



# Hardcore Replacement 70 and 100

## Floor insulation and hardcore replacement below concrete slab

Jablite Hardcore Replacement is a closed cell expanded polystyrene (EPS) board for use as insulation and replacement for traditional hardcore materials.

Jablite Hardcore Replacement has been tested and approved by the British Board of Agrément (BBA) as a structural support and thermal insulation in solid reinforced concrete ground-bearing floor slabs. Certificate number 87/1796 Product Sheet 3.

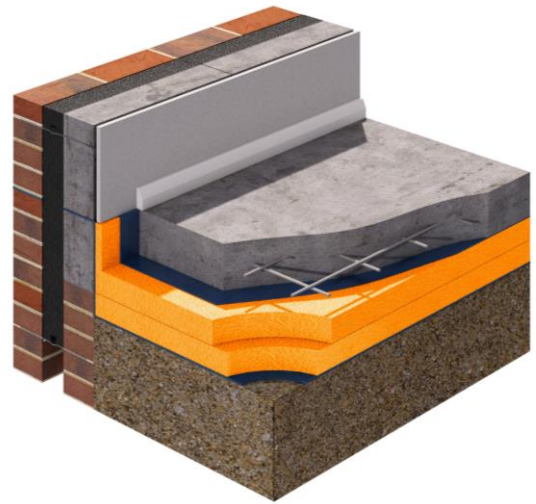
The boards are ideally suited to installation in ground floors in areas with difficult access such as home extensions.

The boards are easily transported to the site of the build without the need for heavy lifting equipment and reduces the risk of damage to property.

There are two grades available – Jablite HR 70 for normal domestic floors and Jablite HR 100 for heavier use such as commercial floors.

Jablite HR does not degrade when placed in high moisture areas and is resistant to the effects of freeze thaw. Jabfloor will remain an effective insulation for the life of the building.

Jablite Hardcore Replacement is lightweight and easy to install. There are no requirements for special PPE when installing or cutting Jabfloor. (full installation details are shown later)



### Dimensions

<b>Standard Size</b>	<b>1800 x1200mm.</b>
<b>Standard Thickness</b>	<b>75, 100, 150, 200 and 300mm other thicknesses available to order to a maximum of 300mm.</b>

### Properties :

Grade	Thermal Conductivity (Lambda) (W/mK)	Design load at 1% nominal compression (kPa)	Design load at 10% nominal compression (kPa)
Jabfloor 70	0.038	20	70
Jabfloor 100	0.036	45	100

More detailed physical properties are shown on our EPS Datasheet.





**Application :** This information is provided as guidance only, please refer to the Jablfloor compressive strengths table.

Grade	Application
Jablite Hardcore Replacement 70	Domestic
Jablite Hardcore Replacement 100	Offices, Special Occupancy Residential (e.g. Care Home)

### Accreditation :

<b>BBA</b>	Jablite Hardcore Replacement 70 and 100 has been assessed and approved by the British Board of Agrément as structural support and thermal insulation in solid reinforced concrete ground-bearing floor slabs. Certificate number 87/1796 Product Sheet 3
<b>NHBC Approved</b>	NHBC accepts the use of Jablite Hardcore Replacement, provided it is installed, used and maintained in accordance with the BBA Certificate, in relation to NHBC Standards, Chapter 5.1 Substructure and ground bearing floors.
<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 Hardcore Replacement 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
<b>Fire</b>	<p>Solid ground floors are not required to provide fire resistance. When properly installed Jablite Hardcore Replacement is fully protected by the concrete slab and will have no adverse effect on the fire performance of the building into which it is installed.</p> <p>Jablite Hardcore Replacement is supplied as non-flame retardant material as standard.</p>





