

FOAMULAR®

Energy-Saving, Moisture-Resistant XPS Insulation



Supporting you with Smart Solutions



“Owens Corning’s Foamular insulation is an extruded polystyrene rigid foam insulation with stable, high insulating values and superior moisture resistance when compared to other types of foam insulation.”

Owens Corning has been producing insulation since 1935 and has been a leading force in the way the insulation industry has developed. Owens Corning is a member of EPA Climate leaders program, and is committed to reducing Greenhouse gas Emissions in the manufacturing process and through product performance.

“Insulation Is One Of The Most Effective Ways To Improve A Buildings Energy Efficiency.”



Austech has been nationally distributing building products for 25 years, and distributes Foamular Australia wide. Austech’s sales and technical team can recommend the best product for your application and help with the specification process.

New South Wales

Austech External Building Products
80 Tattersall Road, Blacktown NSW 2148
PO Box 4208 Marayong NSW 2148
Phone: 02 9831 1623
Fax: 02 9831 5043
Contact: Gus Villablanca
Email: gus@austech.com.au

Tasmania

Austech External Building Products (TAS)
4/8 Melrose Court, Sandy Bay Hobart TAS 7005
Phone/Fax: 03 6225 4003
Mobile: 0438 124 339
Contact: Tony Caldwell
Email: sales-tas@austech.com.au

Victoria and South Australia

Austech External Building Products (VIC)
59 Wadhurst Drive, Boronia VIC 3155
Phone: 03 9887 3699
Mobile: 0439 036 711
Contact: Deane Caldwell
Email: sales@austech-vic.com.au

Western Australia

Austech External Building Products (WA)
4800 Great Western Hwy
Mahogany Creek WA 6072
Phone: 08 9295 0500
Fax: 08 9295 6699
Contact: John Vadala
Email: sales-wa@austech.com.au

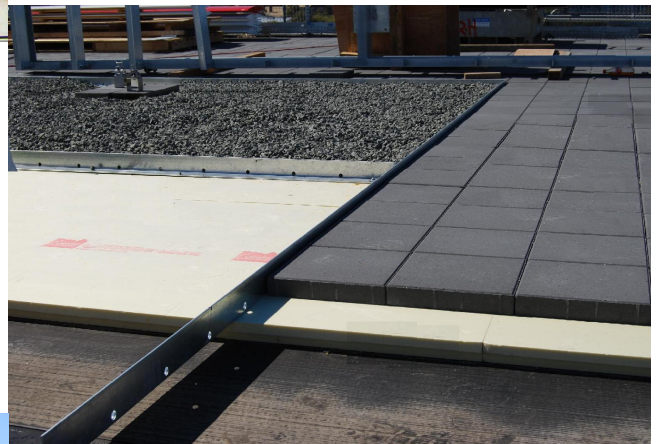
Application: PRMA (Protected Roof Membrane Assembly).



PRMA (Protected Roof Membrane Assembly) is a method of insulating roofs by placing insulation above the waterproofing membrane, therefore protecting the membrane. The insulation is held in place with specified ballast, usually gravel or cement pavers.

Unlike most other insulation, Foamular has a closed cell structure, so it maintains its ability to insulate in the presence of water. This plus its high strength make it excellent insulation for all roofing applications.

**“Good Insulation
Pays For Itself In
Energy Savings”**



Foamular is guaranteed to maintain its physical properties and a minimum 90% R-Value for a period of 20 years. This superior performance and increased membrane protection vastly improves a buildings sustainability, reducing maintenance costs, energy consumption and environmental impacts.

Recommended Material: FM 300-350, 30-100mm (to meet R-values and traffic loads)

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Application: Insulation in Green Garden Roof Assemblies.

