) design condition.



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ROOFS AND CEILINGS - MINIMUM TOTAL R-VALUE FOR EACH CLIMATE ZONE										
Climate Zone		1	2		3	4	5	6	7	8
			Below 300m altitude	At or above 300m altitude						
ROOF Minimum Total R-value	A roof or ceiling generally	3.2							3.2	4.3
Design condition		Summer (heat down)							Winter (heat up)	

A new smart concept in roofing

To achieve a Total R3.2, the insulation blanket needs to be able to recover to its full nominal thickness. In the past the wire safety mesh has been draped between the purlins with enough sag to allow for the insulation. Due to safety and aesthetics this practice is not ideal and now there is a need to create space above the purlin line for the insulation blanket to recover to its full thickness.

This needs to be achieved in a cost effective way that doesn't reduce the productivity and safety of roofing installers. *Fletcher Insulation* have developed the patented *Roof Rack™* system to effectively raise the roof. The *Roof Rack* allows for the roofing clip to be attached either on or off the roof to maintain speed and productivity of the installation. Once the normal clip bar is attached the assembly is simply fixed to the purlins in the usual manner using standard roofing screws and tools.

The elevation of the clip bar allows for the safety wire mesh to be pulled taut improving safety and the finished appearance. This creates the space needed for the insulation to recover to its full nominal thickness which is required to achieve a Total R3.2 rating.

Roof Rack is simple to install, safe to work with and fast to use but most importantly it is the answer to achieving compliance with clause J in the BCA.

Fletcher Insulation is constantly developing innovations to achieve better performance from its insulation products and service. Innovations like the patented *Roof Rack* developed to help roofers achieve the right R-value performance in their roofing projects.

Working with roofing manufacturers and installers, *Fletcher Insulation* realised that it would be ideal if roofers could obtain the three main components to go with the roofing from one convenient, reliable source. The 3 essentials, *Wire Mesh*, *Permastop* insulation and *Roof Rack* are now available as a *Smart Roof Package* from *Fletcher Insulation*.

It's the smart 3 in 1 package for smart roofers.

- Wire Mesh in your choice of lengths and widths.
- High quality *Permastop* roofing blanket with a smoother foil finish locally made in cut to length sizes.
- Patented *Roof Rack*, the fast easy way to comply with energy efficiency requirements in Part J of the BCA.



Statement Of Compliance

Fletcher Insulation manufactures Permastop building blankets in Australia under ISO 9001 quality manufacturing standards and is supplied free of material defects.

Fletcher Insulation Permastop aluminum foil faced blankets have two components:

- FBS-1 Bio-Soluble glasswool blanket in various thicknesses;
- Sisalation® in light, medium or heavy duties that is adhered to cover one side of the blanket.

Permastop building blankets achieve the Declared Material R-values at the following FBS-1 glasswool thicknesses when tested in accordance with AS/NZ 4859.1 as shown here.

Blanket Thickness	Material R-Value
55mm	R 1.3
75mm	R 1.8
100mm	R 2.5
130mm	R 3.0

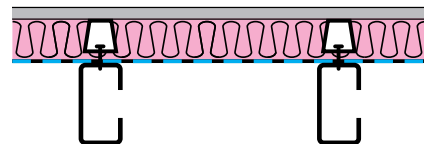
The thermal performance of the reflective air space will vary depending on the installation method. Listed below are several standard applications. The BCA requires commercial buildings in Climate Zones 1 to 6 to be designed for a 'Summer' (heat flow down) condition, while commercial buildings in Climate Zones 7 and 8 are required to be designed for a 'Winter' (heat flow up) condition. For further information on climate zoning please contact Fletcher Insulation.

Application: Flat metal roof with no ceiling

Permastop building blanket installed over purlin support located between cladding & safety mesh incorporating Roof Rack Spacers to allow for blanket recovery to nominal thickness. Metal roof at 0 to 5° pitch, purlins may be at various centres.

