**Jablite Limited**
Infinity House
Anderson Way
Belvedere
Kent DA17 6BG
Tel: 020 8320 9100 Fax: 020 8320 9110
website: www.jablite.co.uk

BBA APPROVAL INSPECTION TESTING CERTIFICATION
TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate
**87/1796**
**Product Sheet 3**

# JABLITE FLOOR INSULATION

# JABLITE HARDCORE REPLACEMENT 70 AND 100

This Agrément Certificate Product Sheet[1] relates to Jablite Hardcore Replacement 70 and 100, rigid expanded polystyrene (EPS) boards for use as structural support and thermal insulation in solid reinforced concrete ground-bearing floor slabs. Jablite Hardcore Replacement 70 is suitable for use in new domestic or similar buildings, and Jablite Hardcore Replacement 100 is suitable for use in new domestic or similar buildings and non-domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

## CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

## KEY FACTORS ASSESSED

**Thermal performance** — the products have declared thermal conductivities ($\lambda_D$)* of 0.038 $W \cdot m^{-1} \cdot K^{-1}$ for Jablite Hardcore Replacement 70 and 0.036 $W \cdot m^{-1} \cdot K^{-1}$ for Jablite Hardcore Replacement 100 (see section 6).

**Condensation risk** — the products can contribute to limiting the risk of condensation (see section 7).

**Floor loading** — the products, when installed in accordance with this Certificate, can be used as structural support for solid reinforced concrete ground-bearing floor slabs, and can support a design loading for domestic or non-domestic applications (see section 9).

**Durability** — the products are dimensionally stable and, when installed with the overlay specified, will remain effective as an insulating material for the life of the building in which they are incorporated (see section 12).

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Fourth issue: 14 September 2017

John Albon — Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

Originally certificated on 10 November 2000

*The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk*

*Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.*

**British Board of Agrément**
Bucknalls Lane
Watford
Herts WD25 9BA
tel: 01923 665300
fax: 01923 665301
clientservices@bbacerts.co.uk
**www.bbacerts.co.uk**

# Regulations

In the opinion of the BBA, Jablite Hardcore Replacement 70 and 100, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):

## The Building Regulations 2010 (England and Wales) (as amended)

| | | |
|---|---|---|
| **Requirement:** | A1 | Loading |
| Comment: | | The products can contribute to satisfying this Requirement. See sections 9.2 and 9.3 of this Certificate. |
| **Requirement:** | C2(c) | Resistance to moisture |
| Comment: | | The products can contribute to satisfying this Requirement. See sections 7.1 and 7.4 of this Certificate. |
| **Requirement:** | L1(a)(i) | Conservation of fuel and power |
| Comment: | | The products can contribute to satisfying this Requirement. See section 6 of this Certificate. |
| **Regulation:** | 7 | Materials and workmanship |
| Comment: | | The products are acceptable. See section 12 and the *Installation* part of this Certificate. |
| **Regulation:** | 26 | $CO_2$ emission rates for new buildings |
| **Regulation:** | 26A | Fabric energy efficiency rates for new dwellings (applicable to England only) |
| **Regulation:** | 26A | Primary energy consumption rates for new buildings (applicable to Wales only) |
| **Regulation:** | 26B | Fabric performance values for new dwellings (applicable to Wales only) |
| Comment: | | The products can contribute to satisfying these Regulations. See section 6 of this Certificate. |

