



# Jablite Premium Green Roof Insulation

## Flat Roof Insulation – Protected Membrane Roofs

Jablite Inverted Roof Insulation is a unique innovative closed cell expanded polystyrene (EPS) with low water absorption properties

- **KIWA Certified (BAR-19-098-S-A-UK)**
- **Suitable for use on flat roofs with zero pitch and slopes up to 10°**
- **Resistant to the effects of freeze/thaw**
- **High compressive strengths available – 200 and 300 grade and 200 Premium+ to suit the green roof specification**
- **Global Warming Potential <5**
- **Ozone Depletion Potential = Zero**



The insulation boards are loose laid over the weatherproofing, there is no requirement to adhere or mechanically fix the boards. Jablite Filter Membrane and selected build up of the green roof to secure the insulation to the deck.

EPS is compatible with and can be laid directly onto hot melt and bitumen based weathering membranes. See installation details for advice on other membrane types.

Jablite Inverted Roof Insulation is manufactured in accordance with BS EN ISO 13163 under a Quality Assurance System approved to BS EN ISO 9001 and Environmental Management System to ISO 14001.

The system is a lightweight and easy to install solution. There are no requirements for special PPE when installing or cutting the insulation panels.

### Dimensions

<b>Size</b>	1200 x 1200mm (with 15mm rebated edges) Board coverage 1.44m <sup>2</sup>
<b>Thickness</b>	Single thickness 50mm up to 240mm (in 5 mm increments)

### Application This information is provided as guidance only, please refer to the compressive strengths table (shown later)

Access	Product Selector	Inverted Roof 200 Premium	Inverted Roof 200 Premium+	Inverted Roof 300 Premium
Pedestrian	Non-trafficked Roofs	✓*	✓*	✓*
	Roof Terraces & Balconies	✓*	✓*	✓*
	Green Roofs	✓*	✓*	✓*
	Tapered	✓*	✓*	✓*

\* For details please refer to KIWA certificate number BAR-19-098-S-A-UK





**PROPERTIES**

Inverted roof	200 Premium	200 Premium +	300 Premium
<b>Mechanical properties</b>			
Design load at 10% nominal compression (kN/m <sup>2</sup> )	200	200	300
Design load at 1% nominal compression (kN/m <sup>2</sup> )	90	90	120
Design Loads for Long Term Compressive Creep (kN/m <sup>2</sup> )	60	60	90
Bending Strength (kN/m <sup>2</sup> )	250	250	450
<b>Thermal Properties</b>			
Corrected Thermal Conductivity (W/mK)	0.035*	0.033*	0.035*
<b>Moisture Properties</b>			
Long term water absorption by immersion to BS EN 12087	≤ 1%		
Long term water absorption by diffusion to BS EN 12088	≤ 1%		
<b>Fire Performance</b>			
Classification to BS EN 13501-1	Euroclass E (BS EN 13501-1)		

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**Compressive Strength**

Jablite supplies insulation boards in a range of grades suitable for all flat roof applications.

Jablite Premium Green Inverted Roof 200 and 300 Premium and 200 Premium+ have adequate resistance to the loads associated with light maintenance traffic on roofs, and to pedestrian foot traffic on balconies and roof terraces. Jablite Premium Inverted Roof 500 and 600 is available for higher loading requirements.

Where paving slabs are to be placed over the insulation on spacer pads the point loads should be calculated to an equivalent uniformly distributed load (See example calculation below).

**Example Point Load Calculation**

The 1% compressive strength value should be used when designing for roofs with pedestrian traffic or other temporary imposed loads.

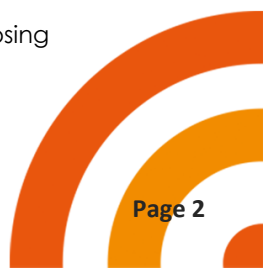
Roof Load on Paving Slabs – 1.0 kN	Convert paving slab weight to kN = 16 x 0.00981 = 0.157kN
Paving Slabs – 450 x 450 x 40mm	Roof load on one slab = 1.157kN
Weight of one Paving Slab – 16kg	Area of one support pad = 3.142 x (0.075 <sup>2</sup> ) = 0.0176m <sup>2</sup>
Circular Corner Support for Paving Slabs	Load on Jablite Inverted Roof through paving slab support =
- 150mm diameter (one per corner)	1.157kN ÷ 0.0176m <sup>2</sup> = <b>65.74 kN/m<sup>2</sup></b>

Therefore Jablite Inverted Roof 200 would be specified having a design load of **90kN/m<sup>2</sup>** at 1% nominal compression.

**Designing for Long Term Compressive Creep**

On a roof where air handling units, water tanks or similar heavy items are to be permanently installed imposing extra load on the insulation the calculation should allow for compressive creep.

