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**Agrément
Certificate
No 87/1796**
*Sixth issue**

Designated by Government
to issue
European Technical
Approvals

JABLITE FLOORING SYSTEMS

Isolation en polystyrène expansé pour planchers des rez-de-chaussées
Fußbodenwärmedämmung

Product




Installation of Jabcore

- THIS CERTIFICATE REPLACES CERTIFICATE No 84/1307 AND RELATES TO JABLITE FLOORING SYSTEMS.
- The product is used to reduce the thermal transmittance of ground floors.
- Jabcore is used as a structural hardcore replacement and thermal insulation
- It is essential that the floors comply with the conditions set out in the Design Data and Installation parts of this Certificate.

These front sheets must be read in conjunction with the relevant accompanying Detail Sheets, which provide information specific to insulation systems.

Regulations — Detail Sheet 1

1 The Building Regulations 1991 (as amended) (England and Wales)	
	The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of floor insulation with the Building Regulations. In the opinion of the BBA, Jablite Flooring Systems, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.
Requirement: C2	Dangerous and offensive substances
Comment:	A floor incorporating the product can meet this Requirement. See section 2.3 of Detail Sheet 4.
Requirement: C4	Resistance to weather and ground moisture
Comment:	A floor incorporating the product can meet this Requirement. See sections 2.2 and 4.2 of the relevant Detail Sheets.
Requirement: L1	Conservation of fuel and power
Comment:	The product can meet this Requirement. See sections 3.2 and 3.3 of the relevant Detail Sheets.
Requirement: Regulation 7	Materials and workmanship
Comment:	The product is acceptable. See section 9 of these Front Sheets.

Readers are advised to check the validity of this Certificate by either referring to the Index of Current BBA Publications or contacting the BBA direct (Telephone Hotline 01923 665400).

Electronic Copy

2 The Building Standards (Scotland) Regulations 1990 (as amended)



In the opinion of the BBA, Jablite Flooring Systems, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Technical Standards as listed below.

Regulation:	10	Fitness of materials
Standard:	B2.1	Selection and use of materials and components
Comment:		The product is acceptable. See section 9 of these Front Sheets.
Regulation:	16	Preparation of sites
Standard:	G2.1	Preparation of a site
Comment:		A floor incorporating the product can satisfy this Standard. See section 2.3 of Detail Sheet 4.
Regulation:	17	Resistance to moisture
Standard:	G2.6	Resistance to moisture from the ground
Comment:		A floor incorporating the product can satisfy this Standard. See sections 2.2 and 4.2 of the relevant Detail Sheets.
Regulation:	18	Resistance to condensation
Standard:	G4.1	Interstitial condensation
Standard:	G4.2	Surface condensation
Comment:		A floor incorporating the product can satisfy these Standards. See section 7 of these Front Sheets.
Regulation:	22	Conservation of fuel and power
Standard:	J2.1	Standards for buildings in purpose group 1
Standard:	J3.1	Standards for buildings in purpose groups 2 to 7
Comment:		The product will enable a floor to satisfy these Standards. See sections 3.2 and 3.3 of the relevant Detail Sheets.

3 The Building Regulations (Northern Ireland) 1994 (as amended)



In the opinion of the BBA, Jablite Flooring Systems, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 9 of these Front Sheets.
Regulation:	C2	Preparation of site and resistance to dangerous and harmful substances
Comment:		A floor incorporating the product can satisfy this Regulation. See section 2.3 of Detail Sheet 4.
Regulation:	C5	Resistance to ground moisture and weather
Comment:		A floor incorporating the product can satisfy this Regulation. See sections 2.2 and 4.2 of the relevant Detail Sheets.
Regulation:	C7	Condensation
Comment:		A floor incorporating the product can satisfy this Regulation. See section 7 of these Front Sheets.
Regulation:	F2	Conservation of fuel and power — Building fabric
Comment:		The product will enable a floor to satisfy this Regulation. See sections 3.2 and 3.3 of the relevant Detail Sheets.

4 Construction (Design and Management) Regulations 1994

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See section: *5 Delivery and site handling* of these Front Sheets.

Technical Specification

5 Delivery and site handling

5.1 Jablite Flooring Systems are boards delivered to site wrapped in polythene. Each pack contains a label with the manufacturer's trade name and the BBA identification mark incorporating the number of this Certificate.

5.2 The boards must be protected from prolonged exposure to sunlight and should be stored either under cover or protected with polyethylene. Care must be taken to avoid contact with solvents and with materials containing volatile organic components such as coal tar, pitch, timber newly treated with creosote, etc.

5.3 The boards must be stored flat, protected from high winds and raised above damp surfaces.

5.4 The boards must not be exposed to open flame or other ignition sources.

Design Data

6 Properties in relation to fire

6.1 Jablite Flooring Systems board does not prejudice the fire resistance properties of the floor, provided it is used in accordance with BS 6203 : 1991(1996).

6.2 When properly installed the boards will not add significantly to any existing fire hazard. The boards will be contained within the floor by the

overlay until the overlay itself is destroyed. The boards therefore will not contribute to the development stages of a fire or present a smoke or toxic hazard. Electrical cables running within the polystyrene should be separated from it by enclosing them within a suitable conduit, eg rigid PVC.

7 Condensation



Floors subject to the Building Regulations in Scotland or Northern Ireland, constructed in accordance with BS 5250 : 1989(1995), clause 9.5 and Appendix D, are acceptable.

8 Water vapour transmission

The product has a significant resistance to the passage of water vapour but should not be regarded as a vapour control layer.

9 Durability



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

Bibliography

BS 5250 : 1989(1995) *Code of practice for control of condensation in buildings*

BS 6203 : 1991(1996) *Guide to fire characteristics and fire performance of expanded polystyrene materials used in building applications*

Conditions of Certification

10 Conditions

10.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (d) is copyright of the BBA.

