

HIGH PERFORMANCE WATER RESISTANT
EXTERIOR ROOFING INSULATION



RMAX is a division of Huntsman Chemical
Company Australia Pty. Limited
ABN 48 004 146 338

HUNTSMAN

Enriching lives through innovation



RMAX ThermaProof® At Work

RMAX ThermaProof® is a new generation roof insulation developed for applications that require high compressive strength, low moisture absorption and efficient water drainage.

Water absorption has a detrimental effect on the thermal performance of insulation. RMAX ThermaProof® features industry leading water absorption resistance and maintains a consistent R value over its serviceable life. Because of its superior water resistance performance, ThermaProof® is ideally suited to Green, Ballasted and Utility roof decks.

The need for mechanical fixings becomes redundant; the unique interlocking design of RMAX ThermaProof® allows ease of installation on the exterior of the roof making it a more cost effective alternative to soffit insulation.

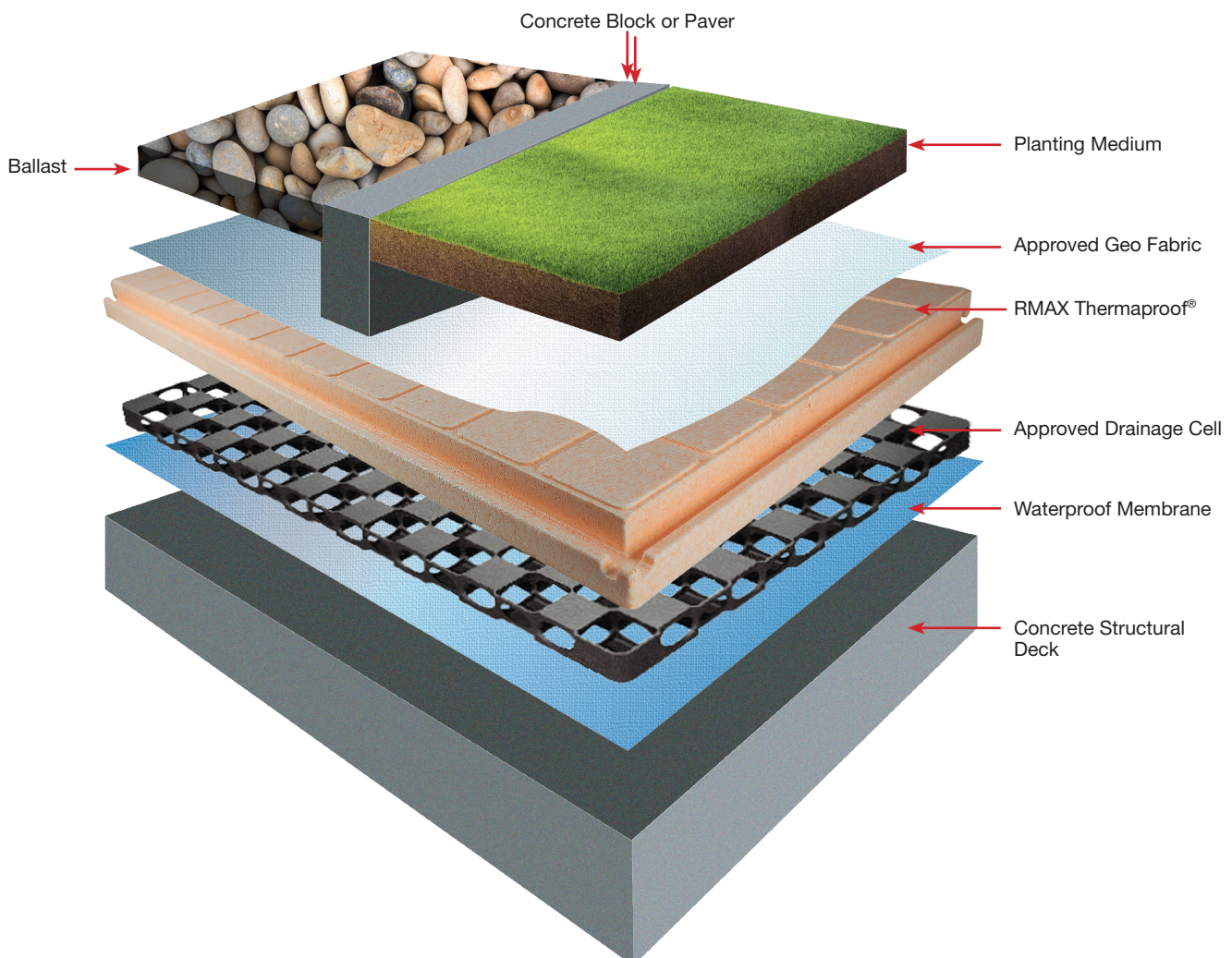
ThermaProof® is free from ozone depleting substances in its manufacture and composition. In keeping with our commitment to the environment and safety, RMAX ThermaProof® requires minimal use of personal protective equipment (PPE) during the installation process.