## Environment and Sustainability :

<b>A+</b>	Jablite Hardcore Replacement is manufactured from EPS (expanded polystyrene) which achieves an A+ rating in the BRE Green Guide to Specification.
<b>Climate Change</b>	Jablite Hardcore Replacement has an ozone depletion potential (ODP) of zero and a global warming potential (GWP) of less than 5.  EPS does not create any known risk to the environment
<b>100%</b>	Jablite Hardcore Replacement is 100% recyclable.
<b>BREEAM</b>	<p><b>Responsible Sourcing.</b></p> <p>Jablite insulation products are manufactured in factories which are ISO 14001 and ISO 9001 certified Jablite purchases raw material from suppliers who are ISO 14001 certified. The ISO certificate are in the Technical Resource Centre on the Jablite website <a href="http://www.Jablite.co.uk">www.Jablite.co.uk</a></p> <p><b>Key Process (Insulation Manufacture)</b> ISO 14001: Certificate Number EMS 559414</p> <p><b>Supply Chain Processes (supply of materials for end products)</b> ISO 14001: Certificate Number NL 015213-1</p> <p><b>Embodied Impact</b> Jablite EPS is manufactured using low energy processes.</p> <p>The calculation of embodied impact relative to thermal performance is a function of the material volume (for each build), its BRE Green Guide Rating and its thermal conductivity.</p> <p>The thermal conductivity of our products is available on both the product packaging and this datasheet</p>
<b>Biological Properties</b>	Jablite Hardcore Replacement EPS is non-toxic and non-biodegradable.  Jablite Hardcore Replacement will not sustain mould growth and has no nutrient value to insects or vermin.





## INSTALLATION

### Site preparation

The use of Jablite Hardcore Replacement in this application means that no hardcore is required.

The excavated ground should be covered with 50mm sand and thoroughly compacted.

A suitable Damp Proof Membrane (DPM) such as 250 $\mu$  (1000 gauge) polythene sheet is laid over the compacted sand with all joints lapped and sealed.

### Jabcore

Jabcore is placed on the DPM, either in a single or double layer, with joints closely butted.

The insulation boards are easily cut to fit on site with a sharp knife or fine toothed saw.

If a double layer is used the boards should be cross-laid to stagger the joints in the boards.

A suitable Vapour Control Layer (VCL) such as 125 $\mu$  (500 gauge) polythene sheet is then placed over the Jabcore with all joints lapped and sealed.

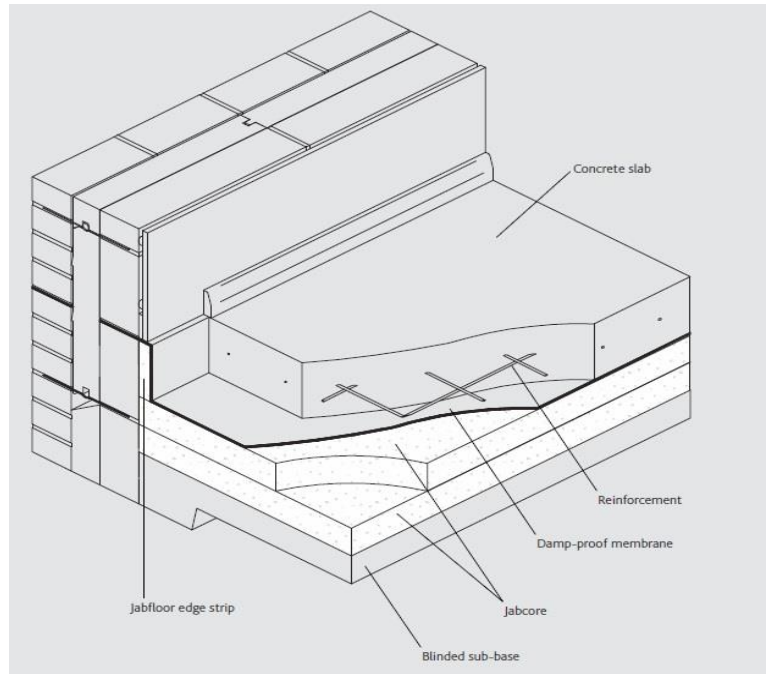
Jablite Edge Strips should be placed vertically around the perimeter of the floor. This is to reduce the risk of condensation due to cold bridging as detailed in BRE report 262. The cavity wall insulation must overlap the floor insulation by at least 150mm.

### Reinforcement

A steel-mesh reinforcement to BS 4483, as required by the design of the floor slab is placed onto spacer pads over the VCL. The spacer pads should be suitable to prevent penetration of the VCL.

### Concrete slab

The concrete slab is laid to the required thickness and either tamped or power-floated to provide the required finish.

