



# Jablite Basement Board 70, 100, 150, 200, 250 and 300

## Floor and Wall Insulation - Basements

Jablite Basement Board is a closed cell expanded polystyrene (EPS) insulation panel resistant to moisture which makes it suitable for use below ground to insulate basements in high moisture conditions.

It is resistant to the effects of freeze thaw and will remain an effective insulation for the life of the building.

Basement Board is not a damp proof membrane, therefore adequate waterproofing, tanking and drainage are required within a basement construction. (see installation details later)

Basement Board Grades 200 and 300 are commonly used to insulate basement walls and floors. Their high compressive strength makes these grades suitable for all basement applications.

Cost effective solutions may be designed using the lower compressive strength grades 70, 100, 150 and 200 where the design engineer deems these to have sufficient resistance to pressure.

Basement Board is lightweight and easy to install. There are no requirements for special PPE when installing or cutting Jablfloor. (full installation details are shown later)



### Dimensions

<b>Standard Size</b>	2400 x1200mm
<b>Standard Thickness</b>	25, 30, 40, 50, 60, 75, 100, 120, 150, 200 and 300mm (Other thicknesses available to order)

Grade	Thermal Conductivity (Lambda) (W/mK)	Design load at 1% nominal compression (kPa)	Design load at 10% nominal compression (kPa)
Basement Board 70	0.038	20	70
Basement Board 100	0.036	45	100
Basement Board 150	0.035	70	150
Basement Board 200	0.034	90	200
Basement Board 250	0.034	100	250
Basement Board 300	0.033	120	300

More detailed physical properties are shown on our EPS Datasheet.





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

Grade	Application
Basement Board 200	Basements up to 2.500m deep
Basement Board 300	Basements from 2.500m to 5.000m deep

**Accreditation :**

CE marking	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.
Quality	All Jablite products are manufactured in production facilities which are certified to ISO 9001 Quality Management
Environmental Responsibility	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)
Compliance	Basement Board 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
Fire	Basement Board does not have an adverse effect on the fire performance of a solid concrete basement construction. When placed externally the Basement Board is protected by the concrete construction. When placed internally the Basement Board will be covered by the floor screed, chipboard flooring or plasterboard wall lining.  Basement Board is supplied as non-flame retardant material as standard.





## Environment and Sustainability :

<b>A+</b>	Basement Board insulation is manufactured from EPS (expanded polystyrene) which achieves an A+ rating in the BRE Green Guide to Specification.
<b>Climate Change</b>	Basement Board insulation have 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>	Basement Board insulation is 100% recyclable.
<b>BREEM</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>	Basement Board EPS insulation is non-toxic and non-biodegradable.  Basement Board will not sustain mould growth and has no nutrient value to insects or vermin.





## INSTALLATION

The design of basements and use of insulation will depend on the depth below ground. Hydrostatic pressure against the insulation increases with depth and must be taken into account in the selection of the grade of Basement Board.

Heat loss reduces with increased depth below ground floor basements. Therefore the thickness of insulation required for deeper basements is reduced. Example heat loss calculations are given later.

Guidance on the design and insulation of basements can be found in the publication "Guidance Document – Basements for Dwellings" produced by The Basement Information Centre. This provides information on how to meet Building Regulation Approved Document requirements.

The grade of Basement Board will be specified dependent on the hydrostatic pressures they are required to withstand.

### Insulating Externally

This is the preferred method for new basements as the construction is kept warm.

Note: The hydrostatic pressure and therefore load on the insulation will increase with the depth of the basement. Pressures can be reduced by the use of a cavity drain membrane on the outside of the insulation.

### Waterproofing

Design of the waterproofing and drainage solution is key to the long term performance of the basement structure. Guidance on design can be found in BS 8102 : 2009.

The waterproofing or tanking membrane is placed directly against the external surface of the basement structure and must be continuous to prevent moisture penetration into the basement.