## The Building (Scotland) Regulations 2004 (as amended)

| | | |
|---|---|---|
| **Regulation:** | 8(1) | Durability, workmanship and fitness of materials |
| Comment: | | The products are acceptable. See section 12 and the *Installation* part of this Certificate. |
| **Regulation:** | 9 | Building standards applicable to construction |
| Standard: | 1.1(b) | Structure |
| Comment: | | The products can contribute to satisfying this Standard, with reference to clause 1.1.1[(1)(2)]. See sections 9.2 and 9.3 of this Certificate. |
| Standard: | 3.15 | Condensation |
| Comment: | | The products can contribute to satisfying this Standard, with reference to clauses 3.15.1[(1)(2)], 3.15.4[(1)(2)] and 3.15.5[(1)(2)]. See sections 7.1 and 7.5 of this Certificate. |
| Standard: | 6.1(b) | Carbon dioxide emissions |
| Standard: | 6.2 | Building insulation envelope |
| Comment: | | The products can contribute to satisfying these Standards, with reference to clauses, or parts of, 6.1.1[(1)], 6.1.6[(1)], 6.2.1[(1)(2)], 6.2.3[(1)(2)], 6.2.4[(1)(2)], 6.2.5[(2)], 6.2.6[(1)(2)], 6.2.7[(1)], 6.2.8[(2)], 6.2.9[(1)(2)], 6.2.10[(1)], 6.2.11[(1)(2)], 6.2.12[(2)], and 6.2.13[(1)(2)]. See section 6 of this Certificate. |
| Standard: | 7.1(a)(b) | Statement of sustainability |
| Comment: | | The products can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and, therefore, will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the products can contribute to a construction meeting a higher level of sustainability as defined in this Standard with reference to clauses 7.1.4[(1)(2)] [Aspects 1[(1)(2)] and 2[(1)]], 7.1.6[(1)(2)] [Aspects 1[(1)(2)] and 2[(1)]] and 7.1.7[(1)(2)] [Aspect 1[(1)(2)]]. See section 6.1 of this Certificate. |
| **Regulation:** | 12 | Building standards applicable to conversions |
| Comment: | | Comments made in relation to these products under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1[(1)(2)] and Schedule 6[(1)(2)]. |

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

## The Building Regulations (Northern Ireland) 2012 (as amended)

| | | |
|---|---|---|
| **Regulation:** | 23 | Fitness of materials and workmanship |
| Comment: | | The products are acceptable. See section 12 and the *Installation* part of this Certificate. |
| **Regulation:** | 29 | Condensation |
| Comment: | | The products can contribute to satisfying this Regulation. See section 7.1 of this Certificate. |
| **Regulation:** | 30 | Stability |
| Comment: | | The products can contribute to satisfying this Regulation. See sections 9.2 and 9.3 of this Certificate. |
| **Regulation:** | 39(a)(i) | Conservation measures |
| **Regulation:** | 40 | Target carbon dioxide emission rate |
| Comment: | | The products can contribute to satisfying these Regulations. See section 6 of this Certificate. |

**Construction (Design and Management) Regulations 2015**

**Construction (Design and Management) Regulations (Northern Ireland) 2016**

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.4) of this Certificate.

# Additional Information

## NHBC Standards 2017

In the opinion of the BBA, Jablite Hardcore Replacement 70 and 100, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 5.1, *Substructure and ground bearing floors*, in floors subjected to domestic floor loading (see section 9.2).

## CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 13163 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

# Technical Specification

## 1 Description

Jablite Hardcore Replacement 70 and 100 comprise EPS 70 and EPS 100 rigid expanded polystyrene boards, with the nominal characteristics given in Table 1.

*Table 1 Nominal characteristics*

| | |
|---|---|
| Size (mm) | 1200 x 2400, 1200 x 1200 and 1200 x 1800 |
| Thickness(1) (mm) | 75, 100 and 150 |
| Nominal density (kg·m$^{-3}$) | 15 (Jablite Hardcore Replacement 70) and 20 (Jablite Hardcore Replacement 100) |
| Flatness (mm/m) | Class P(30) |
| Edge detail | Plain |
| Minimum compressive stress at 10% deformation* (kPa) | 70 (Jablite Hardcore Replacement 70) and 100 (Jablite Hardcore Replacement 100) |

(1) Other thicknesses available on request.

## 2 Manufacture

2.1 Jablite Hardcore Replacement 70 and 100 are manufactured from expanded polystyrene (EPS). The material comprises expandable beads of polystyrene, pre-foamed and fused together in a steam-heated mould under pressure. This produces a block of material, up to 7314 mm long, which is then cut to size and shape.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Jablite Limited has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 and BS EN ISO 14001 : 2004 by the British Standards Institute (Certificates FM/01260 and EMS/559414).

## 3 Delivery and site handling

3.1 The boards are delivered to site in packs, wrapped in polythene. Each pack of boards contains a label bearing the manufacturer's trade name, product description, board dimensions, and the BBA logo incorporating the number of this Certificate.

3.2 The products must be protected from prolonged exposure to sunlight and should be stored either under cover or protected with opaque polythene sheeting.

3.3 The products must be stored fully supported and flat on a firm, level, dry base, protected from the weather and raised above damp surfaces. The products must be discarded if damaged or contaminated, and if accidentally allowed to become wet, they should be allowed to dry fully before installation.