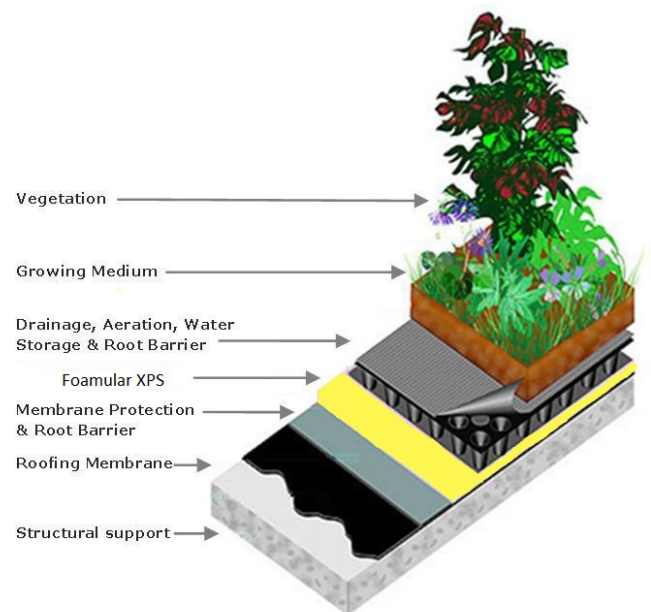


Foamular Extruded Polystyrene is the ideal insulation for a green garden roof assembly. It provided no nutritional value to plants or animals and has guaranteed long term thermal

“Green Roof Gardens Are Carbon Sequestrators, Absorbing Carbon From The Air & Improving Air Quality”

Prolonged contact with the growing medium is not an issue since Foamular is not damaged by contact with soil, moisture, bacteria and other organic compounds.

Foamular's high moisture resistance and superior strengths makes it ideal for protecting the roofing membrane, increasing the roof's life-cycle, plus reducing maintenance costs and energy demands.



Recommended Material: FM 300/350, 75mm [R2.67]

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Foamular Metric XPS in Precast Applications

Foamular Metric XPS Insulation and HK low conductivity ties are specifically designed for use in site cast or precast insulated concrete sandwich panels.

These products provide a fast, efficient cost effective method of improving the thermal performance of concrete buildings.

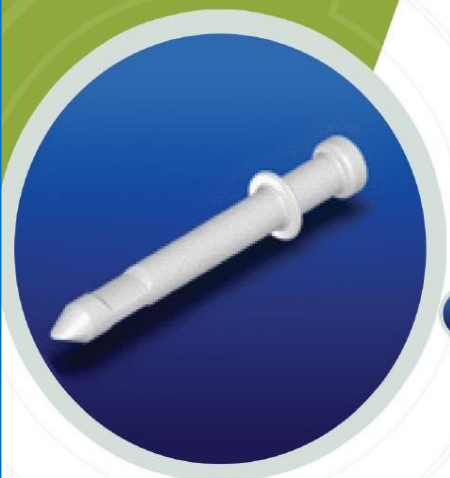
Typical concrete panels must be insulated after casting and erection. Using Foamular Insulation and HK Ties, the panel is insulated during casting, prior to erection. Thus the insulation is integral to the wall.

The result is efficient and cost effective construction.

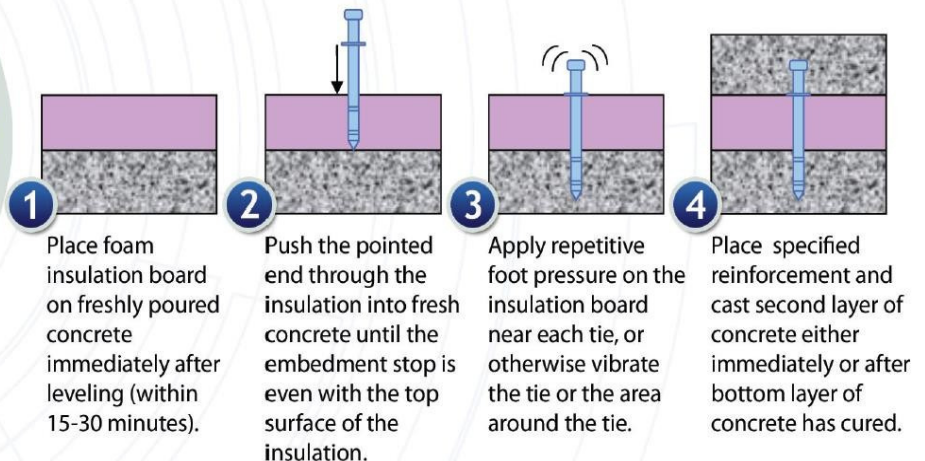
In addition, since the Foamular Insulation is “sandwiched” between two layers of concrete, the panel maintains hard durable concrete surfaces, both inside and out.