TOTAL R-value 100mm = R 2.9 (Winter) R 3.2 (Summer)

TOTAL R-value 130mm = R 3.4 (Winter) R 3.7 (Summer)



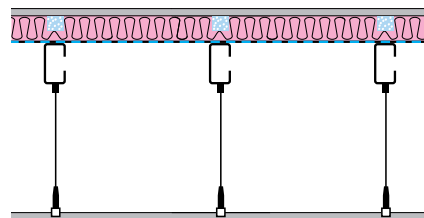
Application: Flat metal roof with suspended ceiling

Permastop building blanket installed over purlin support located between cladding & safety mesh incorporating Deckmate™ Thermal Spacers to allow for blanket recovery to nominal thickness. Air space below foil assumed to be unventilated 100mm to 600mm air space. (Flat metal roof at 0 to 5° pitch)

TOTAL R-value 55mm = R 2.2 (Winter) R 3.3 (Summer)

TOTAL R-value 75mm = R 2.7 (Winter) R 3.8 (Summer)

TOTAL R-value 100mm = R 3.4 (Winter) R 4.5 (Summer)

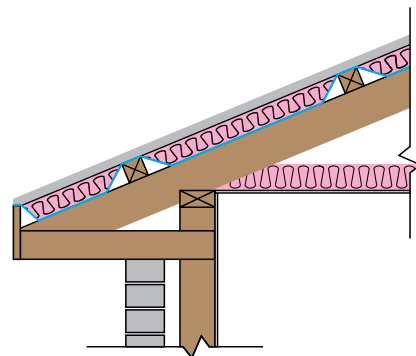


Application: Metal roof at 22.5° pitch with flat ceiling

Permastop building blanket draped over battens allowing full recovery between battens of the product's nominal thickness, with R2.5 Pink Batts installed on 10mm Plasterboard ceiling. Reflective foil faces the Non-ventilated attic space.

TOTAL R-value 55mm = R 4.8 (Winter) R 4.9 (Summer)

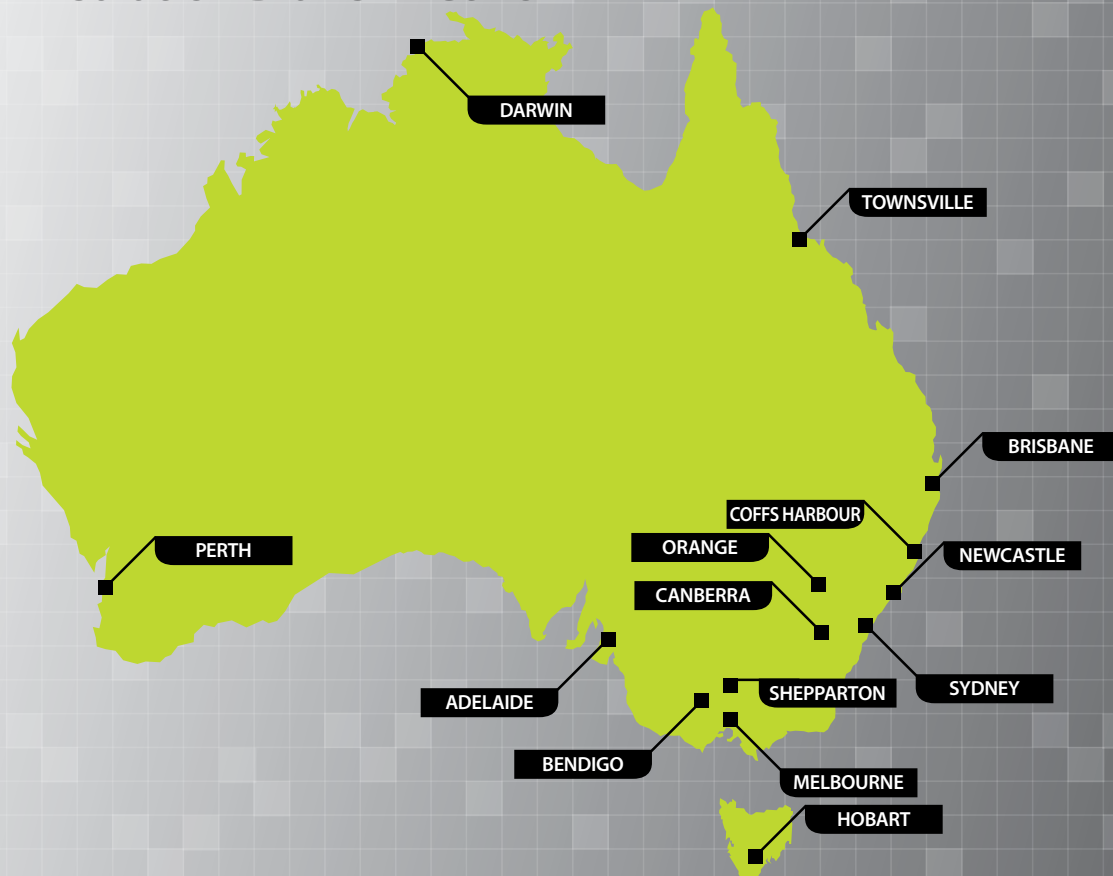
TOTAL R-value 75mm = R 5.3 (Winter) R 5.4 (Summer)



