

# ***ProTherm***

## **PIR FOIL**

# Product Data Sheet



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A rigid Polyisocyanurate (PIR) foam insulation for use in single ply roofing-systems on suitable surfaces.

## Product Data Sheet

### General Information

**ProTherm PIR FOIL** is a rigid Polyisocyanurate (PIR) foam insulation for use in single ply roofing-systems on suitable surfaces. ProTherm PIR FOIL is a rigid Polyisocyanurate (PIR) foam core faced with an aluminium foil face composite on both sides. The PIR foam core is temperature tolerant and withstands the application of hot bitumen to the surface temperature of 240°C. For use with mechanically fastened warm roof waterproofing such as EshaPlan MF, EshaUniversal and EshaFlex MF.

For a comprehensive NBS J42 or J41 specification contact Radmat Building Products.

ProTherm PIR FOIL is compliant with BS 4841-4:2006.  
See BBA Certificate 16/5341.

### Installation Instructions

ProTherm PIR FOIL is mechanically fastened over the EshaBase SA Alu 2mm, EshaBase SA Alu 4.2mm or prepared existing roof surface. Individual ProTherm PIR FOIL boards should be laid with the mineral filled glass tissue side up with edges butted and in a break bond pattern laid at right angles to the edges of the roof or diagonally across the roof.

When applying ProTherm PIR FOIL on existing bituminous or sanded substrate the surface must be prepared in accordance with the project specific guidelines provided by Radmat.

All installation to be according to guidelines and specifications supplied by Radmat Building Products.

### Delivery conditions

#### Delivery form

ProTherm PIR FOIL packs area stretch wrapped in recyclable polythene with various board quantities per one-way pallet depending on thickness

#### Storage and transport

ProTherm PIR FOIL boards should be stored in a flat, dry area off the ground away from mechanical damage and sources of ignition. Boards should be completely covered with weatherproof sheeting. The boards must be kept dry at all times, boards wetted accidentally must be replaced or allowed to dry fully before application of the waterproof layer. The boards must be protected from prolonged exposure to sunlight and should be stored either under cover or covered with opaque polyethylene sheets.