3.4 The products must not be exposed to open flame or other ignition sources. Care must be taken to avoid contact with solvents and materials containing organic components.

# Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Jablite Hardcore Replacement 70 and 100.

## Design Considerations

### 4 Use

4.1 Jablite Hardcore Replacement 70 and 100 are satisfactory for use as insulation, and are effective in reducing thermal transmittance (U value), and as a structural support for new solid reinforced concrete ground-bearing floor slabs. Jablite Hardcore Replacement 70 is suitable for use in domestic applications and Jablite Hardcore Replacement 100 is suitable for use in both domestic and non-domestic applications (see sections 9.2 and 9.3 of this Certificate).

4.2 Ground-bearing floors should only be used where the depth of compacted fill is less than 600 mm and is defined as non-shrinkable. Shrinkable fills are defined as material containing more than 35% fine particles (silt and clay) and having a Plasticity Index of 10% or greater (shrinkable fills are susceptible to clay heave).

4.3 Ground-bearing concrete floor systems incorporating the products must include a suitable damp-proof membrane (dpm) laid beneath the insulation, in accordance with Approved Document C, Clause 4.12 (this refers to Clause 11 of CP 102 : 1973) and *NHBC Standards*, Chapter 5.1, Clause D12 (see section 14.3 of this Certificate).

4.4 The overlay to the insulation boards should be:

- a vapour control layer (VCL) (see section 7.3), and
- a reinforced concrete slab (see section 7 of BS 8103-1 : 2011) designed by a suitably qualified person to resist the design loading.

4.5 Where a concrete screed or slab finish is laid directly over the product, a polyethylene separating layer/VCL must be installed between the insulation and the concrete to prevent seepage between the boards (see section 14.7). Any gaps between insulation boards or around service openings, visible prior to installing the concrete, must be filled with expanding foam or strips of insulation.

4.6 Loadbearing internal walls must not be built on the floor.

(1) NHBC only accept ground-bearing concrete floor slabs of at least 100 mm thickness, including monolithic screed where appropriate.

### 5 Practicability of installation

The products are designed to be installed by a competent general builder, or a contractor, experienced with these types of products.

### 6 Thermal performance

6.1 Calculations of the thermal transmittance (U value) of a floor should be carried out in accordance with BS EN ISO 6946 : 2007, BS EN ISO 13370 : 2007 and BRE Report BR 443 : 2006 using the declared thermal conductivity ($\lambda_D$)* value of 0.038 $W \cdot m^{-1} \cdot K^{-1}$ for Jablite Hardcore Replacement 70 and 0.036 $W \cdot m^{-1} \cdot K^{-1}$ for Jablite Hardcore Replacement 100.

6.2 The U value of a completed floor will depend on the insulation thickness, the perimeter/area ratio and the floor type. Calculated U values for example constructions are given in Table 2.

*Table 2 Example U[1] values ($W \cdot m^{-2} \cdot K^{-1}$) — Ground-bearing concrete floor*