Sandwich Panel Connecting Systems

Standard Low-Conductivity Wall Tie



- Holds a face wythe of concrete affixed to the panel without the need for thermally inefficient metal connectors or solid concrete sections
- High strength and low thermal conductivity
- Plastic: high-performance, alkaline resistant, engineered thermoplastic
- In-place temperature range: -40°F to 200°F



Thermal Performance of Insulated Panels

Concrete on its own has virtually no insulation value (1mtr thick concrete = R0.8) compared to 50mm of Foamular XPS at R1.78!

The following example is an indicative 'R' Value of components of a sandwich panel using 50mm Foamular Metric XPS Insulation.

Item

External Air Film	R'0.03
Fascia Whyte 60mm	R' 0.04
Foamular Metric XPS 50mm	R' 1.78
Structure Whyte 140mm	R'0.09
Internal Air Film	R' 0.12
Total 'R' Value @ 24°C	R' 2.06

Thermal mass benefit

- From mid-2012 HK ties have used a new rating tool that allows the thermal mass effect benefit to be converted to an additional R Value.
- Applied to the example above, the total R value (Based on site location) would increase to approx R3.0
- The Australian Concrete and precast association will have a similar rating tool available early 2013.

The Insulation – Foamular Metric Extruded Polystyrene Insulation

Foamular Metric XPS is a closed cell rigid insulation board with high compressive strength, and moisture resistance. This results in guaranteed long term thermal performance.

Compared to expanded polystyrene, Foamular Metric XPS has higher 'R' value per thickness (50mm = R1.78, EPS

50mm = R1.43) and superior water resistance. (moisture absorption reduces thermal values).

Foamular Metric XPS will not absorb moisture from the concrete thus ensuring thermal values are maintained. Foamular Metric XPS is guaranteed to maintain its physical properties and minimum 90% thermal value for 20 years.

HK Connector Ties

- HK Connector Ties are specifically designed for use in insulated concrete wall sandwich panels.
- HK Ties - Low conductive thermoplastic resin pin.
- Manufactured from a high performance, engineered thermoplastic resin, HK Ties feature high strength and low thermal conductivity.
- Unlike other sandwich panel designs which rely on metal or solid concrete connections, the use of HK Ties minimises the effect of thermal bridging and results in a sandwich panel with maximum thermal performance.
- The HK Ties are designed for quick and accurate installation.
- The tensile strength of each HK Connector exceeds the 1100lb - 498kg minimum performance level, which provides a safety factor of 10: 1
- Pullout test results confirm the HK Tie has a high safety factor of approximately 10 during stripping and lifting of panel.