The design load to use for Jablite Inverted roof insulation for this application is 30% of the 10% compressive strength figure. This will result in less than 2% compression in the insulation boards over 50 years.





## ACCESSORIES

### Jablite Filter Membrane

The Jablite Filter Membrane is a breathable, non-woven polypropylene flexible membrane supplied as part of the Inverted Roof Insulation System to minimise cold rainwater flow below the insulation which might lead to potential heat loss.

Jablite Filter membrane also acts as a filter layer reducing the migration of fines and other debris from the layers above.

<b>Jablite Filter Membrane:</b>	Roll Length (m)	100
	Roll Width (m)	3.0
	Water Vapour Resistance	0.011
	to BS EN ISO 12572 (MNs/g)	

## ACCREDITATION

<b>KIWA</b>	Jablite Flat Roof Inverted Boards have been tested and approved for use in inverted roofs with pedestrian traffic, balconies and terraced roof, extensive green and brown roof constructions with zero pitch and slopes up to 10° See KIWA certificate number BAR-19-098-S-A-UK for further information
<b>NHBC</b>	NHBC accept the use of Jablite Flat Roof Inverted Boards, provided they are installed, used and maintained in accordance with the KIWA Certificate, in relation to NHBC Standards, Chapter 7.1 Flat Roofs and Balconies
<b>CE marking</b>	Jablite have taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13163:2012. Declaration of Performance is available on Request.
<b>Quality</b>	All Jablite products are manufactured in production facilities which are certified to ISO 9001 Quality Management
<b>Environmental Responsibility</b>	All Jablite manufacturing facilities are ISO 14001 certified. We operate an Environmental Management System which includes our supply chain (see BREEAM section for more information)
<b>Compliance</b>	Jablite Inverted Roof Insulation conforms to the required properties as defined in BS EN 13163:2012 – Thermal insulation products for buildings – Factory made expanded polystyrene (EPS) products – Specification. This includes compliance with BS 3837 Part 1



## INSTALLATION DETAILS

### Deck

The roof deck must be level and even and as dry as is practically possible. Ensuring a dry deck reduces the risk of high levels of condensation once the insulation and weatherproofing is installed.

Further information on condensation control and vapour control layers can be found in BS 6229 : 2018 and BS 5250:2011+A1:2016

Existing decks must be free of loose chippings and any defects made good prior to laying the weatherproofing in accordance with the manufacturers instructions.

The weatherproofing may be hot melt, bitumen felt, mastic asphalt, single ply (PVC, TPO, EPDM) or liquid applied polyurethane.

Note that where a PVC single ply membrane is used an isolating layer such as polyester fleece or fiberglass fabric sheet must be installed between the insulation and the membrane.



### Insulation

Jablite Inverted Roof Insulation is installed loose laid over the weatherproofing, ensuring all overlap joints are tightly butted together.

Boards are laid in a staggered pattern starting from the point of access to the roof.

### Filter Membrane

Jablite Filter Membrane is loose laid with unsealed laps over the insulation running across the fall of the roof, overlapped by a minimum of 300 mm in the downward direction of the roof slope.

The membrane is turned up at all roof penetrations and upstands to a height to ensure it finishes above the level of the ballast or paving and turned downwards at drainage outlets.

Jablite Filter membrane should be covered as soon as possible with the designed finish according to the project specification.

The GRO (Green Roof Code) contains aspects to consider when designing and specifying the waterproofing system of a brown roof and an extensive green roof

The use of chemicals (for example weed killers) should be checked for compatibility with the insulation, Jablite Filter Membrane and the deck waterproofing layer.

Note: Jablite EPS products are compatible with all common building materials. Direct contact with hydrocarbons and strong solvents should be avoided. A suitable membrane such as polythene sheet may be used to separate Jablite EPS from these substances.



## U-VALUES

### Typical U-values

The table below shows thickness of Jablite Inverted Roof Insulation range required to achieve U values from 0.25 W/m<sup>2</sup>K down to 0.10 W/m<sup>2</sup>K. The calculation takes into account a correction is based on an inverted roof construction of 150mm reinforced concrete deck, hot melt waterproofing, Jablite Inverted Roof Insulation, Jablite Filter Membrane, drainage factor  $f_x = 0.001$  and average rate of precipitation (P) ≤ 3.000 (mm/day)

U Value	THICKNESS (mm)		
	200 Premium*	200 Premium+*	300 Premium*
0.25	135	125	135
0.24	140	130	140
0.23	145	140	145
0.22	150	145	150
0.21	160	150	160
0.20	165	160	165
0.19	175	165	175
0.18	185	175	185
0.17	195	185	195
0.16	210	195	210
0.15	220	210	220
0.14	235	225	235
0.13	255	240	255
0.12	275	260	275
0.11	300	285	300
0.10	330	310	330

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