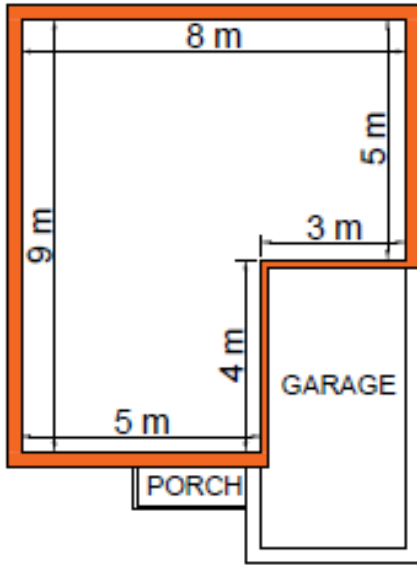


Note: Jablite EPS products are compatible with all common building materials. Direct contact with hydrocarbons and strong solvents should be avoided. A suitable membrane such as polythene sheet may be used to separate Jablite EPS from these substances.



## U VALUES

The calculation of heat loss or U value through a floor is based on the ratio of the external perimeter to the area of the floor (P/A Ratio). Example of how to calculate the P/A ratio is shown below.



The perimeter and area are measured to the internal wall finishes as shown on the diagram.

### Example Detached House

$$\text{Perimeter (P)} = 8 + 5 + 3 + 4 + 5 + 9 = 34$$

$$\text{Area (A)} = (5 \times 4) + (8 \times 5) = 60$$

$$\text{P/A Ratio} = 34 \div 60 = 0.57$$

**Note:** The exposed perimeter includes any edges where heat loss may occur, i.e. external walls and those into an unheated space such as a porch or garage.

Tables showing the thickness of Jabcore to achieve U values based on P/A ratios are provided on the following pages.





## U-values

The tables below show the U values achieved with the standard thicknesses of Jabcore available, either as a single layer or double layers.

The calculations have been based on a reinforced dense concrete floor slab 100mm thick and carried out in accordance with BS EN ISO 13370.

### JABCORE 70 – U values achieved

P/A Ratio	THICKNESS (mm)								
	75	100	150	175	200	225	250	275	300
1.00	0.32	0.27	0.20	0.17	0.16	0.14	0.13	0.12	0.11
0.90	0.32	0.26	0.20	0.17	0.16	0.14	0.13	0.12	0.11
0.80	0.31	0.26	0.19	0.17	0.15	0.14	0.13	0.12	0.11
0.70	0.30	0.25	0.19	0.17	0.15	0.14	0.13	0.12	0.11
0.60	0.29	0.24	0.18	0.16	0.15	0.13	0.12	0.11	0.11
0.50	0.27	0.23	0.18	0.16	0.14	0.13	0.12	0.11	0.10
0.40	0.26	0.22	0.17	0.15	0.14	0.13	0.12	0.11	0.10
0.30	0.23	0.20	0.16	0.14	0.13	0.12	0.11	0.10	0.10
0.25	0.21	0.19	0.15	0.13	0.12	0.11	0.11	0.10	0.09
0.20	0.19	0.17	0.14	0.13	0.12	0.11	0.10	0.09	0.09
0.15	0.17	0.15	0.12	0.11	0.11	0.10	0.09	0.09	0.08

### JABCORE 100 – U values achieved

P/A Ratio	THICKNESS (mm)								
	75	100	150	175	200	225	250	275	300
1.00	0.31	0.26	0.19	0.17	0.15	0.14	0.12	0.11	0.11
0.90	0.31	0.25	0.19	0.17	0.15	0.13	0.12	0.11	0.11
0.80	0.30	0.25	0.18	0.16	0.15	0.13	0.12	0.11	0.10
0.70	0.29	0.24	0.18	0.16	0.14	0.13	0.12	0.11	0.10
0.60	0.28	0.23	0.18	0.16	0.14	0.13	0.12	0.11	0.10
0.50	0.27	0.22	0.17	0.15	0.14	0.13	0.12	0.11	0.10
0.40	0.25	0.21	0.16	0.15	0.13	0.12	0.11	0.10	0.10
0.30	0.23	0.19	0.15	0.14	0.12	0.11	0.11	0.10	0.09
0.25	0.21	0.18	0.14	0.13	0.12	0.11	0.10	0.10	0.09
0.20	0.19	0.17	0.13	0.12	0.11	0.10	0.10	0.09	0.08
0.15	0.16	0.15	0.12	0.11	0.10	0.09	0.09	0.08	0.08

NB: Thickness indicated may be obtained using one or two layers of standard thickness product