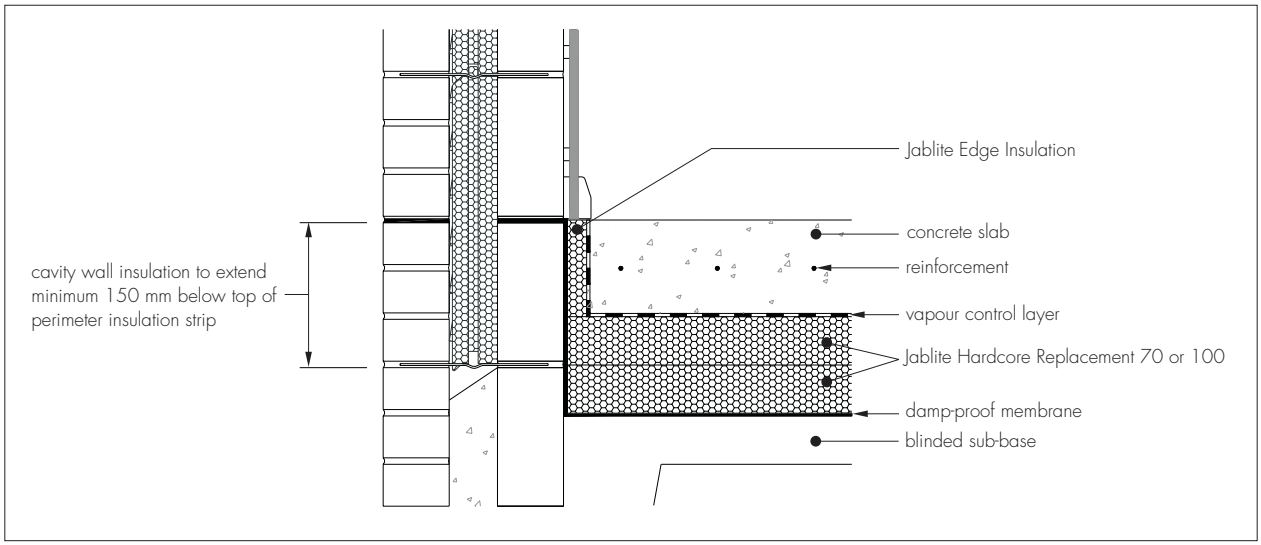
| Floor type | Perimeter/ area ratio | EPS | Minimum insulation thickness (mm) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Target U value ($W \cdot m^{-2} \cdot K^{-1}$) | | | | | |
| | | | 0.13 | 0.15 | 0.18 | 0.20 | 0.22 | 0.25 |
| Ground-bearing concrete floor (insulation underneath) | 0.2 | Jablite Hardcore Replacement 70 (white) | 155 | 120 | 85 | 65 | 55 | 35 |
| | 0.4 | | 205 | 170 | 130 | 110 | 95 | 80 |
| | 0.6 | | 225 | 190 | 150 | 130 | 115 | 95 |
| | 0.8 | | 235 | 200 | 160 | 140 | 125 | 105 |
| | 1 | | 240 | 205 | 165 | 145 | 130 | 110 |
| | 0.2 | Jablite Hardcore Replacement 100 (white) | 150 | 115 | 80 | 60 | 45 | 30 |
| | 0.4 | | 195 | 160 | 125 | 105 | 90 | 70 |
| | 0.6 | | 215 | 180 | 140 | 120 | 105 | 90 |
| | 0.8 | | 225 | 190 | 150 | 130 | 115 | 95 |
| | 1 | | 230 | 195 | 155 | 135 | 120 | 100 |

(1) Construction used:
- 300 mm thick perimeter wall with U value of 0.35 $W \cdot m^{-2} \cdot K^{-1}$
- 100 mm concrete slab with conductivity 2.06 $W \cdot m^{-1} \cdot K^{-1}$ and a minimum 65 mm concrete screed with conductivity 1.15 $W \cdot m^{-1} \cdot K^{-1}$
- ground conductivity is 1.5 $W \cdot m^{-1} \cdot K^{-1}$
- all other parameters are default values from BRE Report BR 443 : 2006.

### Junctions

6.3 The products can contribute to maintaining continuity of thermal insulation at junctions with other elements and minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations. An example of an acceptable junction detail is shown in Figure 1.

*Figure 1 Junction between the floor and the wall*




## 7 Condensation risk

### Interstitial condensation

7.1 Floors will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2011, Annex F and the relevant guidance.

7.2 Jablite Hardcore Replacement 70 and 100 have water vapour resistivities exceeding 100 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$ and 150 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$ respectively.

7.3 A VCL is required between the top of the insulation and the slab overlay to inhibit the risk of interstitial condensation, unless a risk assessment shows this is not necessary.

### Surface condensation

7.4 Floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.7 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with walls are designed in accordance with section 6.3 of this Certificate.

7.5 Floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point. Guidance may be obtained from BS 5250 : 2011, Annex F. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 6.3 of this Certificate.

## 8 Behaviour in relation to fire

8.1 The products have a Class F reaction to fire classification* in accordance with BS EN 13501-1 : 2007, but can also be supplied as Class E when requested.

8.2 When properly installed, the products will not add significantly to any existing fire hazard. The products will be contained within the floor by the overlay until the overlay itself is destroyed. Therefore, the products will not contribute to the development stages of a fire or present a smoke or toxic hazard.

## 9 Floor loading

9.1 The Certificate holder has declared designation codes of CS(10)70 for Jablite Hardcore Replacement 70 and CS(10)100 for Jablite Hardcore Replacement 100 in accordance with BS EN 13163 : 2012 (compressive stress at 10% deformation* to BS EN 826 : 2013).