Installation Instructions

Description

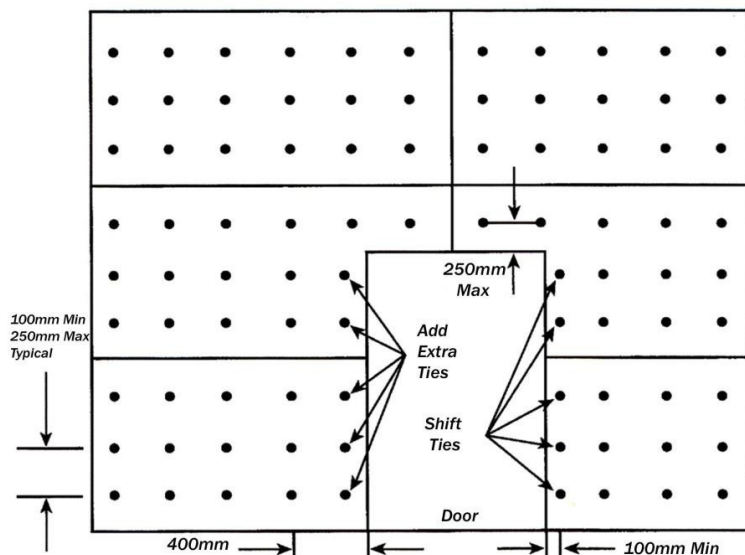
Foamular Extruded Polystyrene (XPS) rigid insulation and *ties are specifically designed for use in tilt-up, site cast and precast panels. Foamular XPS rigid insulation and ties provide a fast, efficient method of insulating walls without compromising the low-maintenance, high durability of concrete walls.

The ties are designed to keep a 75mm fascia layer of concrete affixed to the panel without the benefit of solid sections of concrete.

Applications

The Foamular Metric XPS foam insulation and ties may be used in most tilt-up and precast applications where;

- The fascia, or outside layer of concrete is three inches thick or less.



The panels do not exceed beyond 12mtr above grade.

- The full thickness of the panel, including the fascia is supported.
- The concrete strength at the time of lifting is at least 2,500 psi (17.2 MPa)

Installation

- Place foam insulation board on freshly poured concrete immediately after screeding (within 15 to 30 minutes). The concrete should be level enough to contact the entire surface of the insulation board.
- Insert the ties immediately after placing the insulation board on the wet concrete. Push the pointed end of the tie through the insulation board into the fresh concrete until the embedment stop is even with the top surface of the insulation board. Do not push tie into foam board past embedment stop. Place ties on 400mm centres.
- Promote consolidation of the concrete around the tip of the tie by applying repetitive foot pressure on the insulation ("walking" the board) near each tie, or otherwise vibrating the tie or the area around the tie.

Around Openings

Openings in the wall (eg. for windows) often interfere with the dot pattern printed on the foam. Ties should be no closer than 100mm and no further than 250mm from the edge of the foam. In these cases, you may need to either shift ties away from the openings or add extra ties so this spacing is maintained.

Top or Bottom of Wall

As a result of fabrication, the dots on the board may not reflect proper placement of the ties at the top or bottom of the wall. If the foam has been cut in such a way that the top or bottom row of dots is either closer than 100mm or further than 250mm from the edge, you may need to shift ties away from the edge or add an extra row of ties to maintain proper spacing.

Between Openings

If the insulated wall has two or more openings, or an opening is too close to the panel edge, be sure that the space between them has a least two rows of ties. If necessary, modify the tie spacing so no row is closer than 100mm from the edge of the foam. Extra ties are shipped with each order to facilitate proper spacing. Moving or adding a row of ties is easy with Foamular Metric XPS insulation and ties since the sharp end of the tie will penetrate the foam wherever you need to place it.

Case Studies

Cessnock Corrective Centre

Foamular 40mm insulation and HK ties were used in 4,000m² of precast Walls. Walls were manufactured and erected by Hunter Precast. Tomago NSW.

Westrac Maintenance and Sales Facility Williamstown NSW

Foamular 50mm Insulation was the insulation component for approx. 2500m² of precast panel manufactured and erected by CIA precast Tomago NSW.

Zammit Smallgoods Pendle Hill NSW.

Foamular 75mm insulation and HK Ties were used in 2,600m² of tilt up insulated panels for a new food processing plant, Construction by QTC.

Please Note:

Information in this brochure is an overview of the Owens Corning Pink Core System tested and distributed through Owens Corning America.

In Australia Austech External Building Products Pty Ltd is the National Distributor for Owens Corning Foamular Metric Extruded Polystyrene Insulation.

The Pink Core Ties are manufactured by HK ties USA.

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Application: Masonry/Brick Cavity Wall Insulation

Brick, masonry and concrete walls all benefit from the addition of Foamular extruded polystyrene insulation through improved thermal performance.