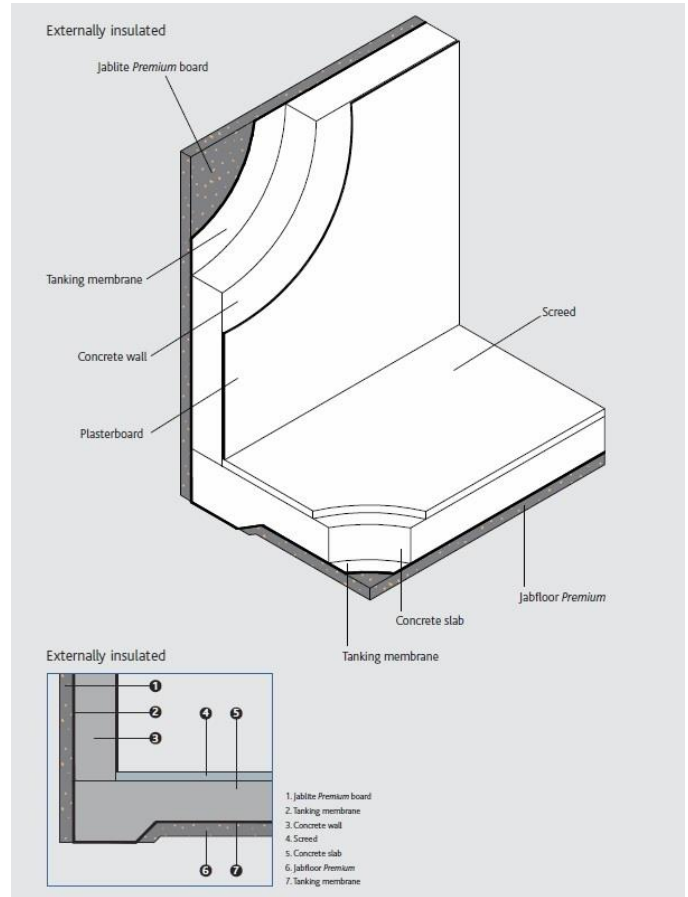
### Walls

Basement Board is placed against the waterproofing. All joints tightly butted together. It is essential there are no gaps between the panels.

A temporary adhesive may be used to hold the insulation in place. A solvent free adhesive must be used such as plasterboard adhesive.

The base of the wall is backfilled with a granular material covered with a geotextile membrane to create a free drainage area around the floor/wall junction.

A cavity drain membrane is placed against the insulation to allow free drainage down to the base of the wall.





## INSTALLATION

### Insulating Externally

#### Floor – Below Slab

A suitable cavity drain membrane is placed over the sand blinded, compacted ground.

Basement Board is placed over the membrane with joints of the panels tightly butted.

The insulation panels may be cut to fit on site with a sharp knife or fine toothed saw.

The waterproof layer is then placed over the insulation. Please ensure the membrane is compatible with Basement Board. All polythene type membranes may be used in direct contact with Basement Board.

Structural steel reinforcement must be placed onto spacer pads sufficient to prevent puncturing the VCL and damaging the insulation.

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

#### Floor – Over Slab

The tanking membrane and cavity drain membrane are placed over the concrete floor slab and overlapped with the wall tanking membrane.

Basement Board is placed over the membrane with joints of the panels tightly butted. The boards are easily cut to fit with a sharp knife or fine toothed saw.

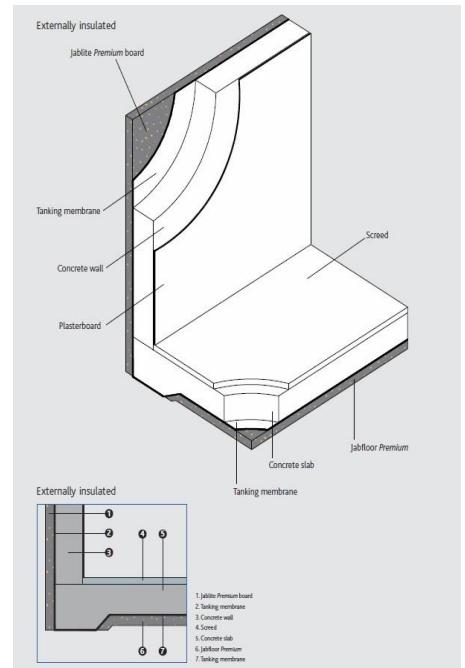
A suitable VCL such as 125 $\mu$  (500 gauge) polythene sheet is laid over the Basement Board with all joints lapped and sealed.

A screed or chipboard finish is then placed over the VCL.

For installation details and guidance on screed and chipboard over Basement Insulation please refer to the appropriate Jabfloor sections.

#### Thermal Bridges

To reduce the risk of condensation caused by cold bridging the wall insulation must overlap the level of floor insulation by at least 150mm. Jabfloor Edge Strips may be used at the perimeter of the floor to achieve this overlap.



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.



## Insulating Internally

This is the recommended method of insulating existing basements where it is not technically or economically feasible to insulate externally.

## Waterproofing

The tanking and cavity drain membrane are placed against the walls and floor of the basement.

The cavity drain must be adequate to allow free drainage of moisture to a sump placed in the floor.

Design of the waterproofing and drainage solution is key to the long term performance of the basement structure. Guidance on design can be found in BS 8102 : 2009.

## Walls

Basement Board is placed against the cavity drain. All joints tightly butted together. It is essential there are no gaps between the panels.