10.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

10.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

(b) continue to be checked by the BBA or its agents; and

(c) are reviewed by the BBA as and when it considers appropriate.

10.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of any patent or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

10.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, Jablite Flooring Systems are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 87/1796 is accordingly awarded to Vencel Resil Ltd.

On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'P. Q. NEWTON'.

Date of Sixth issue: 10th November 2000

Chief Executive

**Original Certificate issued 12th January 1987. This amended version includes references to the revised national Building Regulations.*



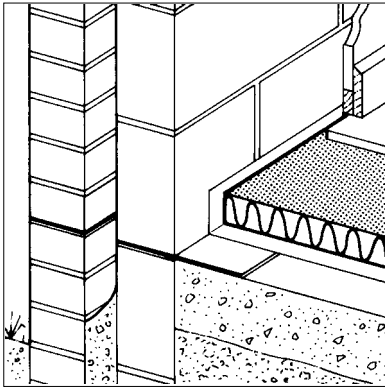
Vencel Resil Ltd

Certificate No 87/1796

JABLITE FLOORING FOR DOMESTIC CONCRETE GROUND FLOORS

DETAIL SHEET 2

Product



• THIS DETAIL SHEET RELATES TO JABLITE FLOORING FOR DOMESTIC CONCRETE GROUND FLOORS.

• The product is for use in ground floors and may be installed either on:

- (1) a concrete floor slab with a cement-sand screed or chipboard overlay
- (2) hardcore base with a concrete floor slab overlay.

(3) suspended concrete floors with a cement-sand screed or chipboard overlay

• The product is used to reduce the thermal transmittance of new or existing floors.

• It is essential that the floors comply with the conditions set out in the Design Data and Installation parts of this Certificate.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the system's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification.

Technical Specification

1 Description

1.1 Jablite Flooring for Domestic Concrete Ground Floors comprises SD Grade, expanded polystyrene board manufactured to BS 3837 : Part 1 : 1986(1996).

1.2 Boards are available in Type N or Type A (flame retardant additive).

1.3 Boards have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

	Edge profile	
	Plain	Tongue-and-groove
size (mm)	1200 x 2400 1200 x 1200	1200 x 450
thickness (mm) ⁽¹⁾	25, 40, 50, 60, 75 and 100	40, 50, 60, 75 and 100
density (kgm ⁻³)	15	15

(1) other thicknesses available subject to order.

Design Data

2 General

2.1 Jablite Flooring for Domestic Concrete Ground Floors is effective in reducing the U value (thermal transmittance) of new or existing floors

incorporating a cement-sand screed, chipboard overlay or a concrete slab overlay.

2.2 Ground supported floors incorporating the boards must include a suitable damp-proof membrane, for example, laid in accordance with CP 102 : 1973 (see section 4.2 of this Detail Sheet).

2.3 Suspended concrete ground floors incorporating the boards must include suitable ventilation or a damp-proof membrane (see section 4.2 of this Detail Sheet).

2.4 The overlay to the boards should either be:

(1) a cement-sand screed laid in accordance with the relevant clauses of BS 8204 : Part 1 : 1999 and BS 8204 : Part 2 : 1999,

(2) P5 chipboard to BS 7916 : 1998 BS EN 312-1 : 1997 and BS EN 312-5 : 1997

(3) a concrete slab.

3 Thermal insulation

3.1 For the purpose of U value calculations to determine if the requirements of the Building (or other statutory) Regulations are met, the thermal conductivity (λ value) of the insulation may be taken as 0.037 Wm⁻¹K⁻¹.

3.2 The requirement for limiting heat loss through the building fabric can be satisfied if the U values of the building elements, including the effects of thermal bridging do not exceed the maximum values in the relevant

Elemental Methods given in the national Building Regulations:

England and Wales

Approved Document L

Scotland

Technical Standards, Part J

Northern Ireland

Technical Booklet F.

3.3 Guidance is also given in these documents on selecting the thickness of insulation required to enable a floor to achieve the desired U value. Alternative approaches are also described which allow for some flexibility in design of U values for individual construction elements.

4 Moisture penetration

4.1 Floors constructed in accordance with this Certificate will not allow moisture to cross the construction.



4.2 For floors subject to national Building Regulations, construction should be as detailed or designed in accordance with:

England and Wales

Approved Document C, Technical Solutions 3.4 to 3.7, 3.8 or 3.13 to 3.14

Scotland

Technical Standards, Part G2.6, Sections A, C or D of the *Provisions deemed to satisfy the standards*

Northern Ireland

Technical Booklet C.

5 Floor loading

5.1 The design loadings for self-contained dwelling units as defined in BS 6399 : Part 1 : 1996 are:

intensity of distributed load	1.5 kPa
concentrated load	1.4 kN.

5.2 The boards covered with chipboard or screed can support these design loadings without undue deflection.

5.3 A BRE survey of imposed floor loading in domestic buildings (see BRE current paper No 2/77 *Floor loadings in domestic buildings — the results of a survey*) indicated that loadings in flats are commonly in the region of 0.6 kPa and loadings of 1.5 kPa are normally associated with fixed items.

5.4 Where the boards are used under a concrete slab, resistance to concentrated and distributed loads is a function of the slab specification.

Installation

6 General

6.1 Jablite Flooring for Domestic Concrete Ground Floors can be installed under a concrete slab in ground-supported floors and under a cement-sand screed or chipboard finish on ground-supported or suspended concrete ground floors. Reference may be made to BRE Report *Thermal insulation : avoiding risks* 1994.