These types of construction have low thermal values. Masonry and brick are very good at storing heat but are also very good at transferring heat. Often bricks and masonry will heat up during the day, store that heat and then radiate it back into the house at night. Properly installed insulation can limit this transfer and dramatically improve energy efficiency.



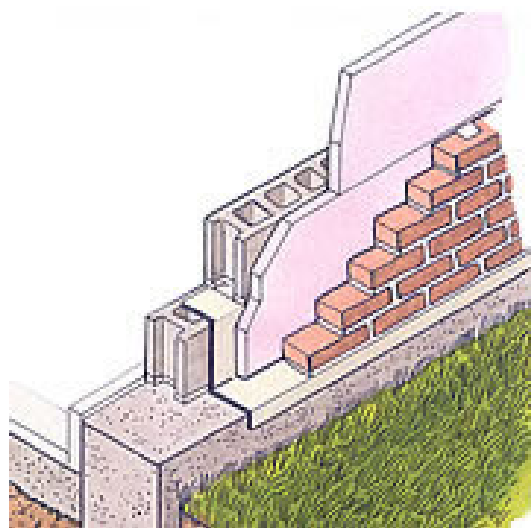
Foamular Extruded Polystyrene is closed celled insulation, so it is not effected by moisture. It can reduce the transfer of moisture and its physical properties are not reduced in the presence of moisture.

As a result of its reduced moisture absorption, it is guaranteed to maintain 90% of its thermal properties for 20 years



A double brick cavity wall has an R-value of only R0.69. In comparison just 30mm of Foamular Extruded Polystyrene has an R-value of R1.07. Combining the two would provide an R-Value of 1.76 and vastly improve the walls thermal performance.

To meet BCA and BASIX requirements, Foamular XPS in various thicknesses can be easily fitted to meet thermal requirements. Highly energy efficient buildings not only save money, but are also worth more money.



Recommended Material: FM 300, 25-50mm (To meet desired R-values)

Application: Residential On Ground Slabs with Floor Heating Systems.

Improved energy efficiency is achieved by using Foamular as a thermal barrier under the slab and around the exposed slab Perimeter.

In simple terms heat will transfer to cooler medium such as the ground and external air. To keep the slab warm a continual supply of energy is required to replace escaping heat.

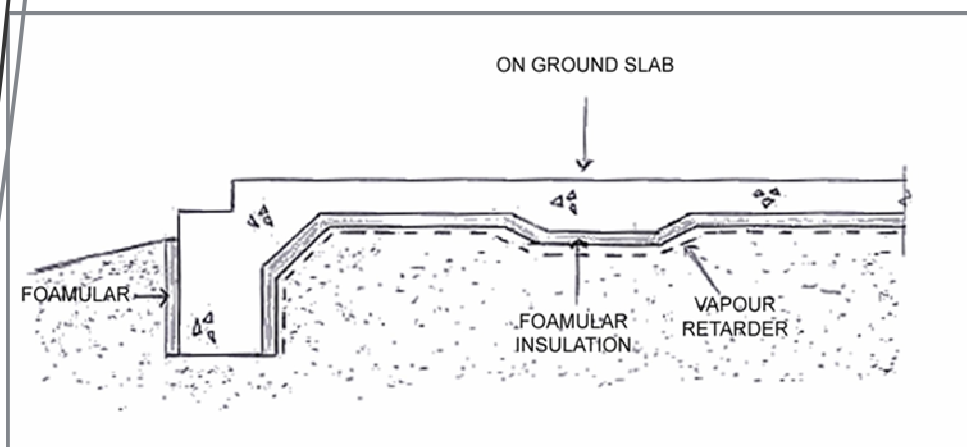


Fixing Foamular as a thermal barrier minimises heat loss so less energy is required to maintain slab temperature.

Long term energy efficiency is achieved by this simple application.