9.2 Jablite Hardcore Replacement 70 is suitable for domestic occupancies defined in this Certificate when covered with a suitable floor overlay and finish (see section 4.4) and is capable of resisting a uniformly distributed load of 1.5 $kN \cdot m^{-2}$ or a concentrated load of 2 kN for category A1 and A2 (domestic) situations, as defined in BS EN 1991-1-1 : 2002 and its UK National Annex, Table NA.2.

9.3 Jablite Hardcore Replacement 100 is suitable for both domestic and non-domestic occupancies defined in this Certificate when covered with a suitable floor overlay and finish (see section 4.4) and is capable of resisting a uniformly distributed load of 3 $kN \cdot m^{-2}$ for category B (offices) and 4 $kN \cdot m^{-2}$ for category C33 (non-domestic), or a concentrated load of 2.7 kN for category B (offices) and 4.5 kN for category C33 (non-domestic) as defined in BS EN 1991-1-1 : 2002 and its UK National Annex, Table NA.2, or BS 6399-1 : 1996, Table 1. Further assessment is necessary in the case of duty walkways and floors subject to physical activities.

## 10 Incorporation of services

10.1 The products must not be used in direct contact with PVC-sheathed electrical heating cables or hot water pipes.

10.2 Where possible, electrical conduits, gas and water pipes or other services should be contained within ducts or channels within the concrete slab of ground-bearing floors. Electrical cables should be enclosed in a suitable conduit.

10.3 Where water pipes are installed within the slab, they must be pre-lagged with close-fitting pipe insulation, eg extruded polyethylene foam.

## 11 Maintenance

As the products are confined within the floor and have suitable durability (see section 12), maintenance is not required.

## 12 Durability

The products are rot-proof, dimensionally stable and, when installed with the overlay specified in this Certificate, will remain effective as an insulating material for the life of the building in which they are incorporated.

## 13 Reuse and recyclability

Jablite Hardcore Replacement 70 and 100 expanded polystyrene (EPS) is fully recyclable.

# Installation

## 14 General

14.1 Installation of Jablite Hardcore Replacement 70 and 100 must be in accordance with the Certificate holder's installation instructions and the requirements of this Certificate.

14.2 The products are laid over a sub-base that should be left as long as possible to maximise drying out. The sub-base surface should be compacted smooth, flat and blinded with a 50 mm thickness of compacted sand. Reference should also be made to BRE Report BR 262 : 2002.

14.3 A suitable dpm in accordance with Clause 11 of CP 102 : 1973 should be laid beneath the insulation, to resist moisture from the ground. Care should be taken to ensure that the integrity of the dpm is maintained and not damaged during construction.

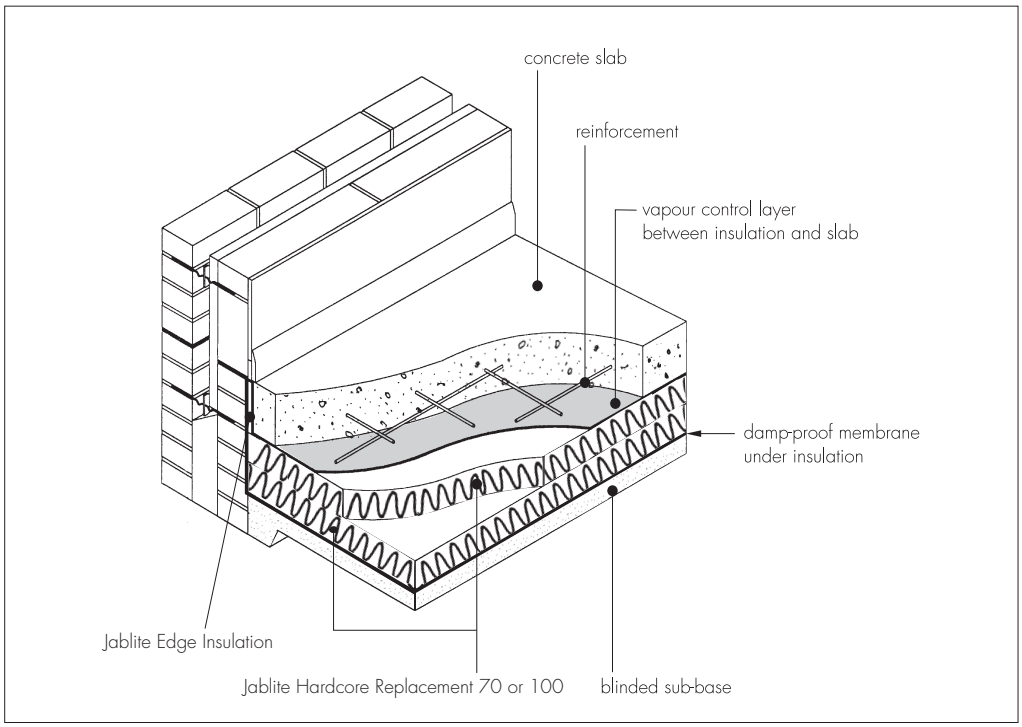
14.4 A VCL is installed on the warm side of the insulation to inhibit the risk of interstitial condensation if necessary, (see section 7.3). A polyethylene separating layer/VCL must be installed between the insulation and the concrete slab to prevent seepage between the boards.