6.2 The boards are easily handled and can be cut to size as necessary with a sharp knife or fine toothed saw.

6.3 The boards and overlays must be protected from water spillage, plaster droppings, traffic, which may damage them during construction. Care should also be taken to ensure that the integrity of damp-proof membranes (dpm) and vapour control layers (vcl) is maintained.

Concrete floor slab (see Figure 1)

6.4 The boards may be laid on blinded hardcore with a concrete slab overlay. A dpm must be provided either; under the boards, over the boards, or over the slab.

6.5 The boards are laid on the prepared surface with closely butted joints. Vertical upstands of insulation should also be provided around the floor perimeter.

6.6 Where the slab is laid directly onto the boards all board joints and perimeter edge piece joints should be taped to prevent the ingress of concrete.

6.7 The slab is laid to the required thickness and tamped or power floated to provide the required finish.

Cement-sand screed finish (see Figure 2)

6.8 The concrete slab over which the boards are laid should be left as long as possible to maximise drying out, in accordance with BS 8203 : 1996, Section 3.1.2.

6.9 The slab surface should be smooth and flat to within 5 mm when measured with a 3 m straight edge. Where the boards are to be laid over a suspended block and beam floor, a levelling screed or compound may be required.

6.10 A dpm should be provided above or below the slab. Liquid dpms applied over the slab should be of a type that is compatible with polystyrene and should be completely dry before the boards are laid.

6.11 The boards are laid as described in sections 6.5 to 6.6.

6.12 A properly compacted screed not less than 65 mm thick is laid to the relevant clauses of BS 8204 : Part 1 : 1999. BRE Digest 104 (1973) *Floor screeds* should also be consulted.

Chipboard overlay (see Figure 3)

6.13 Boards may be laid over floors constructed in accordance with sections 6.8 to 6.10. Where a dpm is placed below a slab, a minimum 0.25 mm thick polyethylene vcl or equivalent should be laid over the boards with minimum 150 mm laps and turned up 100 mm at upstands.

6.14 Timber battens, preservative treated in accordance with BS 5268 : Part 5 : 1989(1997), are positioned at doorways and to support partitions. Adequate time should be allowed for CCA-based preservatives to be fixed and solvent based preservatives to evaporate.

6.15 The insulation boards are laid with closely butted joints.

Figure 1 Concrete slab overlay installation

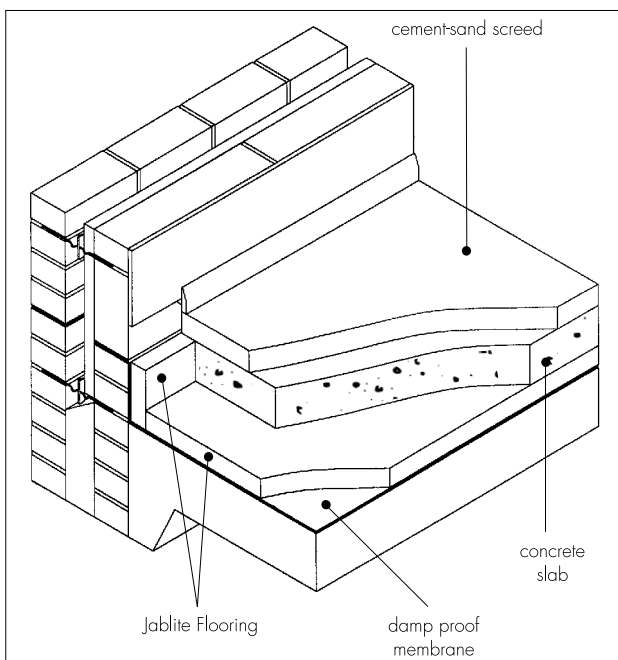


Figure 2 Cement-sand screed installation

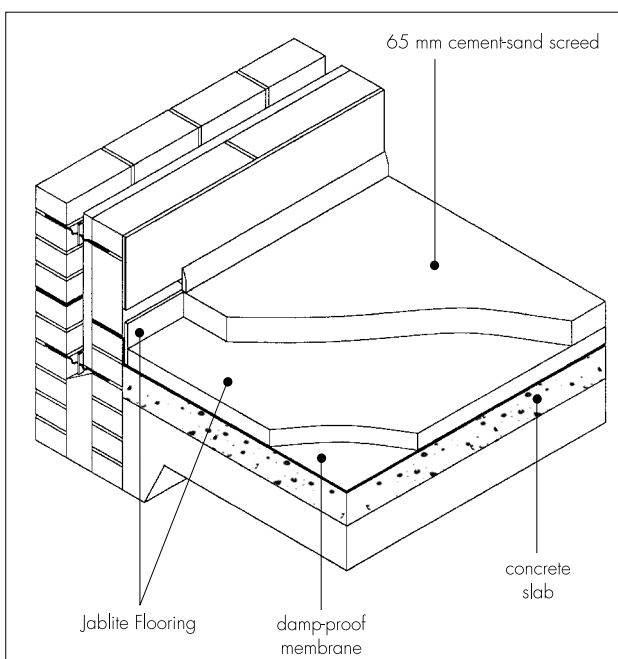
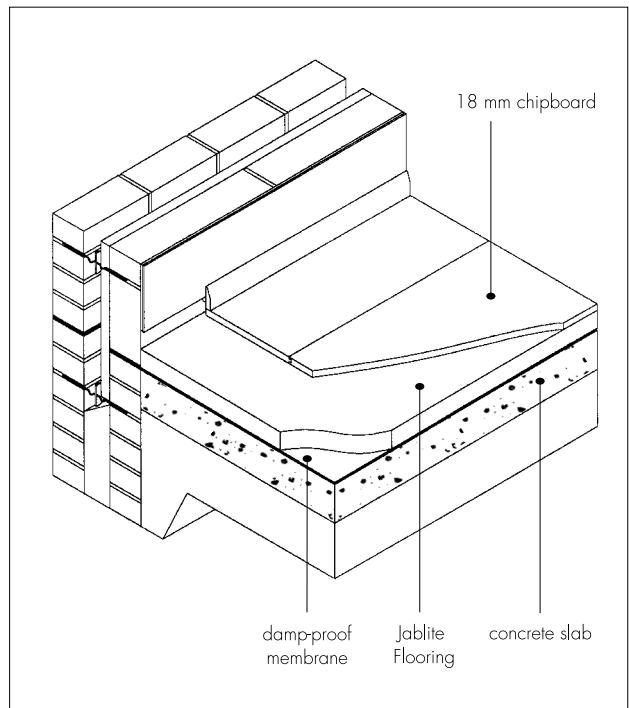