Single person installation is a real option given the optimal size of the product.

Key Features of ThermaProof®

- Consistent R value for the life of the product
- High compressive strength
- Interlocking joint system
- Integrated water drainage system
- Superior low water absorption properties
- Ease of installation
- Suits new build or renovations
- No mechanical fixings required
- ThermaProof® is manufactured without CFCs, HCFCs or HFCs.

ThermaProof® insulates and protects roofs and roofing membranes. Investing in an RMAX ThermaProof® system will contribute to years of trouble free performance, as this system shields roof membranes from daily temperature cycling and UV radiation that prematurely ages the membrane and affects its ability to repel water.



Why Is RMAX ThermaProof® The Best Insulating System?

Long Term Thermal Consistency

The thermal resistance (R value) of RMAX ThermaProof® insulation remains consistent over the life of the product due to the cellular structure of RMAX ThermaProof® that contains only stabilised air. Ageing has no effect on the insulation performance of RMAX ThermaProof®.

Cost Efficiency

RMAX ThermaProof® allows for very cost effective design and labour friendly installation. RMAX ThermaProof® will assist in increasing the design life of the roof.



Moisture Resistance

ThermaProof® features a revolutionary technology which ensures the moisture absorption is less than 0.1% (significantly less than standard white EPS panel) - refer to Specifications table on page 5 for more information.

RMAX ThermaProof® also offers a high degree of dimensional stability in wet conditions.

Superior Drainage

The 9mm x 3mm channels molded as a grid pattern into the underside of the RMAX ThermaProof® panels allow easy drainage across the top of the membrane. This unique product feature coupled with appropriate roof design will prevent prolonged water/insulation contact.

Positive location lugs molded into the panel edges ensure continuity of the drainage channels from panel to panel. In extraordinary circumstances where water has pooled to a height of 30mm above the ThermaProof® panels for periods in excess of 25 days, there would only be a maximum 10% reduction in the insulation's prescribed R value.

Temperature Cycling Resistance

RMAX ThermaProof® is able to withstand the effects of temperature cycling, assuring long term performance without loss of structural integrity or physical property deterioration.

Strength Characteristics

ThermaProof® is available in a range of densities that can be selected by the designer to withstand the loads of ballast, foot traffic and other items that may be located on the roof.

RMAX ThermaProof® exhibits excellent compressive and flexural resistance strength and dimensional stability characteristics at a high strength to product weight ratio.

The range of density grades available enables the specifier to select the most appropriate balance between structural and insulating properties and cost for any building application.

Breathability

Although RMAX ThermaProof® exhibits low water vapour transmission, it is not a vapour barrier; instead it "breathes". As it does not trap moisture, RMAX ThermaProof® does not need costly venting to be installed as do certain other relatively impermeable insulation materials.