14.5 Where a concrete slab is laid over the insulation, vertical upstands of insulation should be provided and be of sufficient depth to fully separate the slab from the wall. If used, a suitable cavity wall insulation material should be extended below the dpc level to provide edge insulation to the floor.

## 15 Procedure

15.1 The products are cut to size (using a sharp knife or fine toothed saw) and laid in a single or double layer with closely-butted, staggered cross-joints ensuring that all spaces are completely filled. If a double layer is used, through-joints must be avoided (see Figure 2).

*Figure 2 Concrete slab overlay*




15.2 Vertical edge pieces of insulation should be placed around the perimeter and taped at joints to prevent cold bridging.

15.3 When the products are laid on a dpm, a polyethylene VCL with a minimum thickness of 0.125 mm (500 gauge) should be laid on top of the insulation before casting the reinforced concrete slab overlay. The VCL should have 150 mm overlaps, taped at the joints, and be turned up 100 mm at the walls.

15.4 Steel reinforcement, as required by the design, should be incorporated in the concrete slab. If reinforcement-spacing blocks are used, they should spread the reinforcement and working loads sufficiently to prevent penetration or damage to the products or the VCL.

15.5 The concrete slab is laid to the required thickness and either tamped or power-floated to provide the required finish. During these operations, the surface of the insulation or the VCL should be protected from impact damage or excessive trafficking by the use of spreader boards.

15.6 The concrete slab is finished as required.

# Technical Investigations

## 16 Tests

16.1 As part of the assessment resulting in the issue of a previous Certificate, tests were carried out to determine:

- compressive stress at 10% deformation
- thermal conductivity
- density
- dimensional accuracy.

16.2 Existing data on which previous Certificates were based was examined relating to:

- thermal insulation properties
- equilibrium moisture content
- density and dimensional accuracy
- compressive stress at 10% deformation.

## 17 Investigations

17.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

17.2 A re-examination was made of the data and investigations on which previous Certificates were based. The conclusions drawn from the original data remain valid.

17.3 An assessment of the risk of interstitial condensation in typical constructions was made.

17.4 An assessment of the resistance to imposed loads was made.

# Bibliography


BS 5250 : 2011 *Code of practice for control of condensation in buildings*

BS 6399-1 : 1996 *Loading for buildings — Code of practice for dead and imposed loads*

BS 8103-1 : 2011 *Structural design of low-rise buildings — Code of practice for stability, site investigation, foundations, precast concrete floors and ground floor slabs for housing*

BS 8204-1 : 2003 *Screeds, bases and in-situ floorings — Concrete bases and cement sand levelling screeds to receive floorings — Code of practice*

BS EN 826 : 2013 *Thermal insulating products for building applications — determination of compression behaviour*

BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures — General actions*
NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 : Actions on structures — General actions*

BS EN 13163 : 2012 + A1 : 2015 *Thermal insulation products for buildings — Factory made expanded polystyrene (EPS) products — Specification*

BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

BS EN ISO 13370 : 2007 *Thermal performance of buildings — Heat transfer via the ground — Calculation methods*

*BS EN ISO 14001 : 2004 Environmental management systems — Requirements with guidance for use*

*CP 102 : 1973 Code of practice for protection of buildings against water from the ground*

*BRE Report (BR 262 : 2002) Thermal insulation: avoiding risks*

BRE Report (BR 443 : 2006) *Conventions for U-value calculations*

## 18 Conditions

18.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page — no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

18.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

18.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

18.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

18.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA
tel: 01923 665300
fax: 01923 665301
clientservices@bbacerts.co.uk
www.bbacerts.co.uk