



Jablite Flat Roof Insulation

Flat Roof – Tapered Warm Deck Insulation

Jablite Flat Roof insulation is a closed cell expanded polystyrene (EPS) insulation panel suitable for use in warm flat roof constructions.

- BBA Certified – 01/3812 Product Sheets 1 and 2
- Available as a tapered insulation scheme with our full design service
- High compressive strengths available – 100, 150, 200, 300, 350, 400, 500 and 150 HP to suit all applications
- Global Warming Potential <5
- Ozone Depletion Potential = Zero



The boards are available as un-faced EPS for use with fleece backed single ply PVC membranes or with a laminate to suit alternative weather proofing specifications, for example; EPDM, Bituminous Felt and Liquid Applied membranes. (see product Selector below)

Jablite Flat Roof Board is lightweight and easy to install. There are no requirements for special PPE when installing or cutting the insulation panels. (full installation details are shown later)

Jablite Flat 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.

Dimensions

Standard Board Sizes	1200 x 1200mm 1200 x 900mm 1200 x 600mm
Thickness	20mm up to 600mm In 5mm increments (single layer)

Compressive Strength

Due to the high compressive strength capability of Jablite Flat Roof Board there is a grade suitable for all flat roof applications.

General guidance on application, as noted within our BBA Certificates, is that Jablite Flat Roof Board 100 is used on flat roofs subject to maintenance traffic. Jablite Flat Roof Board 150 is used for balconies and roof terraces.

For roofs where heavy objects such as planters or air handling units are imposing high point loads the higher grades may be specified.

The choice of grade will be dependent on the calculated imposed load. Where the heavy objects are supported on spacer pads the point load exerted on the insulation should be calculated to an equivalent uniformly distributed load. Example calculation for an air handling unit on spacer pads is shown later.

To help in the assessment of which grade to specify or use the compressive strengths for all grades are given in the table on the next page.



PROPERTIES :

Grade	Thermal Conductivity (Lambda) (W/mK)	Design load at 1% nominal compression (kPa)	Design load at 10% nominal compression (kPa)
Flat Roof Board 100	0.036	45	100
Flat Roof Board 150	0.035	70	150
Flat Roof Board 200	0.034	90	200
Flat Roof Board 250	0.034	100	250
Flat Roof Board 300	0.033	120	300
Flat Roof Board 350	0.033	140	350
Flat Roof Board 400	0.033	160	400
Flat Roof Board 500	0.033	190	500
Flat Roof Board HP 150	0.031	70	150

Designing for Long Term Compressive Creep

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

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

Jablite Insulation has been tested and assessed for long term compression in accordance with BS EN ISO 1606 – Thermal insulating products for building applications. Determination of compressive creep.

The design load allowing for creep is 30% of the 10% compressive strength figure.

Under this design load the Jablite Flat Roof Board will compress less than 2% of its original thickness over 50 years.

Design Loads for Long Term Compressive Creep (kN/m ²)	
Flat Roof Board 100	30
Flat Roof Board 150	45
Flat Roof Board 200	60
Flat Roof Board 250	75
Flat Roof Board 300	90
Flat Roof Board 350	105
Flat Roof Board 400	120
Flat Roof Board 500	150
Flat Roof Board HP150	45

Example Point Load Calculation

Air Handling Unit – 2000kg

Square Spacer Pads – 300 x 300mm x 4No

Convert AHU weight to kN = $2000 \times 0.00981 = 19.62\text{kN}$

Area of four support pads = $0.300 \times 0.300 \times 4 = 0.36\text{m}^2$

Load on Jablite Flat Roof Board through support pads = $19.65\text{kN} \div 0.36\text{m}^2 = 54.50 \text{ kN/m}^2$

In this instance the load of the AHU has been spread sufficiently by using large spacer pads to enable Jablite Flat Roof Board 200 to be used as the insulation, allowing for compressive strength for creep at 60kN/m².





APPLICATION – Product Selection

	Flat Roof Board	Flat Roof Board High Performance (HP)	Flat Roof Board B 3B	Flat Roof Board B HP	Flat Roof Board B HP Torch	Hybrid 25	Hybrid 30
Tapered Insulation	✓	✓	✓	✓	✓	✓	✓
Single Ply – PVC	✓	✓				✓	
Single Ply – TPO	✓	✓				✓	
Single Ply – EPDM (Rubber)			✓			✓	
Liquid Applied			✓	✓		✓	
Built up Felt			✓*	✓	✓		✓

* 3B – Requires an overlay of some description bitumen impregnated fibreboard/perlite

Weatherproofing

The choice of Jablite Flat Roof Insulation product is largely dependent on the weatherproofing membrane to be used on the site.

Jablite Flat Roof Board is available unfaced and faced with a range of laminates to make a high performance insulation panel suitable for all applications.

The following shows standard weatherproofing membranes currently available and the appropriate Jablite product for use with each membrane type.