Adhesive such as plasterboard adhesive is used to fix the wall insulation. Mechanical fasteners must not be used as they will penetrate the waterproof membrane.

A suitable VCL such as 125 $\mu$  (500 gauge) polythene sheet is laid over the Jablite Board with all joints lapped and sealed.

A plasterboard lining is then placed on a supporting frame to the inside of the insulation.

## Floor – Over Slab

The tanking and cavity drain membranes are placed over the concrete floor slab and overlapped with the wall tanking membrane.

Basement Board is placed over the membrane with joints of the panels tightly butted. The insulation panels may be cut to fit on site with a sharp knife or fine toothed saw.

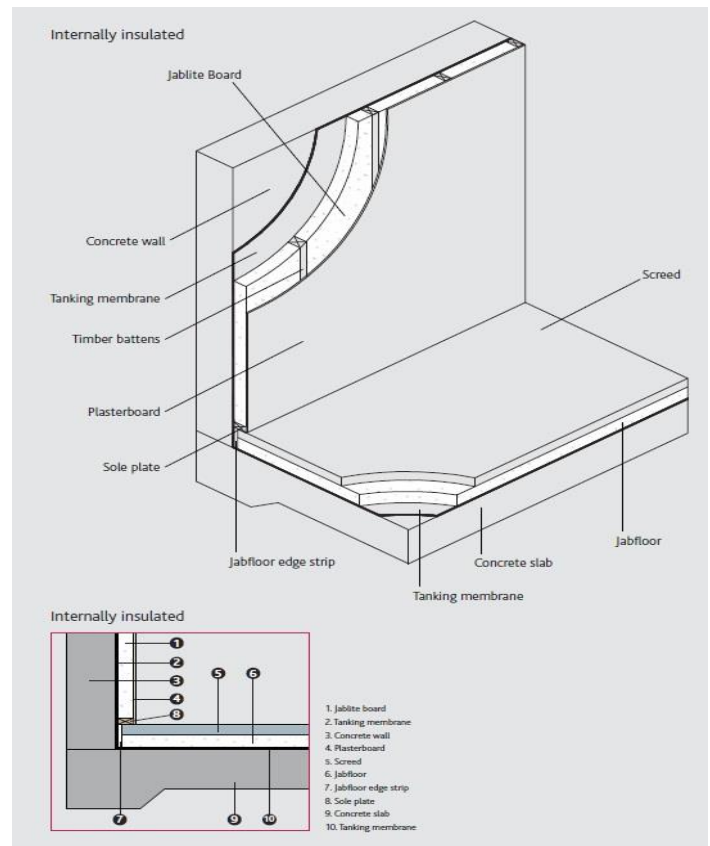
A suitable VCL such as 125 $\mu$  (500 gauge) polythene sheet is laid over the Basement Board with all joints lapped and sealed.

A screed or chipboard finish is then placed over the VCL.

For installation details and guidance on screed and chipboard over Basement Insulation please refer to the appropriate Jabfloor sections.

## Thermal Bridges

To reduce the risk of condensation caused by cold bridging ensure the wall insulation is in contact with the floor insulation with no gaps.





## U VALUES

The U value of a basement construction is carried out in accordance with BS EN ISO 13370 and with reference to BR 443.

The thermal performance of a basement takes into account the wall and floor constructions, the Perimeter/Area ratio as for ground floors and the depth of the basement below ground level. Example calculations are shown below.

**Floor Plan** – 6 x 8m detached  
(All 4 sides exposed)

**Depth below ground** – 2.4m  
(Measured from ground level to finished basement floor level)

### Externally Insulated

#### Wall construction

- 12.5mm Plasterboard on dabs
- 150mm Reinforced Insitu Concrete Wall
- Tanking Membrane
- **50mm Basement Board Type 200**
- Cavity Drain Membrane
- Earth backfill

**U value achieved: 0.33 W/m<sup>2</sup>K**

#### Floor construction

- 150mm Reinforced Insitu Concrete Floor slab
- Tanking Membrane
- **75mm Basement Board 200**
- Cavity Drain Membrane
- Compacted levelled earth

**U value achieved: 0.23 W/m<sup>2</sup>K**

### Internally insulated

#### Wall construction

- 12.5mm Plasterboard on metal frame
- **60mm Basement Board 70**
- Tanking and Cavity Drain Membrane
- 150mm Concrete Wall
- Earth

**U value achieved: 0.34 W/m<sup>2</sup>K**

#### Floor construction

- 65mm Screed
- **60mm Basement Board 70**
- Tanking and Cavity Drain Membrane
- 150mm Reinforced Concrete Floor

**U value achieved: 0.25 W/m<sup>2</sup>K**