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Product description																			
Appearance top/bottom side	Aluminium foil composite																		
Core	Polyisocyanurate (PIR) foam																		
Declared performance																			
Ozone Depletion Potential	Zero																		
Global Warming Potential	3																		
BRE Green Guide Rating	A																		
Compressive Strength	Typical compressive strength for the foam exceeds 150KPa when tested to BS EN 826: 1996 Thermal Insulating Products for Building Applications-Determination of compressive behaviour.																		
Density	PIR foam has a typical density of 31 kg/m <sup>3</sup>																		
Durability	The product is stable, rot proof and durable and will remain effective as an insulation system at least as long as that of the waterproof covering. Durability depends on the method of application, the supporting structure and conditions of use.																		
	The insulation core and facings resist attack by mould and microbial growth, and do not provide any food value to vermin.																		
Resistance To Solvents - Foam	ProTherm PIR FOIL resists attack from dilute alkalis and acids, mineral oil and petrol. The foam is not resistant to ketonic solvents. Damaged boards should not be used.																		
Thermal Conductivity	The thermal conductivity ( $\lambda$ value) of the foam varies 0.022 W/mk: Typical U values for the range within given constructions are shown in Table 1.																		
Water Vapour Resistance	The insulation core has a water vapour resistance of 40MNs/g/m* and will, therefore, provide resistance to water vapour transmission. This will minimise both surface and interstitial condensation. The necessity for the inclusion of a water vapour control layer in the roof construction should be assessed in accordance with BS 6229:2003 Code of Practice for flat roofs with continuously supported coverings.																		
Dimensions	Width: 1200mm Length: 2400mm Thickness: as shown in Table 1																		
Typical Weight	Typical weight of a 120mm thick board is 11.8 kg																		
Fire	Achieves BS476-7: 1997 Class 1 rating for surface spread of flame. Finished with 3 layer built-up felt and chippings, the roof will attain an FAA rating when tested to BS 476: 1988 External Fire Exposure Test. Further details on the fire performance may be obtained from Radmat Technical Services.																		
Roof Loading	Depending on the chosen waterproofing system, EshaTherm PIR FOIL is suitable for use on roof decks that are subject to limited maintenance foot traffic. Walkways should be provided on roofs requiring regular pedestrian access. The roof should be boarded out with protective boarding whenever site work is to take place after the roof board has been laid and the roof made watertight.																		
Spanning Metal Decks	<p>ProTherm PIR FOIL laid over metal decks must not exceed:</p> <table> <thead> <tr> <th>Trough Opening</th><th>Insulant thickness</th></tr> </thead> <tbody> <tr> <td>&lt; 75</td><td>25</td></tr> <tr> <td>&gt;75      ≤100</td><td>30</td></tr> <tr> <td>&gt;75      ≤125</td><td>35</td></tr> <tr> <td>&gt;125     ≤150</td><td>40</td></tr> <tr> <td>&gt;150     ≤175</td><td>45</td></tr> <tr> <td>&gt;175     ≤200</td><td>50</td></tr> <tr> <td>&gt;200     ≤225</td><td>55</td></tr> <tr> <td>&gt;225     ≤250</td><td>60</td></tr> </tbody> </table> <p>On metal decks the long edges should be at right angles to the corrugations. All board joints should be fully supported by the deck. Please refer to BS 4841-4:2006 for details of thickness of board over metal trough openings.</p>	Trough Opening	Insulant thickness	< 75	25	>75      ≤100	30	>75      ≤125	35	>125     ≤150	40	>150     ≤175	45	>175     ≤200	50	>200     ≤225	55	>225     ≤250	60
Trough Opening	Insulant thickness																		
< 75	25																		
>75      ≤100	30																		
>75      ≤125	35																		
>125     ≤150	40																		
>150     ≤175	45																		
>175     ≤200	50																		
>200     ≤225	55																		
>225     ≤250	60																		

This information given in good faith and is based on the latest knowledge available to Radmat Building products Ltd. Whilst every effort has been made to ensure that the contents of the publication are current while going to press, customers are advised that products, techniques and codes of practice are under constant review and liable to change without notice.

For further information on Radmat products and services please call **01858 410372**, email [tech enquiries@radmat.com](mailto:tech enquiries@radmat.com) or visit our website [www.radmat.com](http://www.radmat.com)

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**Table 1, Typical U values for the range within given constructions**

Thickness (mm)	Length (mm)	Width (mm)	R Value (m <sup>2</sup> k/W)	Typical U value on metal deck (W/m <sup>2</sup> k)	Typical U value on Concrete deck (Wm <sup>2</sup> k)	Typical U value on Timber deck (W/m <sup>2</sup> k)
30*	2400	1200	1.36	0.67	0.63	0.53
40*	2400	1200	1.82	0.51	0.49	0.43
50	2400	1200	2.27	0.42	0.40	0.36
60*	2400*	1200	2.73	0.35	0.34	0.31
70*	2400	1200	3.18	0.30	0.30	0.27
80	2400	1200	3.64	0.27	0.26	0.24
90	2400	1200	4.09	0.24	0.23	0.22
100	2400	1200	4.55	0.22	0.21	0.20
110	2400	1200	5.00	0.19	0.19	0.18
120	2400	1200	5.46	0.18	0.18	0.17
130	2400	1200	5.91	0.17	0.16	0.16
140*	2400	1200	6.36	0.15	0.15	0.15
150*	2400	1200	6.82	0.14	0.14	0.14
160*	2400	1200	7.27	0.14	0.13	0.13
170*	2400	1200	7.73	0.13	0.13	0.12
180*	2400	1200	8.18	0.12	0.12	0.12
190*	2400	1200	8.64	0.11	0.11	0.11
200*	2400	1200	9.09	0.11	0.11	0.11

\* Made to order. May be subject to extended lead time and minimum order quantities. Please call to confirm before quoting.

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