Performance

RMAX ThermaProof® insulation, being made from expanded polystyrene (EPS), is an inert material. It provides no nutritive value to plants, animals or micro organisms. It will not rot and is highly resistant to mildew.

Fabrication and Installation

RMAX ThermaProof® insulation can be installed quickly and easily, requiring limited labour. It can be easily cut to shape to ensure a tight fit and minimise heat loss channels. Its light weight nature allows ease in handling and storage.

RMAX ThermaProof® Installation Process



RMAX ThermaProof® Installation Process

RMAX ThermaProof® insulation is installed above the roofing membrane rather than below it.

Once the roofing membrane is laid across the roof deck the RMAX ThermaProof® sheets are laid over the membrane. The interlocking joint integrated into each sheet allows the ThermaProof® panel to be easily locked together without the need for fasteners. RMAX ThermaProof® panels are easy to handle which means the install process requires minimal time and labour.

RMAX ThermaProof® can easily be cut to shape where necessary ensuring a tight-fitting layer which covers the entire roof and improves the energy efficiency of the building.



Drainage

RMAX ThermaProof® offers superior drainage protection. The underside of each sheet incorporates a grid of small channels and positive location lugs providing a continuity of drainage channels sheet to sheet, as per photo above. Once installed, RMAX ThermaProof® is covered with an approved geo fabric along with suitable ballast to hold the insulation in place and to prevent ultra violet degradation of the insulation.

Fixed Roof Applications

ThermaProof® is traditionally installed on top of a waterproofing membrane. It acts as a protective layer, prolonging the lifespan of the membrane and providing efficient thermal insulation for the space below. Prior to applying a sand and cement screed a layer of suitable builders plastic sheeting should be installed. For applications using a loose ballast, e.g. river pebbles, a suitable geotextile fabric should be installed separating the ThermaProof® from the ballast as per the photo opposite.



Roof Garden Applications

Green roofs and green walls are the hottest urban property trend spreading throughout Australia's capital cities. Flat roofs and open areas such as balconies now present the possibility of conversion into an outdoor habitable space. RMAX ThermaProof® can be used in combination with a modular drainage cell water management system to either dissipate or harvest rain water to be re used for watering plants as per the photo below.



RMAX ThermaProof® Installation Process



After adhering the membrane to the roof deck RMAX ThermaProof® is easily laid using the four sided over lapped joining system.



Geotextile Fabric

A water permeable, ultra violet light and weather resistant material is required to prevent movement of the insulation by water and to minimise the ingress of fines from stone ballast, reducing the potential for blocking of drainage channels.



Ballast

River stones are recommended. The stones should be smooth and range in size from 15mm to 35mm in diameter. As wind loadings are greater at roof edges and parapets, ballast loading needs to be increased in these areas.