Figure 3 Chipboard overlay installation



6.16 Type P5 tongue-and-groove chipboard of minimum thickness 18 mm is laid over the boards in accordance with BS 7916 : 1998. Joints between chipboard panels should be staggered.

6.17 An expansion gap between the chipboard and the perimeter walls or upstands should be provided at the rate of 2 mm per metre run or a minimum of 10 mm, whichever is the greater.

6.18 Where there are long, uninterrupted lengths of floor, eg corridors, proprietary expansion joints should be installed at intervals in accordance with the manufacturer's recommendations on the basis of a 2 mm gap per metre run of chipboard.

6.19 Before the chipboard panels are interlocked a waterproof PVA adhesive is applied to the joints.

6.20 Once the chipboard is laid, temporary wedges are inserted between the walls and the floor to maintain tight joints the adhesive has set. The wedges are then removed.

6.21 Where there is a likelihood of regular water spillage, eg in rooms such as kitchens, bathrooms, shower rooms and utility rooms, additional chipboard protection should be provided, for example a continuous flexible vinyl sheet flooring with welded joints and cove skirting.

7 Incorporation of services

7.1 The boards must not be used in direct contact with electrical heating cables or hot water pipes.

Suspended beam and block floors

7.2 Where the boards are installed on a floor of a suspended beam and block design, all services must be installed in accordance with the Agrément Certificate for that floor.

Other types of floor

7.3 Where possible, electrical conduits, gas and water pipes or other services should be contained within ducts or channels within the concrete slab. Where this is not possible, the services may be accommodated within the insulation, provided they are securely fixed to the concrete slab (see section 6.2 of the Front Sheets). Electrical cables should be enclosed in a suitable conduit. With hot pipes the insulation must be cut back to maintain an air space.

7.4 Where water pipes are installed, either within the slab or the boards, they must be pre-lagged.

7.5 For floors incorporating chipboard overlays, where access to the services is desirable, a duct may be formed by mechanically fixing to the floor timber bearers of the same thickness as the insulation to provide support for a chipboard cover. The duct should be as narrow as possible and not exceed the maximum chipboard spans recommended in BS 7916 : 1998.

Technical Investigations

The following is a summary of the technical investigations carried out on Jablite Flooring for Domestic Concrete Ground Floors.

8 Tests

As part of the assessment resulting in the issue of a previous Certificate No 80/765 tests were carried out to determine:

compressive strength at 10% compression
density
dimensional accuracy.

9 Other investigations

9.1 A re-examination was made of the data and investigations on which the previous Certificates Nos 76/416, 80/765 and 84/1307 were

based. The conclusions drawn from the original data remain valid.

9.2 Existing data relating to the thermal insulation properties and equilibrium moisture content of the material were examined.

9.3 An assessment of the risk of interstitial condensation was made.

Bibliography

BS 3837 *Expanded polystyrene boards*
Part 1 : 1986(1996) *Specification for boards manufactured from expandable beads*

BS 5268 *Structural use of timber*
Part 5 : 1989(1997) *Code of practice for the preservative treatment of structural timber*

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

BS 7916 : 1998 *Code of practice for the selection and application of particleboard, oriented strand board (OSB), cement bonded particleboard and wood fibreboards for specific purposes*

BS 8203 : 1996 *Code of practice for installation of resilient floor coverings*

BS 8204 *Screeds, bases and in-situ floorings*

BS 8204-1 : 1999 *Concrete bases and cement-sand levelling screeds to receive floorings — Code of practice*

BS 8204-2 : 1999 *Concrete wearing surfaces — Code of practice*

BS EN 312 *Particleboards. Specifications*

BS EN 312-1 : 1997 *General requirement for all board types*

BS EN 312-5 : 1997 *Requirements for load-bearing boards for use in humid conditions*

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



On behalf of the British Board of Agrément

Date of issue: 9th June 2000

A handwritten signature in black ink, appearing to read 'P. C. Newson'.

Chief Executive



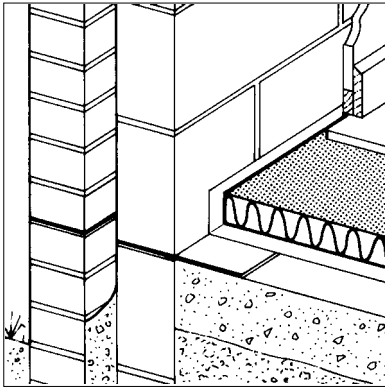
Vencel Resil Ltd

Certificate No 87/1796

JABLITE FLOORING HD AND EHD FOR NON-DOMESTIC CONCRETE GROUND FLOORS

DETAIL SHEET 3

Product



- THIS DETAIL SHEET RELATES TO JABLITE FLOORING HD AND EHD FOR NON-DOMESTIC CONCRETE GROUND FLOORS.
- The product is for use in ground-supported floors and may be installed either on:
 - (1) a concrete floor slab with a cement-sand screed or chipboard overlay
 - (2) hardcore base with a concrete floor slab overlay
 - (3) suspended concrete floors with a cement-sand screed or chipboard overlay.
- The product is used to reduce the thermal transmittance of new or existing floors.
- It is essential that the floors comply with the conditions set out in the Design Data and Installation parts of this Certificate.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the system's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification.