**“Lower Energy Demand = Lower Operating Costs
= Lower Greenhouse Gas Emissions”**

Installation: Foamular is laid directly over the slab area, on top of the plastic sheeting, with supports and reinforcement placed over the Foamular.



As Foamular is not affected by moisture, soil borne bacteria or mould it can be back filled against for gardens etc. with no loss of thermal a physical properties.

Recommended Material: FM 300, 30mm [R1.07], 60mm [R2.14]

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Application: EIFS – Exterior Insulation and Finishing System.

Foamular Extruded Polystyrene is an ideal energy efficient substrate for EIFS, especially suited for new generation PM render finishes. The closed cell construction of Foamular Metric ensures long term thermal performance with virtually no moisture absorption.

Foamular has high 'R' Values (50mm=R1.78) which are guaranteed to not drop below 90% of the original value for 20 years.

“Foamular Minimises Thermal Bridging, Literally Wrapping Your Home In Insulation”



For timber or steel framed construction Foamular Metric XPS is screw fixed directly to the studs, which is 30% more effective than between stud insulation. Foamular is then coated with a polymer modified render system.



This new generation PM render system provides a tough mesh-reinforced, seam-free finish with high impact resistance. Foamular Metric XPS is a strong yet lightweight building material, which ensures quick build time while minimising OH&S risks associated with other cladding substrates.

Recommended Material: FM 300, 30-100mm (To meet desired R-values)

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Application: Cold Storage Floor Insulation.

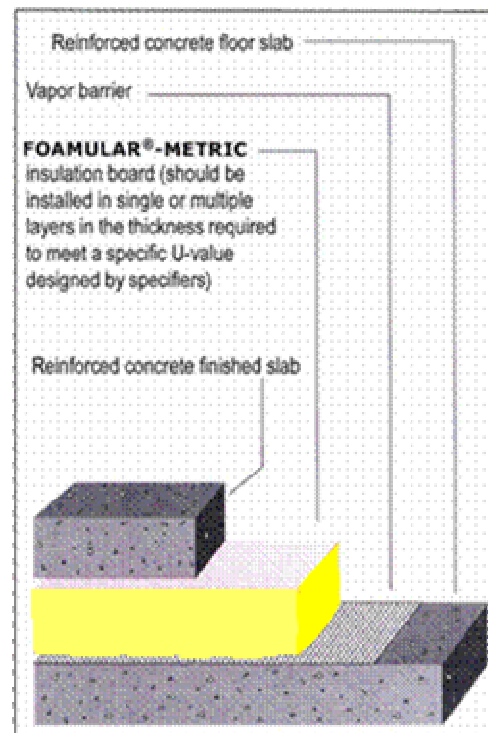
The high compressive strength of Foamular coupled with high thermal performance and moisture resistance make Foamular an ideal material for cold storage floor insulation.

Foamular minimises compressive creep by providing superior support of the slab by minimising deflection, even during exposure to extreme cold and moisture.



“Achieve Increasing Levels Of Energy Efficiency And Reduce Environmental Impacts”

When used in cold storage application, Foamular outperforms most other insulation materials in maintaining insulation performance and supporting the imposed load, minimising the risk of floor damage through expansion and/or contraction.



Recommended Material: FM 300/350, 75&100 mm (Common spec, 2 layers of FM 350/75mm)

Application: Wine Cellar & Wine Storage Insulation.

Successful wine storage requires constant temperature and high humidity, creating some unique problems for insulation. Most insulation would underperform in these conditions, but Foamular is not affected by moisture in the air, so it is ideal for this unique circumstance.



Foamular can be directly fixed to timber, steel, masonry or concrete. Foamular will not aid in the transfer of humidity, which helps protect the adjoining rooms and structures. Foamular is also an ideal substrate for many finishing systems, including render, timber and stone.



“Insulation Is An Investment”

Serious wine storage requires expensive temperature and humidity control, but Foamular’s high R-Values create an effective barrier to temperature fluctuations, reducing the strain on machines and improving energy efficiency.



Recommended Material: FM 300, 30-75 mm (To meet desired R-values)

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