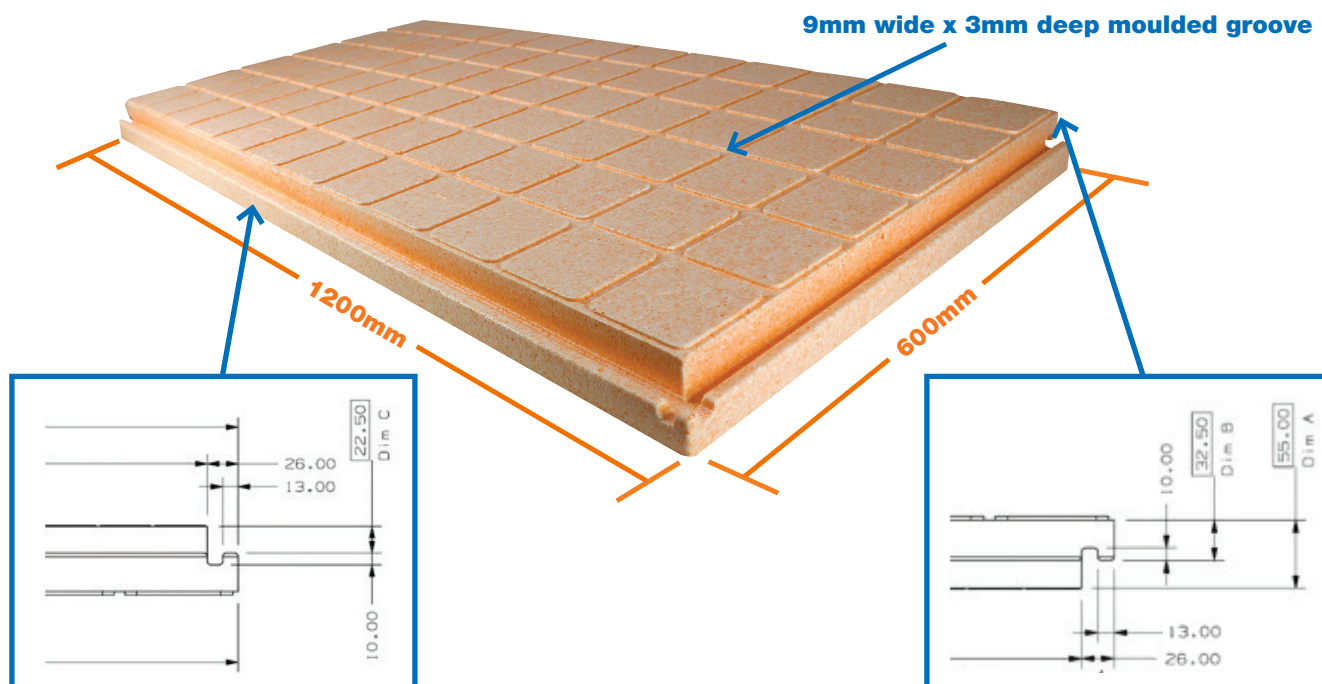


In these same locations paving blocks may also be used as an alternative and they have the added advantage of providing a suitable surface to support roof maintenance traffic.



Technical Specifications

Physical Property	Units	ThermaProof® 28 28kg/m³	ThermaProof® 34 34kg/m³	ThermaProof® 38 38kg/m³	Test Method
Minimum Density					
Compressive strength @10% deformation min.	kpa	165	250	280	AS 2498.3
Cross-breaking strength, min.	kpa	320	400	500	AS 2498.4
Rate of water vapour transmission max. measured parallel to rise at 23°C	µg/m².s	200	200	200	AS 2498.5
Rate of water absorbtion at 23°C over 7 days	%vol.	≤0.1	≤0.1	≤0.1	BS EN 12087
Rate of water absorbtion at 23°C over 28 days	%vol.	≤0.1	≤0.1	≤0.1	BS EN 12087
Dimensional stability of length, width, thickness, max. at 70°C over 7 days	%	0.5	0.5	0.5	AS 2498.6
Thermal conductivity measured at 23°C mean temperature, max.	W/mK	0.035	0.035	0.034	AS/NZS 4859.1
R value for various panel thicknesses. min. 55mm panels	m².K/W	1.57	1.57	1.62	AS/NZS 4859.1
70mm panels	m².K/W	2.00	2.00	2.06	AS/NZS 4859.1
90mm panels	m².K/W	2.57	2.57	2.65	AS/NZS 4859.1
105mm panels	m².K/W	3.00	3.00	3.09	AS/NZS 4859.1
Early fire hazard properties ignitability index scale 0 - 20		0	0	0	AS 1530.3
Spread of flame index scale 0 -10		0	0	0	AS 1530.3
Heat evolved index scale 0 - 10		0	0	0	AS 1530.3
Smoke produced index scale 0 - 10		0-1	0-1	0-1	AS 1530.3
Apparent bulk density, nominal.	g/L	28	34	38	ISO 845
Ozone deleting potential (ODP)		0	0	0	