Technical Specification

1 Description

1.1 Jablite Flooring HD and EHD for Non-Domestic Concrete Ground Floors comprise HD and EHD Grade expanded polystyrene board manufactured to BS 3837 : Part 1 : 1986(1996).

1.2 Boards are available in Type N or Type A (flame retardant additive).

1.3 The boards have the nominal characteristics of:

size (mm)	1200 x 2400, 1200 x 1200
edge	plain
thickness (mm) ⁽¹⁾	25, 40, 50, 60, 75 and 100
density (kgm ⁻³)	20 and 25

(1) other thicknesses available subject to order.

Design Data

2 General

2.1 Jablite Flooring HD and EHD for Non-Domestic Concrete Ground Floors is effective in reducing the U value (thermal transmittance) of new or existing floors incorporating a cement-sand screed, chipboard or a concrete slab overlay.



2.2 Ground supported floors incorporating the boards must include a suitable damp-proof membrane, for example, laid in

accordance with CP 102 : 1973 (see section 4.2 of this Detail Sheet).

2.3 Suspended concrete ground floors incorporating the boards must include suitable ventilation or a damp-proof membrane (see section 4.2 of this Detail Sheet).

2.4 The overlay to the boards should be:

- (1) a cement-sand screed laid in accordance with the relevant clauses of BS 8204 : Part 1 : 1999 and BS 8204 : Part 2 : 1999
- (2) Type P5 Chipboard to BS 7916 : 1998, BS EN 312-1 : 1997 and BS EN 312-5 : 1997
- (3) a concrete slab.

3 Thermal insulation

3.1 For the purpose of U value calculations to determine if the requirements of the Building (or other statutory) Regulations are met, the thermal conductivity (λ value) of the boards may be taken as 0.034 Wm⁻¹K⁻¹ for Grade HD and 0.033 Wm⁻¹K⁻¹ for Grade EHD.



3.2 The requirement for limiting heat loss through the building fabric can be satisfied if the U values of the building elements, including the effects of thermal bridging do not exceed the maximum values in the relevant Elemental Methods given in the national Building Regulations:

England and Wales

Approved Document L

Scotland

Technical Standards, Part J

Northern Ireland

Technical Booklet F.

3.3 Guidance is also given in these documents on selecting the thickness of insulation required to enable a floor to achieve the desired U value. Alternative approaches are also described which allow for some flexibility in design of U values for individual construction elements.

4 Moisture penetration

4.1 Floors constructed in accordance with this Certificate will not allow moisture to cross the construction.



4.2 For floors subject to national Building Regulations, construction should be as detailed or designed in accordance with:

England and Wales

Approved Document C, Technical Solutions 3.4 to 3.7, 3.8 or 3.13 to 3.14

Scotland

Technical Standards, Part G2.6, Sections A, C or D of the *Provisions deemed to satisfy the standards*

Northern Ireland

Technical Booklet C.

5 Floor loading

5.1 The design loadings for non-domestic units as defined in BS 6399 : Part 1 : 1996 are:

intensity of distributed load	2.5 kPa
concentrated load	2.7 kN.

5.2 The boards covered with chipboard or screed can support these design loadings without undue deflection.

5.3 Advice regarding suitable floor finishes for these loads and building use must be sought from the Certificate holder.

5.4 Where the boards are used under a concrete slab, resistance to concentrated and distributed loads is a function of the slab specification.

Installation

6 General

6.1 Jablite Flooring HD and EHD for Non-Domestic Concrete Ground Floors can be installed under a concrete slab in ground supported floors and under a cement-sand screed or chipboard finish on ground supported or suspended concrete ground floors. Reference may be made to BRE Report *Thermal insulation : avoiding risk* 1994.

6.2 The boards are easily handled and can be cut to size as necessary with a sharp knife or fine toothed saw.

6.3 The boards and overlays must be protected from water spillage, plaster droppings, traffic, which may damage them during construction. Care should also be taken to ensure that the integrity of damp-proof membranes (dpm) and vapour control layers (vcl) is maintained.

Concrete floor slab (see Figure 1)

6.4 The boards may be laid on blinded hardcore with a concrete slab laid over. A damp-proof course must be provided either under the boards, over the boards or over the slab.

6.5 The boards are laid on the prepared surface with closely butted joints. Vertical upstands of insulation should also be provided around the floor perimeter.

6.6 Where the slab is laid directly onto the boards all board joints and perimeter edge piece joints should be taped to prevent the ingress of concrete.

6.7 The slab is laid to the required thickness and tamped or power floated to provide the required finish.

Cement-sand screed finish (see Figure 2)

6.8 The concrete slab over which the boards are laid should be left as long as possible to maximise drying out, in accordance with BS 8203 : 1996, Section 3.1.2.

6.9 The slab surface should be smooth and flat to within 5 mm when measured with a 3 m straight edge. Where the boards are to be laid over a suspended block and beam floor, a levelling screed or compound may be required.

6.10 A dpm should be provided above or below the slab. Liquid dpms applied over the slab should be of a type that is compatible with polystyrene and should be completely dry before the boards are laid.

6.11 The boards are laid as described in sections 6.5 to 6.6.

6.12 A properly compacted screed not less than 75 mm thick is laid to the relevant clauses of BS 8204 : Part 1 : 1999. BRE Digest 104 (1973) *Floor screeds* should also be consulted.