Compliance: This performance report is based on thermal resistance tests and calculations conducted in accordance with AS/NZS 4859.1 (2002) - Amendment 1 (2006).



Fletcher Insulation Branch Network



Branches

New South Wales

SYDNEY (Head Office)

161 Arthur Street, Homebush NSW 2140

Phone 02 9752 9200 Fax 02 9764 3175

SYDNEY (Sales Office)

600 Woodstock Ave, Rooty Hill NSW 2766

Phone 02 9677 4444 Fax 02 9675 2618

COFFS HARBOUR

36B High Tech Road, Toormina NSW 2452

Phone 02 6658 9561 Fax 02 6658 9546

NEWCASTLE

9 Balbu Close, Beresfield NSW 2322

Phone 02 4964 1477 Fax 02 4966 8156

ORANGE

16 Edward Street, Orange NSW 2800

Phone 02 6361 9789 Fax 02 6361 9707

ACT

CANBERRA

Unit 2, 28 Sheppard Street, Hume ACT 2620

Phone 02 6260 2695 Fax 02 6260 2712

Queensland

BRISBANE

91 Stradbroke Street, Heathwood QLD 4110

Phone 07 3120 1100 Fax 07 3879 6076

TOWNSVILLE

760-764 Ingham Road, Bohle QLD 4818

Phone 07 4774 3581 Fax 07 4774 3582

Tasmania

HOBART

95 Albert Road, Moonah TAS 7009

Phone 03 6228 0944 Fax 03 6228 0961

South Australia

ADELAIDE

519-523 Grand Junction Road, Wingfield SA 5013

Phone 08 8340 6400 Fax 08 8243 0024

Victoria

MELBOURNE

Lot 2 Jarrah Drive, Braeside VIC 3195

Phone 03 9580 6900 Fax 03 9587 3220

BENDIGO

81-83 Beischer Street, Bendigo VIC 3550

Phone 03 5444 5088 Fax 03 5444 4207

SHEPPARTON

62 Florence Street, Shepparton VIC 3630

Phone 03 5821 7097 Fax 03 5822 4752

Northern Territory

DARWIN

Unit 1, 2 & 3 / Lot 4920 College Road,

Berrimah NT 0828

Phone 08 8947 3662 Fax 08 8947 3665

Western Australia

PERTH

13-17 Hurley Street, Canning Vale WA 6155

Phone 08 9456 0199 Fax 08 9456 0109

NEED HELP? For further information on Total R-value calculations for typical roof and wall systems performance please contact Fletcher Insulation's Specifier Advisory Service Team on:

TECHNICAL - 1800 000 878 SALES - 1300 654 444

info@insulation.com.au www.insulation.com.au

Additional assistance on Total R-values can also be found in the ICANZ Insulation Handbook at www.icanz.org.au

FletcherTM
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Fletcher Insulation 161 Arthur St, Homebush, NSW Australia 2140

P (02) 9752 9200 **F** (02) 9764 3175 **E** info@insulation.com.au