Tile Nominal Size	Dimension A	Dimension B	Dimension C	Dimension D
55	55	32.5	22.5	58.5
70	70	40	30	73.5
90	90	50	40	93.5
105	105	57.5	47.5	108.5

Physical Property	Units	ThermaProof® 28 28kg/m³	ThermaProof® 34 34kg/m³	ThermaProof® 38 38kg/m³
Minimum Density				
Compressive strength at 10% deformation min.	kpa	165	250	300
R value for various panel thicknesses. min. 55mm panels	m².K/W	1.57	1.62	1.67
70mm thick panels	m².K/W	2.00	2.06	2.12
90mm thick panels	m².K/W	2.57	2.65	2.73
105mm thick panels	m².K/W	3.00	3.09	3.18

Insulation shall be individually molded boards of expanded polystyrene brand named RMAX ThermaProof® as manufactured by RMAX.

The boards shall be 600mm x 1200mm with an overlap joint on all four edges and drainage channels integrally molded into the underside. Positive location lugs will ensure the continuity of the drainage channels board to board.

Grade shall be (Insert desired grade here either 28kg/m³, 34kg/m³ or 38kg/m³)

Panel Thickness (Insert desired thickness here either 55mm, 70mm, 90mm or 105mm)

R value shall be (Insert relevant R value from table above)

Compression strength at 10% deformation shall be 165kpa, 250kpa or 280kpa

RMAX ThermaProof® is a premium roofing insulation product manufactured by RMAX to exceed Class VH of the Australian Standard AS 1366, Part 3-1992 for expanded polystyrene. The unique feature of RMAX ThermaProof® is its water proof Peripor® material which reduces the ability of the panel to absorb or transfer moisture from one side of the panel to the other.

AUSTRALIA

VICTORIA

2-4 Mephan Street
Maribyrnong VIC 3032
Telephone: 1300 888 972
Facsimile: +61 3 9318 2077

WESTERN AUSTRALIA

5 Baldwin Street
Kewdale, WA 6105
Telephone: 1300 888 972
Facsimile: +61 8 9353 2002

NEW SOUTH WALES

27 Chifley Street
Smithfield NSW 2164
Telephone: 1300 888 972
Facsimile: +61 2 9604 7747

NEW ZEALAND

Barnes

368 Church Street,
Penrose, Auckland 1061
Phone +64 9 579 9725
Fax +64 9 579 0472

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The Green Aspect

The RMAX ThermaProof® range of products are highly energy efficient. The energy saved over the lifetime of RMAX ThermaProof® in reduced heating demand, more than compensates for the raw material used in its production.

The effective application of EPS insulation can cut carbon dioxide emissions by up to 50%. The energy used in its manufacture may be recovered within six months by the energy saved in the buildings when EPS is used to insulate the building depending on the building design and the climatic conditions.

RMAX promotes the use of EPS, with its' superior thermal insulation properties, to lower energy requirements and reduce the impact of buildings on the environment.

RMAX EPS is free from ozone depleting substances in manufacture and composition. EPS is manufactured without CFCs, HCFCs or HFCs. Manufacturing is done with blowing agents that have Zero Ozone Depleting Potential (ODP).

Recycling EPS

EPS products are recyclable and RMAX has established recycling facilities in all of its plants throughout Australia. RMAX is a member of PACIA (Plastics and Chemical Industries Association).

Energy Efficient Manufacture

The manufacture of EPS is a low pollution process. There is no waste in production as all off cuts or rejects are re-used or recycled.

RMAX – Innovation Working for You

RMAX is a company driven by innovation. We have pioneered Rigid Cellular Plastics product technologies, leading the development of innovative product solutions for our customers and international partners.

We are committed to working with our customers to deliver high quality creative solutions to unique construction problems. Contact us and see how our innovative approach using EPS in building construction can help you.

Developed in Australia. Made in Australia.

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The pictures shown in this brochure are for illustrative
purposes only to demonstrate creativity and design
and construction flexibility. They do not imply that
ThermaProof® was used in their construction