



GARAGE FLOOR SYSTEM

The Jablite Garage Floor System is an innovative, BBA-certified system for garage floor applications.

This new Garage Floor System is a designed structural system consisting of pre-stressed concrete beams and a range of expanded polystyrene (EPS) panels. The system is completed by a structural concrete topping.

The Jablite Garage Floor System can be used in suspended floor applications for integral, annex and outbuilding garages and meets the requirement to be categorized as an R1 system for installation with a steel mesh reinforced concrete topping.

The Jablite Garage Floor System has to be installed in conjunction with ancillary items included in the BBA certificate: concrete closure blocks and stainless steel edge clips.

Structural performance

The Jablite Garage Floor System sustains and transmits the dead load and imposed floor loads associated with domestic garages to the supporting structure.

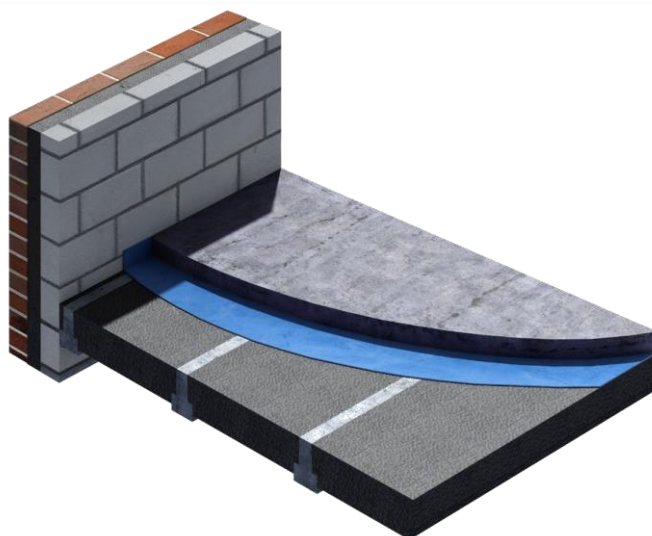
Durability

The Jablite Garage Floor System components, including the EPS, concrete beam and concrete topping reinforced with steel mesh, will have a design life equivalent to that of the building in which they are incorporated.

Installation on site

Like the All-in-One Thermal Floor System, the Garage Floor System is fast and easy to install.

Health & Safety risks are reduced on site because it is lightweight and easy to handle and the EPS blocks can be cut with hand saws.



Regulation

The Jablite Garage Floor System satisfies the relevant requirements of 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

The Jablite Garage Floor System satisfies the relevant requirement in relation to NHBC Standards 2018 Chapter 5.2 Suspended ground floors.

CE Marking

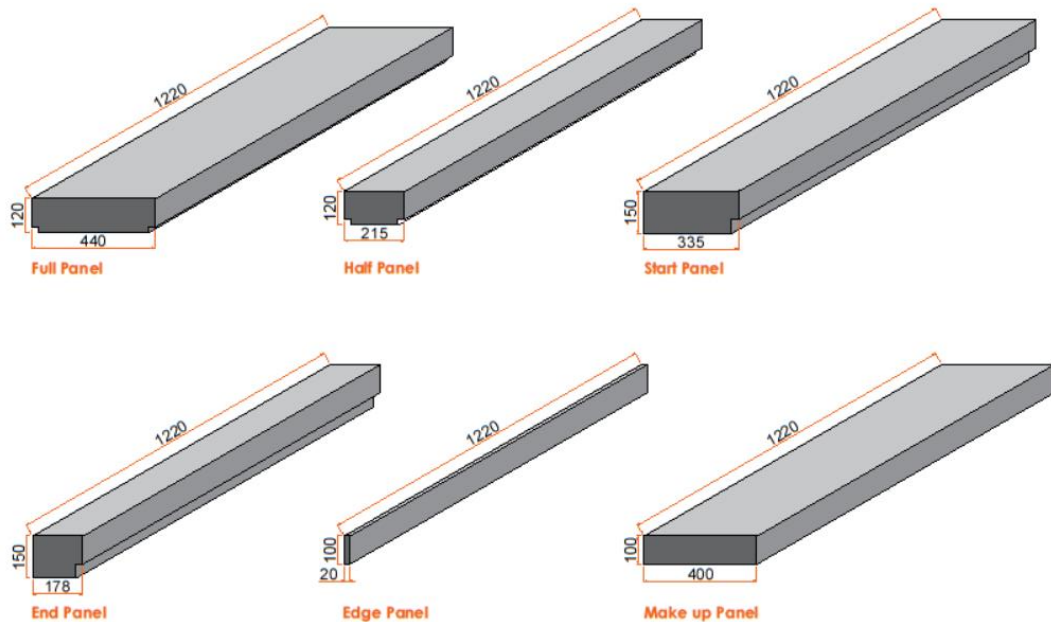
The Jablite Garage Floor System is CE marked in accordance with harmonised European Standard BS EN 15037-4 : 2010.