Single Ply – PVC (fleece Backed)	Flat Roof Board
	Flat Roof Board High Performance (HP)

Fleece backed Single Ply PVC weathering membranes may be installed directly onto un-faced Jablite Flat Roof Board and Flat Roof Board High Performance (HP).

Most PVC single ply membranes are available with proprietary adhesives as part of the system supplied by the membrane manufacturers. Adhesives used with un-faced Jablite Roof Board must be solvent free, the typical adhesive type used is polyurethane based spray.

Single Ply – PVC (no backing)	Flat Roof Board Hybrid 25
--------------------------------------	---------------------------

Hybrid 25 is a laminated flat roof insulation board with our Jablite Flat Roof Board, factory bonded to a 25mm thick fibre faced PIR panel. The laminate provides separation from the membrane and protection during installation of the weatherproofing.



APPLICATION – Product Selection (cont'd...)

Single Ply - TPO	Flat Roof Board
	Flat Roof Board High Performance (HP)
	Flat Roof Board Hybrid 25

Where a TPO membrane is to be mechanically fixed or fully adhered with a solvent free adhesive our un-faced Flat Roof and High Performance Boards may be used.

Hybrid 25 is recommended where solvent based adhesives are to be used with this type of membrane. There is no requirement to provide a separation layer between the Jablite insulation and the membrane other than protection against solvent attack.

Single Ply – EPDM (rubber)	Flat Roof Board B 3B
	Flat Roof Board Hybrid 25

Flat Roof Board B 3B is recommended for use below EPDM weatherproofing membranes. This is our Jablite Flat Roof Board with a single layer of Type 3B felt factory bonded to the top surface. Available in all compressive strengths.

Hybrid 25 may also be used with EPDM membranes, available in grades 100 and 150 for all standard flat roof applications.

Liquid Applied	Flat Roof Board B 3B
	Flat Roof Board B HP
	Flat Roof Board Hybrid 25

Our Flat Roof Boards with either a Type 3B felt or SBS modified high performance felt factory bonded to the top surface may be used below liquid applied membranes.

Liquid applied membranes vary and those not suitable for applying over a bitumen based felt should be used with our Hybrid 25 Boards. This has a 25mm fibre faced PIR panel as the top surface.

We recommend seeking advice from the liquid applied membrane suppliers regarding the most appropriate laminated Jablite Roof Board.

Built up Felt	Flat Roof Board B 3B
	Flat Roof Board B HP
	Flat Roof Board B HP Torch
	Flat Roof Board Hybrid 30

Pour and roll applied 3B and HP felts – Where the felt weatherproofing is to be applied by bedding in hot bitumen it is recommended that Flat Roof Board Hybrid 30 be used. This has 30mm bitumen faced PIR panel laminate, allowing hot bitumen to be poured directly onto the insulation.

Alternatively Jablite Flat Roof Board B 3B and B HP may be used provided the hot bitumen is applied to the insulation by mopping. This reduces the temperature during installation.

Torch on application – Flat Roof Board B HP Torch is specifically supplied with the first layer of a two layer torch applied system. The finishing layer may be applied on site directly to the insulation with standard torch application. Flat Roof Board Hybrid 30 may also be used with torch applied felt weathering.



APPLICATION

Deck

Jablite Flat Roof insulation is suitable for installation over all deck types.

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.

For refurbishment projects the existing deck or weatherproofing must be free of loose chippings and any defects made good.

Vapour Control Layer

A suitable vapour control layer (VCL) such as bitumen felt or reinforced polythene sheet is placed on the roof deck.

Existing weatherproofing may only be considered as a suitable VCL where it is known to be watertight. It is recommended and considered good practice to apply an additional membrane over existing roofs to ensure adequate water vapour control.

In a fully adhered weatherproof system the VCL membrane must be adhered to the deck. A bitumen felt VCL may be applied by pouring or mopping hot bitumen to the roof deck. Cold applied adhesives may also be used for bitumen membranes and should be used for polythene type membranes. Commonly used cold adhesives are polyurethane based spray adhesives.

With mechanically fixed systems an appropriate 'self-sealing' membrane should be used as the VCL. This may be temporarily fixed to the roof deck with dabs or strips of adhesive.

The vapour control layer is turned up to the full thickness of the insulation at all perimeters and upstands.

Further information on condensation control and vapour control layers can be found in BS 6229 : 2003.

Insulation

For a tapered scheme the boards are laid from the start points shown on the design drawing provided. For flat boards the installation will start from the point of access to the roof.

With fully adhered weatherproofing systems the Jablite Flat Roof Boards are fully adhered to the VCL with a polyurethane type adhesive or other solvent free adhesive.

For mechanically fixed systems the insulation may be temporarily adhered to the deck using dabs of adhesive, this is to prevent wind uplift or movement during installation. The mechanical fastenings for the waterproof membrane are then fixed through the insulation into the deck below.

Weatherproofing

Where a proprietary weatherproofing system is to be installed the recommendations and instructions of the system supplier should be followed.





U VALUES

The table below shows the thickness of Jablite Flat Roof Board required to achieve the specific U values shown.

