



Basement Board High Performance (HP) 70 and 100

Floor and Wall Insulation - Basements

Basement Board HP is a closed cell expanded polystyrene (EPS) insulation board which makes it suitable for use below ground around basements in high moisture conditions.

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

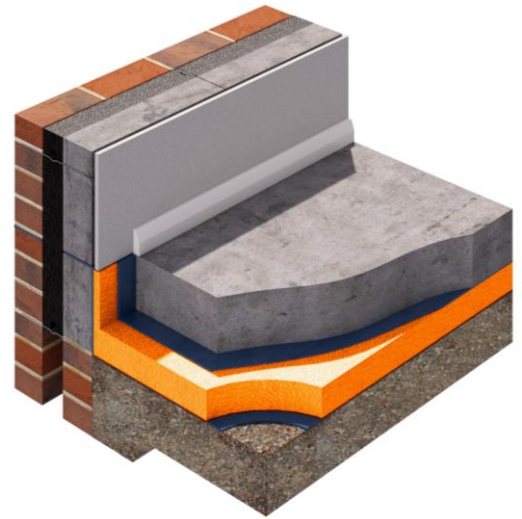
Basement Board HP is grey in colour due to the carbon additive which acts within the boards to disperse and reflect heat radiation. This gives the boards an improvement in thermal performance compared to white EPS.

The range of compressive strengths available are suited to internal applications and some external applications where the loads on the insulation are within the compressive strengths shown in the table below.

For external basement insulation applications where higher loads are expected on the insulation please refer to our section on Basement Board - white EPS – which is available in 200 and 300 kPa compressive strengths suitable for external insulation for deep basements.

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

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



Dimensions

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

Properties :

Grade	Thermal Conductivity (Lambda) (W/mK)	Design load at 1% nominal compression (kPa)	Design load at 10% nominal compression (kPa)
Basement Board HP 70	0.032	20	70
Basement Board HP 100	0.032	45	100

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 HP 70	Internal walls and floors (domestic floor load)
Basement Board HP 100	Commercial floor loads

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 HP 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 HP does not have an adverse effect on the fire performance of a solid concrete basement construction. When placed externally the Basement Board HP is protected by the concrete construction. When placed internally the Basement Board HP will be covered by the floor screed, chipboard flooring or plasterboard wall lining. Basement Board HP is supplied as non-flame retardant material as standard.





Environment and Sustainability :

A+	Jabfloor HP and Jablite Board HP insulation are manufactured from EPS (expanded polystyrene) which has an A+ rating in the BRE Green Guide to Specification.
Climate Change	Jabfloor HP and Jablite Board HP 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
100%	Jablite Basement Board HP is 100% recyclable.
BREEM	<p>Responsible Sourcing.</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 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>Supply Chain Processes (supply of materials for end products) ISO 14001: Certificate Number NL 015213-1</p> <p>Embodied Impact 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>
Biological Properties	Basement Board HP EPS insulation is non-toxic and non-biodegradable. Basement Board HP 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 HP.

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 HP 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.

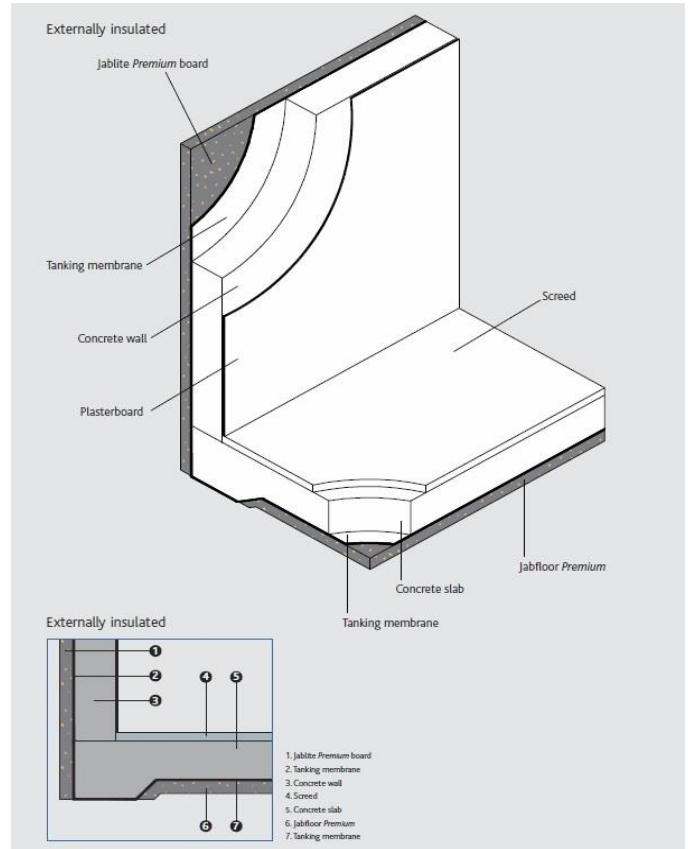
Walls

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

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 HP is placed over the membrane with joints of the boards tightly butted.