Chipboard overlay (see Figure 3)

6.13 Boards may be laid over floors constructed in accordance with sections 6.8 to 6.10. Where a dpm is placed below a slab a minimum 0.25 mm thick polyethylene vcl or equivalent should be laid over the boards with minimum 150 mm laps and turned up 100 mm at upstands.

6.14 Timber battens, preservative treated in accordance with BS 5268 : Part 5 : 1989(1997),

are positioned at doorways, and cut chipboard edges without tongue or grooved edge to support partitions. Adequate time should be allowed for CCA-based preservatives to be fixed and solvent based preservatives to evaporate.

6.15 The insulation boards are laid with closely butted joints.

6.16 Type P5 tongue-and-groove chipboard of minimum thickness 22 mm is laid over the boards in accordance with BS 7916 : 1998. Joints between chipboard panels should be staggered.

6.17 An expansion gap between the chipboard and the perimeter walls or upstands should be provided at the rate of 2 mm per metre run or a minimum of 10 mm, whichever is the greater.

Figure 1 Concrete floor slab overlay installation

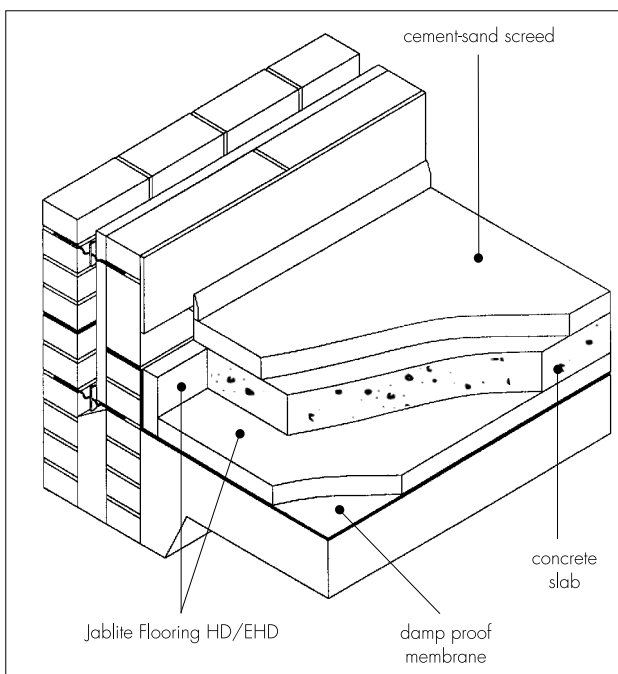


Figure 2 Cement-sand screed installation

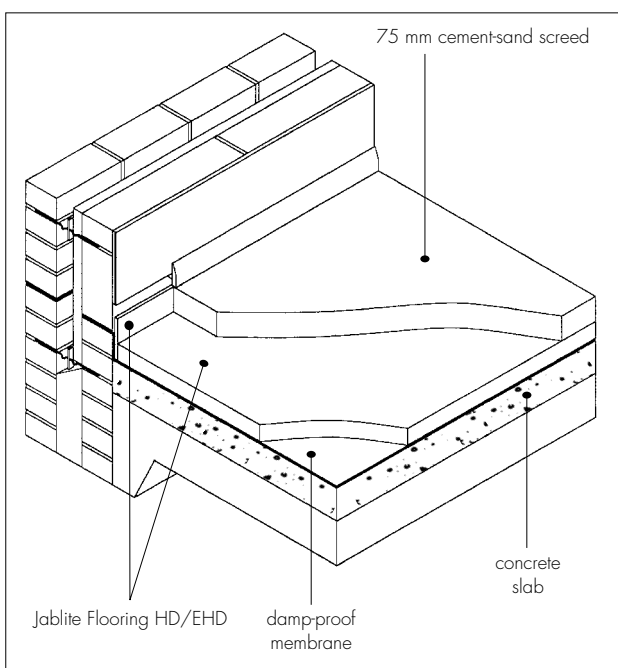
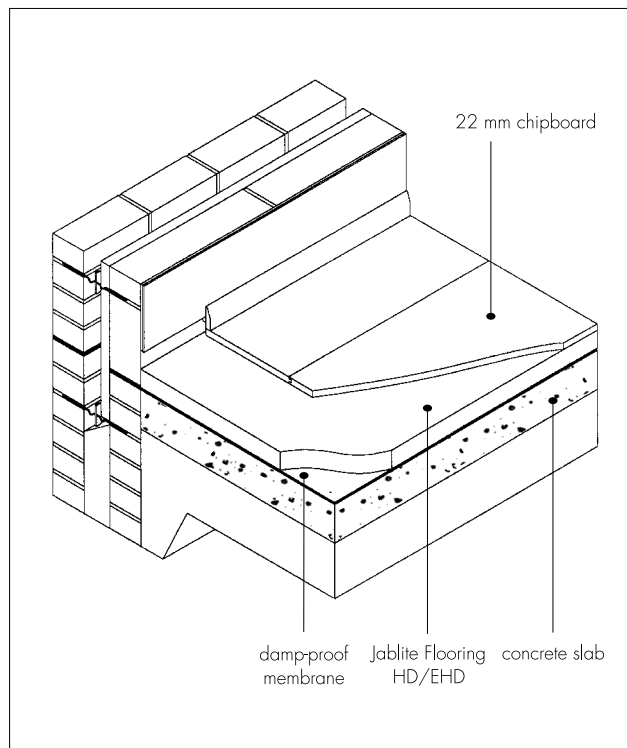


Figure 3 Chipboard overlay installation



6.18 Where there are long, uninterrupted lengths of floor, eg corridors, proprietary expansion joints should be installed at intervals in accordance with the manufacturer's recommendations on the basis of a 2 mm gap per metre run of chipboard.