The thicknesses from the table may be taken for the following roof constructions.

Concrete roof deck

12.5mm Plasterboard with 3mm skim
 25mm Batten Void
 150mm Concrete Deck
 Vapour Control Layer
 Jablite Flat Roof Board
 Single Ply Membrane

Timber Deck

12.5mm Plasterboard with 3mm skim
 150mm Joist Void
 18mm Plywood Deck
 Vapour Control Layer
 Jablite Flat Roof Board
 Single Ply Membrane

The U value calculations have been carried out in accordance with BS EN ISO 6946.

U value	Thickness (mm) - Flat Roof Board						
	100*	150*	200* - 250*	300* - 500*	High Performance	Hybrid 25 (HP)	Hybrid 30 (HP)
0.30	105	100	100	95	90	85	85
0.25	125	125	120	115	110	105	105
0.22	145	140	140	135	125	120	120
0.20	160	155	150	150	140	135	135
0.18	180	175	170	165	155	150	150
0.15	220	210	205	200	185	180	185
0.10	330	320	310	300	285	280	275

*Thicknesses shown in these columns are for Jablite Flat Roof Board, Board B 3B, Board B HP and Board B HP Torch.





Accreditation :

BBA	<p>Jablite Flat Roof Boards have been tested and approved for use in warm flat roof applications by the British Board of Agrément (BBA)</p> <p>Flat Roof Board B 3B and B HP 100 and 150 - Certificate number 01/3812 Product Sheet 1</p> <p>Flat Roof Board 100 and 150 - Certificate number 01/3812 Product Sheet 2</p>
NHBC	<p>NHBC accepts the use of Jablite Flat Roof Boards, provided they are installed, used and maintained in accordance with the BBA Certificate, in relation to NHBC Standards, Chapter 7.1 Flat Roofs and Balconies</p>
CE marking	<p>Jablite have taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13163 : 2012.</p> <p>Declaration of Performance is available on Request.</p>
Quality	<p>All Jablite products are manufactured in production facilities which are certified to ISO 9001 Quality Management</p>
Environmental Responsibility	<p>All Jablite manufacturing facilities are ISO 14001 certified.</p> <p>We operate an Environmental Management System which includes our supply chain (see BREEAM section for more information)</p>
Compliance	<p>Jablite Flat 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 standard supersedes the previous manufacturing standard BS 3837 Part 1</p>





Environment and Sustainability :

**B R E E A M International New Construction 2016
and Non-Domestic Refurbishment 2015**

Mat 01 : Life Cycle Impacts	<p>Credits available: 2 – Industrial Buildings 5 – All other Building Types</p> <p>Points may be gained where at least 5 products specified at Design Stage are covered by a verified Environmental Product Declaration (EPD)</p> <p>EPD's produced by EUMEPS on behalf of a group of European EPS Manufacturers including Jablite are available on the website below within the Construction section under Documents http://www.eumeps.org/</p>
Mat 03 : Responsible Sourcing of Construction Products	<p>Credits available : 4</p> <p>BREEAM Summary Score – 2 for EMS (Certified) Key process and Supply Chain for EPS Insulation</p> <p>Jablite insulation products are manufactured using low energy processes in factories which are ISO 14001 and ISO 9001 certified. Jablite only purchases raw material from suppliers who are ISO 14001 certified. The ISO certificates are in the Technical Resource Centre on the Jablite website www.Jablite.co.uk</p> <p>Key Process (Insulation Manufacture) ISO 14001: Certificate Number EMS 559414</p> <p>Key Supply Chain Process (Main Polymer Production) ISO 14001: Certificate Number 80130-2010-AE-FRA-COFRAC Rev. 4</p>
Mat 04 : Insulation	<p>Insulation products are now covered within Mat : 01 and Mat : 03 (see above) included within the construction elements into which they are installed</p>

	FLAT ROOF BOARDS 100 - 200	FLAT ROOF BOARDS 250 - 500	FLAT ROOF BOARDS HIGH PERFORMANCE 150
BRE Green Guide Rating	A+ Element number 815320023 - 815320025	A Element number 1315320001	A+ Element number 1315320017
Climate Change	Ozone Depletion Potential (ODP) = zero Global Warming Potential (GWP) < 5		
100%	Jablite Flat Roof Boards are 100% recyclable		





TAPERED INSULATION

Tapered Roof Scheme

Jablite Flat Roof Boards are available as a tapered insulation to create the falls on the roof required to provide adequate water flow to the drainage outlets.

Using the EPS insulation layer to create the roof falls helps reduce the overall weight of the roof structure and speeds up construction.

Our Tapered Design Service includes:

- Bespoke design to suit each individual project
- Layout drawings to assist installation
- Tapered insulation boards cut to any fall – marked with reference letters as shown on the layout drawing
- Gutter boards - flat or tapered to a slight fall such as 1:120
- Monomitre – Single piece pre-cut hip and valley corner joints

Example Layout:

