

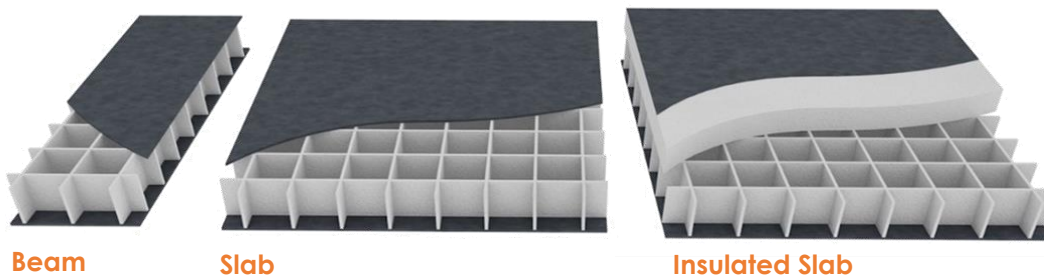


Jablite Ground Heave Protection (Vertical)

Jablite Ground Heave Protection (Vertical) product range is supplied as a range of boards offering different grades and depths for specification. Each board is engineered to protect the foundations of buildings against the damage caused by the upward pressure of clay or ground heave in a given site and application situation.

Key Benefits

- Protects buildings against upward pressure caused by ground heave
- BBA-certified
- Meets NHBC Technical Standards
- Board sizes aid a fast, easy installation
- Bonded bottom sheet removes need for sand/cement blinding layer
- Available with bonded EPS insulation board
- Lightweight boards limit H&S risk on site



How it works

Jablite Ground Heave Protection provides a stable platform to support a specified depth of wet concrete during construction and, a fully-tested cellular core that will collapse under the specified fail-load pressure to limit damage caused if upward pressure occurs.

Jablite Ground Heave Protection Boards

The Jablite Ground Heave Protection boards are a cellular-structured void former that is precision-cut from EPS (expanded polystyrene). The boards are manufactured in a range of thicknesses to meet the application – Beam, Slab or Insulated Slab - requirement and the soil plasticity and predicted ground movement on the site (See table).

Beam

Jablite Ground Heave Protection Beam boards are supplied in 300, 450 and 600 mm pre-cut boards as standard. Bespoke sizes are available on request.

Influence Factors and Required Void Former Depth			
NHBC Shrinkage Category	Low	Medium	High
Soil Plasticity Index PI %	10-20	20-40	40-60
Predicted ground movement (mm)	50	100	150

Depth (mm) of cellular EPS Structure to meet NHBC and site requirements			
Beam	85	155	220
Slab	90	160	225
Insulated Slab *	220	225	315

*you can order the insulation layer in any thickness to meet your project U-value requirements



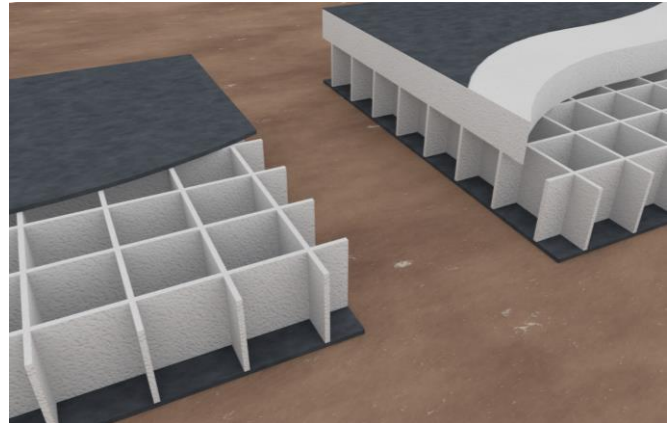


Jablite Ground Heave Protection (Vertical)

Testing and Quality Control

Jablite Ground Heave Protection (GHP) boards are thoroughly tested to ensure each one will achieve the specific performance required. Our testing rig enables the testing of whole GHP boards – not just a small part of a board - so we know that our boards function exactly as you want them to.

In addition, we have a rigorous ongoing quality testing programme which ensures that the performance of Jablite GHP boards can always be relied upon



2. CGI of slab and Insulated slab

Polypropylene Top Sheet

All Jablite Ground Heave Protection boards are supplied with a bonded polypropylene top sheet. The thickness of the top sheet is tailored to suit the application requirement (see table below).

Application	Depth of top polypropylene sheet
Beam	5 mm
Slab	10 mm
Insulated Slab	2 mm

Polypropylene Bottom Sheet

All Jablite Ground Heave Protection boards are supplied with a bonded polypropylene bottom sheet. This bottom sheet provides a firm and flat level surface for the installation and removes the requirement to prepare the ground with a sand or cement blinding prior to the installation.

The bottom sheet is 5 mm for all applications.

Product Grades

Jablite Ground Heave Protection is supplied in seven different performance grades to meet the required safe-load and fail-load performances for different thicknesses of concrete.