6.19 Before the chipboard panels are interlocked a waterproof PVA adhesive is applied to the joints.

6.20 Once the chipboard is laid, temporary wedges are inserted between the walls and the floor to maintain tight joints the adhesive has set. The wedges are then removed.

6.21 Where there is a likelihood of regular water spillage, eg in rooms such as kitchens, bathrooms, shower rooms and utility rooms, additional chipboard protection should be provided, for example a continuous flexible vinyl sheet flooring with welded joints and cove skirting.

7 Incorporation of services

7.1 The boards must not be used in direct contact with electrical heating cables or hot water pipes.

Suspended beam and block floors

7.2 Where the boards are installed on a floor of a suspended beam and block design, all services must be installed in accordance with the Agrément Certificate for that floor.

Other types of floor

7.3 Where possible, electrical conduits, gas and water pipes or other services should be contained within ducts or channels within the concrete slab. Where this is not possible, the services may be accommodated within the insulation, provided they are securely fixed to the concrete slab (see

section 6.2 of the Front Sheets). Electrical cables should be enclosed in a suitable conduit. With hot pipes the insulation must be cut back to maintain an air space.

7.4 Where water pipes are installed, either within the slab or the boards, they must be pre-lagged.

7.5 For floors incorporating chipboard overlays, where access to the services is desirable, a duct may be formed by mechanically fixing to the floor timber bearers of the same thickness as the insulation to provide support for a chipboard cover. The duct should be as narrow as possible and not exceed the maximum chipboard spans recommended in BS 7916 : 1998.

Technical Investigations

The following is a summary of the technical investigations carried out on Jablite Flooring HD and EHD for Non-Domestic Concrete Ground Floors.

8 Investigations

8.1 Existing data relating to the thermal insulation properties and equilibrium moisture content of the material were examined.

8.2 An assessment of the risk of interstitial condensation was made.

8.3 An assessment of resistance to imposed loads was made.

Bibliography

- BS 3837 *Expanded polystyrene boards*
Part 1 : 1986(1996) *Specification for boards manufactured from expandable beads*
- BS 5268 *Structural use of timber*
Part 5 : 1989(1997) *Code of practice for the preservative treatment of structural timber*
- BS 6399 *Loading for buildings*
Part 1 : 1996 *Code of practice for dead and imposed loads*
- BS 7916 : 1998 *Code of practice for the selection and application of particleboard, oriented strand board (OSB), cement bonded particleboard and wood fibreboards for specific purposes*
- BS 8203 : 1996 *Code of practice for installation of resilient floor coverings*
- BS 8204 *Screeds, bases and in-situ floorings*
BS 8204-1 : 1999 *Concrete bases and cement-sand levelling screeds to receive floorings — Code of practice*
BS 8204-2 : 1999 *Concrete wearing surfaces — Code of practice*
- BS EN 312 *Particleboards. Specifications*
BS EN 312-1 : 1997 *General requirement for all board types*
BS EN 312-5 : 1997 *Requirements for load-bearing boards for use in humid conditions*
- CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*



On behalf of the British Board of Agrément

Date of issue: 9th June 2000

A handwritten signature in black ink, appearing to read 'P. C. Newson'.

Chief Executive



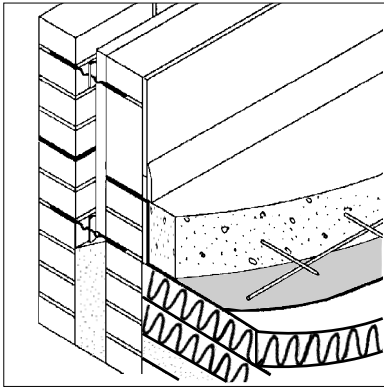
Vencel Resil Ltd

**JABCORE FOR CONCRETE
GROUND FLOORS**

Certificate No 87/1796

DETAIL SHEET 4

Product



- THIS DETAIL SHEET RELATES TO JABCORE FOR CONCRETE GROUND FLOORS.
- The product is for use as support beneath ground-bearing concrete floors and may be installed on sand-blinded subsoil bases.
- The product is used as a structural support and reduces the thermal transmittance of new floors. It also removes the need to use conventional hard core.
- It is essential that the floors comply with the conditions set out in the Design Data and Installation parts of this Certificate.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the system's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification.

Technical Specification

1 Description

1.1 JabcCore for Concrete Ground Floors comprises grades SD and HD, Type N, expanded polystyrene board manufactured to BS 3837-1 : 1986(1996).

1.2 Boards with a flame retardant additive (Type A) are also available.

1.3 The boards have the nominal characteristics of:

size (mm)	1200 x 1200
	1200 x 1800
	1200 x 2400
edge	plain
thickness (mm) ⁽¹⁾	75, 100, 150
density (kgm ⁻³)	15, 20

(1) Other thicknesses available subject to order to a maximum of 300 mm.

Design Data

2 General

2.1 JabcCore for Concrete Ground Floors is effective in reducing the U value (thermal transmittance) of new floors incorporating a concrete slab overlay. It is primarily intended for use in domestic/residential type constructions defined by BS 8103-1 : 1995.

2.2 Ground-bearing floors incorporating the boards must include a suitable damp-proof membrane (dpm), for example, laid in

accordance with CP 102 : 1973 (see section 4.2 of this Detail Sheet). The dpm may be positioned either above or below the product, or above the concrete slab.

2.3 The boards are adversely affected by oil and other hydrocarbons or organic compounds that may be present on 'brownfield' sites⁽¹⁾. Any such contaminants must be removed, filled, or sealed (with a suitable impermeable barrier) prior to installation to satisfy the national Building Regulations:

England and Wales

Requirement C2

Scotland

Standard G2.1

Northern Ireland

Regulation C2.