The DOP (Declaration of Performance) is available on request.



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The Garage Floor System EPS panels are available in Full Panel, Half Panel, Start Panel, End Panel, Edge Panel and Make up Panel.



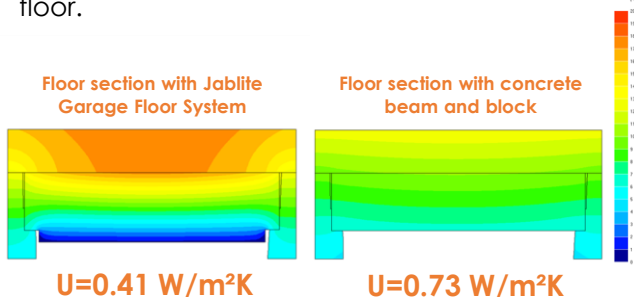
EPS Panels

The EPS Panels are manufactured from expanded polystyrene beads using conventional moulding techniques.

The Jablite Garage Floor System has adequate strength to carry the normal temporary loads expected during the construction phase of the floor system including the weight of the structural concrete topping when poured.

Improved thermal performance

Although it is not a regulatory requirement, Jablite Garage Floor System offers an improved thermal performance when compared to a traditional uninsulated beam and block garage floor.



Sustainability and Quality

Jablite insulation can be supplied in EPS (expanded polystyrene) or in HP (high performance) EPS to provide the required structural and thermal performance.

Expanded Polystyrene is A+ rated in the BRE Green Guide to Specification.

Jablite EPS insulation is 100% recyclable and Jablite provides a site collection of clean material cut offs and these are recycled back into insulation boards.

Jablite manufactures to ISO 9001 and ISO 14001 certified standards.

Health and Safety

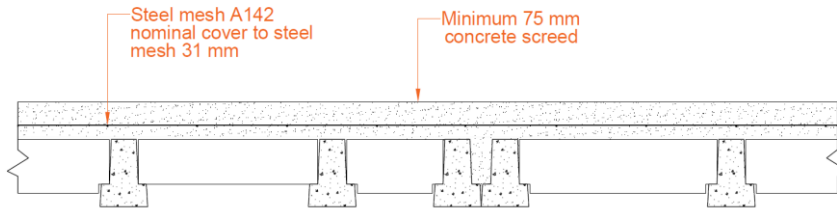
Jablite Garage Floor System panels are lightweight and easy-to-handle. They can be cut with a hand saw eliminating the need to use a wet disc cutter.

The EPS panels can be easily slotted into place reducing the risk of injuring hands and easily moved around the site with no need for fork lift trucks.



Specification of Concrete Toppings and Steel Mesh Reinforcement:

The minimum depth of the concrete topping above the services is 75 mm. One layer of A142 steel mesh reinforcement to be placed at mid height of the concrete slab.



Design considerations

The strength of the concrete is C28/35 with maximum 20 mm aggregate.

For spot samples taken from initial discharge, the slump should be Class S2 (30 mm to 110 mm).

The aggregate for concrete must comply with BS EN 12620 : 2013.

In the absence of a 100 mm upstand, the garage floor should have an appropriate fall toward the garage entrance to prevent fuel entering the adjoining room.

The floor should not be subjected to loads from construction materials until the concrete topping has reached its design strength.

The natural frequency of the floor is greater than 4.0 Hz.

Achieving Characteristic Loads

The structural concrete topping should be in accordance with BS 8500-1 : 2015, BS 8500-2 : 2015 and BS EN 206 : 2013.

The structural concrete topping, in conjunction with Jablite Garage Floor System, is suitable for use in buildings with the characteristic loads defined in BS EN 1992-1-1 : 2004 and its UK National Annex for steel mesh reinforcement, thickness and strength class of concrete topping, in conjunction with the specification of concrete beams.

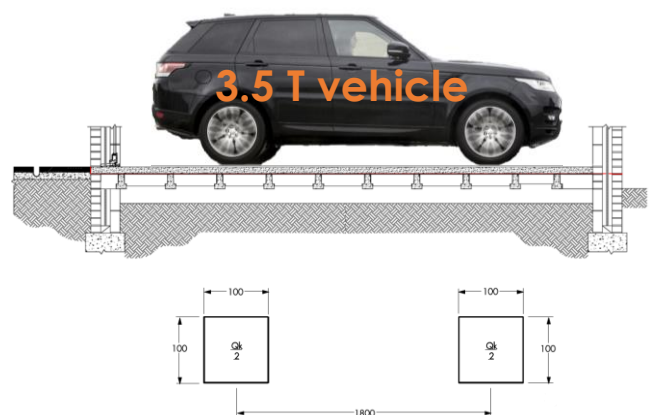
The load model is a single axle with the Imposed Concentrated Load Q_k applied on a square plate of dimensions 100 mm by 100 mm.