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

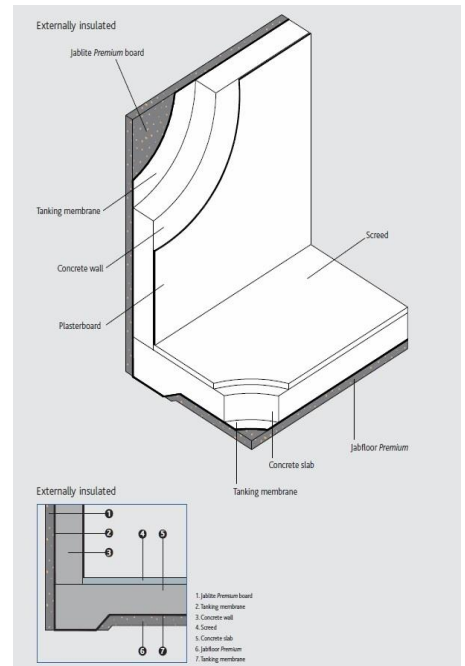
A suitable VCL such as 125 μ (500 gauge) polythene sheet is laid over the Basement Board with all joints lapped and sealed.

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 HP 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 boards.

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 μ (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 HP is placed over the membrane with joints of the boards tightly butted. The insulation boards may be cut to fit on site with a sharp knife or fine toothed saw.

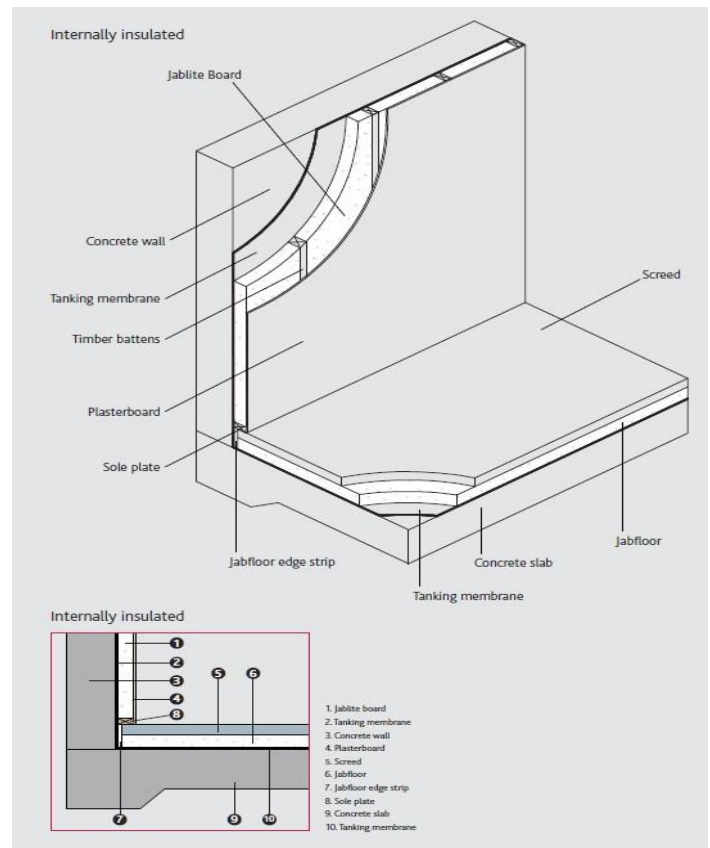
A suitable VCL such as 125 μ (500 gauge) polythene sheet is laid over the Basement Board with all joints lapped and sealed.

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 calculation is 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)

Internally insulated

Wall construction

- 12.5mm Plasterboard on metal frame
- **50mm Basement Board HP 70**
- Tanking and Cavity Drain Membrane
- 150mm Concrete Wall
- Earth

U value achieved: 0.32 W/m²K

Floor construction

- 65mm Screed
- **50mm Basement Board HP 70**
- Tanking and Cavity Drain Membrane
- 150mm Reinforced Concrete Floor

U value achieved: 0.25 W/m²K