(1) Guidance to identify and treat such sites is given in the Approved Document and Technical Booklet supporting these Regulations.

2.4 The boards are not designed to provide protection against ground heave.

3 Thermal insulation

3.1 For the purpose of U value calculations to determine if the requirements of the Building (or other statutory) Regulations are met, the thermal conductivity (λ value) of the boards may be taken as:

SD	0.037 Wm ⁻¹ K ⁻¹
HD	0.034 Wm ⁻¹ K ⁻¹



3.2 The requirement for limiting heat loss through the building fabric can be satisfied if the U values of the building elements, including the effects of thermal bridging, do not exceed the maximum values in the relevant Elemental Methods given in the national Building Regulations:

England and Wales

Approved Document L

Scotland

Technical Standards, Part J

Northern Ireland

Technical Booklet F.

3.3 Guidance is also given in these documents on selecting the thickness of insulation required to enable a floor to achieve the desired U value. Alternative approaches are also described which allow for some flexibility in design of U values for individual construction elements.

4 Moisture penetration

4.1 Floors constructed in accordance with this Certificate will not allow moisture to cross the floor construction.



4.2 For floors subject to national Building Regulations, construction should be as detailed or designed in accordance with the relevant provisions of:

England and Wales

Approved Document C, Technical Solutions 3.4 to 3.8

Scotland

Technical Standards, Standard G2.6, Sections A or D of the Provisions deemed to satisfy the standards

Northern Ireland

Technical Booklet C.

5 Floor loading

The compressive strength of Jabcore at 1% nominal strain is 20 kNm^{-2} for grade SD and 45 kNm^{-2} for grade HD. The BBA recommends that the total ultimate design load⁽¹⁾ of the ground floor structure is maintained within these limits.

(1) For thicknesses of Jabcore up to 300 mm.

Installation

6 General

6.1 Jabcore for Concrete Ground Floors is 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 may be made to BRE Report *Thermal insulation : avoiding risks* 1994.

6.2 The boards are easily handled and can be cut to size as necessary with a sharp knife or fine toothed saw.

6.3 A suitable dpm (as described in section 2.2) should be incorporated to resist moisture from the ground. It can be placed either above or below the boards or above the concrete slab. Care should also be taken to ensure that the integrity of the dpm is maintained.

6.4 If the presence of hydrocarbons and other organic chemical compounds are considered a possibility, the product must be fully protected with a suitable impermeable membrane (see section 2.3).

7 Procedure

7.1 The boards are cut to size, as necessary, and laid in a single or double layer with closely butted joints. If a double layer is used, through-joints must be avoided.

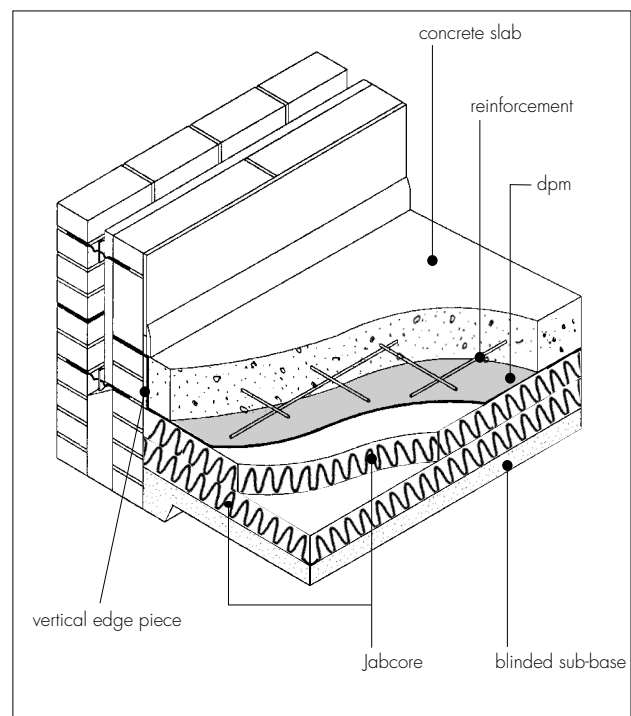
7.2 The top board joints should be covered with 75 mm wide adhesive tape to prevent the ingress of concrete between the boards.

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

7.4 A type A98 steel-mesh reinforcement to BS 4483 : 1985, or other suitable 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 boards or the dpm.

Concrete slab overlay (Figure 1)

Figure 1 Typical application



7.5 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 boards or the dpm

should be protected from impact damage or excessive trafficking by the use of spreader boards.

7.6 The concrete slab is finished as required.

8 Incorporation of services

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

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

8.3 Where water pipes are installed either within the slab or the boards they must be pre-lagged.

Technical Investigations

The following is a summary of the technical investigations carried out on Jabcore for Concrete Ground Floors.

9 Tests

Tests were carried out to determine:
compressive strength at 1% nominal strain
density
dimensional accuracy.

10 Other investigations

10.1 Existing data on which previous Certificates were based was examined relating to:
thermal insulation properties
equilibrium moisture content
compressive strength at 10% compression
density and dimensional accuracy.

10.2 An assessment of the risk of interstitial condensation was made.

10.3 An assessment of resistance to imposed loads was made.

Bibliography

BS 3837 *Expanded polystyrene boards*
BS 3837-1 : 1986(1996) *Specification for boards manufactured from expandable beads*

BS 4483 : 1985 *Specification for steel fabric for the reinforcement of concrete*

BS 8103 *Structural design of low-rise buildings*
BS 8103-1 : 1995 *Code of practice for stability, site investigation, foundations and ground floor slabs for housing*

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



On behalf of the British Board of Agrément

Date of issue: 10th November 2000

A handwritten signature in black ink, appearing to read 'P. C. Newson', is written over a light grey background.

Chief Executive

Electronic Copy