The maximum length of the cantilevered slab from the top face of the top flange of the concrete beam must not exceed 183 mm and 340 mm.

The maximum distance of the Imposed Concentrated Load applied on the cantilever from the top face of the concrete beam must not exceed 270mm.

The serviceability deflection limit must be in accordance with BS EN 1992-1-1 : 2004.

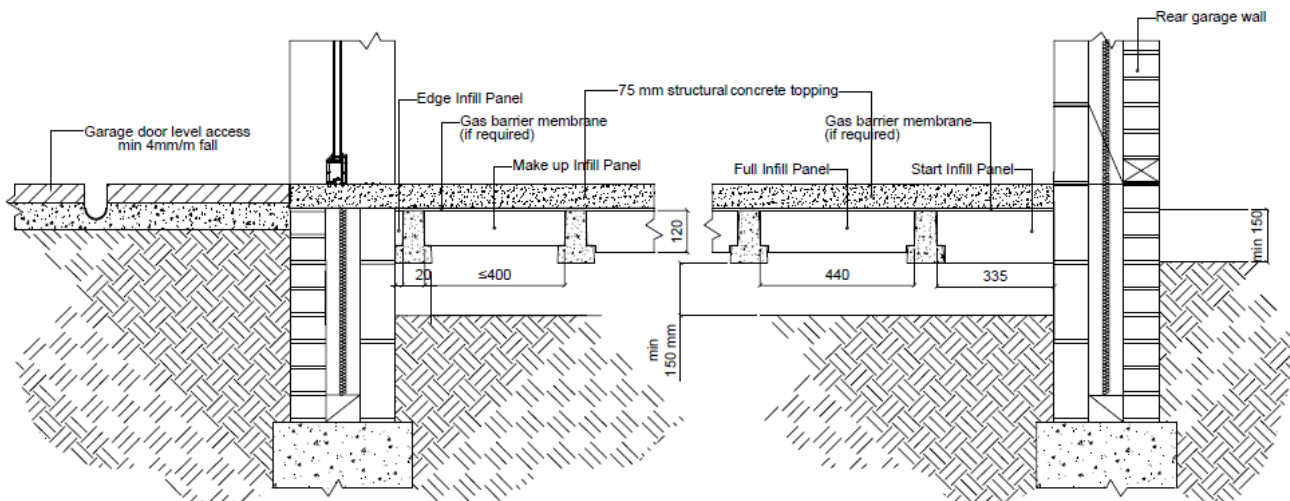
Description	Maximum characteristic load
Imposed Uniformly Distributed Load q_k [kN·m ²]	2.5
Imposed Concentrated Load Q_k [kN]	20





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Installation guide



1. A damp-proof course (dpc) is laid on top of the bearing and end walls.
2. The precast concrete beams are positioned at approximate locations and centres shown on approved drawing.
3. The first beam should be positioned tightly against the wall. The gap between the first beam and the wall should be infilled with the Edge Panel. For staggered beam installation, the universal Start/End Panel should be used in the adjacent bay.
4. The remaining beams must be accurately positioned using the closure blocks, which are bedded in mortar.
5. The EPS panels can be cut with a handsaw where required. Offcuts greater than 300 mm may be used elsewhere in the floor zone.
6. Make up Panels are used to fill the gaps in non-standard beam spacings. These are cut to suit on site as per the approved drawing.
7. End Panels are installed using stainless steel clips to complete the infill installation. Where required Edge Panels are used where beams are positioned against the wall face.
8. A gas membrane should be installed where required between insulation and the concrete topping.
9. If gas carassing pipes are specified, these can be secured to the uppermost layer of insulation material. If a gas membrane is not required, this can be achieved using standard pipe clips secured directly to the insulation. Where a membrane is required, pipes should be taped securely in position.
10. Steel mesh spacers should be positioned over spreader plates, minimum 4 per m^2 and minimum 50 mm by 50 mm, to position the A142 steel mesh at the correct level, centrally within the concrete topping
11. The EPS panels are cut as appropriate to accommodate service penetrations of maximum 150mm x 150mm, eg soil vent pipes, and the resulting gaps filled with expanding foam or other insulation to minimise local cold bridging and air infiltration.
12. When using a concrete pump, truck or skip, concrete should not be discharged onto the polystyrene panels from heights greater than 500 mm and concrete heaps must not be formed over 300 mm high.
13. When wheelbarrows are used, planks must be placed to spread the wheel load to the precast concrete beams. Spot boards must be used when tipping and shovelling.
14. The structural concrete topping is placed and compacted. Provision should be made for a suitable concrete finish to be achieved, preferably by operatives not standing on the panels or boards, eg by the use of a self-levelling concrete topping.
15. To prevent concrete ingress where a gas membrane is not placed above the EPS Panel, any gaps between EPS Panel or around service openings, visible prior to installing the concrete, must be either taped or filled with grout or expanding foam.