Each grade, from 1 to 7, supports a specified depth of wet concrete during construction and the subsequent collapse required in the event of upward pressure.

The table below lists the concrete thickness, Jablite grade reference and the safe and fail load of each grade.

Concrete thickness (mm)	Product Grade	Safe-load (kN/m ²)	Fail-load (kN/m ²)
100-220	1	7	10
221-300	2	9	13
301-340	3	10	15
341-460	4	13	18
461-600	5	18	24
661-900	6	24	32
901-1140	7	30	40

Bespoke Products

For projects with special requirements, such as a concrete thickness of over 1200mm, Jablite will design a bespoke board to meet your unique requirements. Please contact your Technical Sales Manager to discuss details.





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Jablite Ground Heave Protection: Insulated Slab

In cases where insulation is also required beneath the slab, Jablite Ground Heave Protection can be utilised to provide combined ground movement protection and insulation from a single product.

The Insulated Slab will achieve a specified thermal performance. The insulation boards are supplied in white EPS or, for an improved thermal performance, select HP EPS (grey). Both white and grey are manufactured in three different thicknesses – 30mm, 50mm or 100mm.

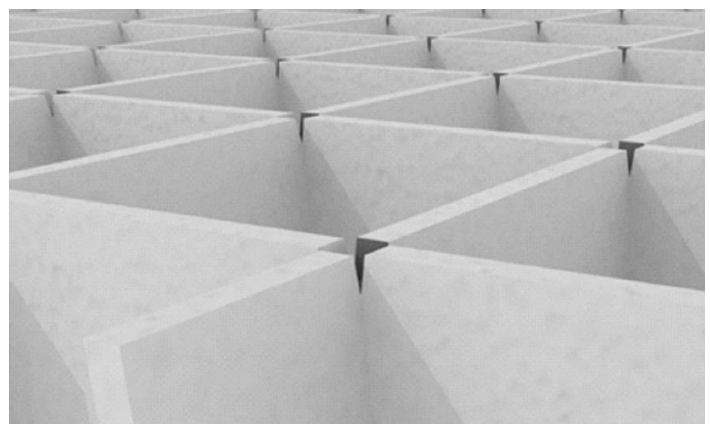
Depending on the thickness of the insulation board, U-values as low as 0.14 can be achieved. The table below shows examples of the U-values that can be achieved with the different thicknesses of white or grey EPS.

The U-value of a completed floor will depend on the insulation thickness, the perimeter/area ratio and the floor type.

p/A ratio m/m ²	30mm EPS thickness		50mm EPS thickness		75mm EPS thickness		100mm EPS thickness		150mm EPS thickness	
	70	70 HP	70	70 HP	70	70 HP	70	70 HP	70	70 HP
0.4	0.39	0.36	0.32	0.29	0.26	0.23	0.22	0.19	0.17	0.14
0.6	0.46	0.42	0.37	0.32	0.29	0.26	0.25	0.21	0.19	0.16
0.7	0.49	0.45	0.38	0.34	0.31	0.27	0.25	0.22	0.19	0.16
0.9	0.53	0.48	0.41	0.36	0.33	0.28	0.27	0.23	0.20	0.17

Drainage

The cellular expanded polystyrene (EPS) core is designed to include drainage slots in every node (where four faces meet). The slots allow water that could be trapped in the collapsed cells to escape as the board compresses.



3. Cellular EPS with drainage slots





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Health & Safety

Jablite Ground Heave Protection Boards are lightweight and, conveniently sized 1200mm x 1200mm, making them easy to handle on site. The boards can be off loaded and moved around the site manually.

Lifetime Performance

Jablite Ground Heave Protection boards have a design life that is equivalent to the lifetime of a construction.

Building Regulations

Jablite Ground Heave Protections meets the relevant requirements in the following Building Regulation:

- BR (England and Wales) 2010
- BR (Scotland) 2004
- BR (Northern Ireland) 2012
- Construction Regulations 2015
- Construction Regulations (Northern Ireland) 2016

NHBC Standards 2018

Jablite GHP meets the relevant requirement in relation to NHBC Standards 2018 Chapter 4.2 *Building near trees*, 4.3 *Strip and trench foundation*, 4.4 *Raft, pile and beam foundation*.

CE Marking

Jablite GHP is CE marked in accordance with harmonised European Standard BS EN 15037-4: 2010. The DOP (Declaration of Performance) is available on request.



"In addition to the normal downward-acting loads, the foundation structure should be designed to take account of the upward pressure that will be transferred through the product during periods of clay heave".

The ultimate upward pressure to be resisted (**Pult**) should be determined in accordance with BS EN 1992-1-1 : 2004 and BS EN 1990 : 2002 as:

$$P_{ult} = (\gamma Q \times PFL) - (\gamma G + GK)$$

British Board of Agrément Certificate