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Agrément Certificate 87/1796 Product Sheet 1

VENCEL RESIL JABFLOOR BOARDS

JABFLOOR 70

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Jabfloor 70, an expanded polystyrene beadboard for use as thermal insulation in domestic concrete floors.

AGRÉMENT 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 product can contribute to enabling a building to achieve the requirement of notional target carbon emission rates. The thermal conductivity ($\lambda_{90/90}$ value) of the product is declared by the Certificate holder (see section 5).

Condensation — the product can adequately limit the risk of surface condensation on floors (see section 6).

Behaviour in relation to fire - the product will be contained within the floor by the overlay until the overlay itself is destroyed (see section 7).

Floor loading — the product, covered with a timber-based board or screed overlay, can support design loadings for self-contained dwelling units as defined in BS 6399-1 : 1996 without undue compression deflection (see section 8). **Durability** — the product, when installed with the overlays specified, will remain effective as an insulating material for the life of the building in which it is incorporated (see section 11).

The BBA has awarded this Agrément 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.

Chris Hunt

On behalf of the British Board of Agrément

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Head of Approvals - Physics

n A Gener

Greg Cooper Chief Executive

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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.

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Regulations

In the opinion of the BBA, Jabfloor 70, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:

The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	A1	Loading
Comment:		Floors incorporating the product can meet this Requirement. See section 8 of this Certificate.
Requirement:	C2(a)(c)	Resistance to moisture
Comment:		Floors incorporating the product can meet this Requirement. See sections 6.1 and 6.3 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The product can contribute to meet its Target Emission Rate. See sections 5.3 to 5.6 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.

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

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Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The product can contribute to a construction satisfying this Regulation. See sections 10 and 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	1.1(a)(b)	Structure
Comment:		Floors incorporating the product can satisfy this Standard, with reference to clause 1.1.1(1). See section 8 of this Certificate.
Standard:	3.15	Condensation
Comment:		Floors incorporating the product can satisfy this Standard, with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.4 ⁽¹⁾ . See sections 6.1 and 6.4 of this Certificate.
Standard:	6.1(a)(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying clauses, or parts of, 6.1.2 ⁽¹⁾ , 6.1.6 ⁽¹⁾ , 6.2.1 ⁽¹⁾ , 6.2.3 ⁽¹⁾ , and 6.2.9 ⁽¹⁾ to 6.2.12 ⁽¹⁾ of these Standards. See sections 5.3 to 5.6 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for the product under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾ and Schedule 6 ⁽¹⁾ .
		(1) Technical Handbook (Domestic).

The Building Regulations (Northern Ireland) 2000 (as amended) :52 B2 Fitness of materials and workmanship Regulation: The product is acceptable. See section 11 and the Installation part of this Certificate. Comment: Suitability of certain materials B3(2) Regulation: The product is acceptable. See section 10 of this Certificate. Comment: Regulation: C5 Condensation The product can contribute to minimising the risk of condensation. See section 6.1 of this Certificate. Comment: Regulation: D1 Stability Floors incorporating the product can meet this Regulation. See section 8 of this Certificate. Comment: Regulation: F2(a)(i) Conservation measures Target carbon dioxide Emissions Rate Regulation: F3 The product can contribute to a building satisfying its Target Emission Rate. See sections 5.3 to 5.6 of this Comment: Certificate. The products do not normally require maintenance. See section 10 of this Certificate. Comment

Construction (Design and Management) Regulations 2007 Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligation under these Regulations.

See section: 2 Delivery an

2 Delivery and site handling (2.1 and 2.2).

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of Jabfloor 70, when installed and used in accordance with this Certificate, in relation to NHBC Standards, Chapter 5.1, Substructure and ground bearing floors.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Jabfloor 70, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 3 *Substructure*, Sub-section *Floors*.

General

This Certificate relates to Jabfloor 70, an expanded polystyrene beadboard for use as thermal insulation in domestic concrete floors.

Technical Specification

1 Description

1.1 Jabfloor 70 comprises EPS 70 expanded polystyrene board manufactured in accordance with BS EN 13163 : 2001.

1.2 In relation to reaction to fire tests, the boards are classified as Class F in accordance with BS EN 13501-1 : 2007. However, when requested, the product can be supplied as Class E.

1.3 The boards have the nominal characteristics shown in Table 1.

Table 1 Nominal char	acteristics
Size (mm)	1200 by 2400, 1200 by 1200
Edge	plain
Thickness (mm)	25, 30, 40, 50, 60, 75, 100, 120, 150 and 200
Density (kgm ⁻³)	15
At 10% compression (kPa)	70

2 Delivery and site handling

2.1 The product is 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.

2.2 The product 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 or timber newly treated with creosote.

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

2.4 The product must not be exposed to open flame or other ignition sources.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Jabfloor 70.

Design Considerations

3 General

3.1 Jabfloor 70 is effective in reducing the thermal transmittance (U value) of new or existing ground floors.

3.2 Ground-supported concrete floors incorporating the product must include a suitable damp-proof membrane laid in accordance with the relevant Clauses of CP 102 : 1973, BS 8102 : 1990 and/or BS 8215 : 1991 (see section 9 of this Certificate).

3.3 Suspended concrete or timber ground floors incorporating the boards must include a damp-proof membrane or suitable ventilation of the sub-floor as appropriate (see section 9).

3.4 The overlay to the boards should either be:

- a cement-based floor screed laid in accordance with the relevant Clauses of BS 8204-1 : 2003 and/or BS 8204-2 : 2003
- a particle board Grade P5 or P7 to BS EN 312 : 2003
- a concrete slab.

4 Practicability of installation

The product is designed to be installed by a competent general builder, or a contractor, experienced with this type of product.

5 Thermal Performance

5.1 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) *Conventions for U-value calculations* using the declared thermal conductivity 0.038 $Wm^{-1}K^{-1}$ ($\lambda_{90/90}$ value) for the boards.

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

	Perimeter/area ratio		Insulation th	ickness (mm)	
		100	120	150	200
	0.2	0.17	0.16	0.14	0.12
	0.4	0.22	0.20	0.17	0.14
Slab on ground	> 0.6	0.25	0.22	0.19	0.15
	0.8	0.26	0.23	0.20	0.16
)	1.0	0.27	0.24	0.20	0.16

 Table 2
 Example ground supported floor U values (Wm⁻²K⁻¹) for Jabfloor 70

5.3 When considering insulation requirements, designers should refer to the detailed guidance contained in the documents supporting the national Building Regulations. The U values shown in Table 1 indicate that the product can enable, or contribute to enable, a floor to achieve the following typical design U values referred to in those supporting documents (see Table 3 and Table 4).

Table 3 Typical design U values for floors — England and Wales and Northern Ireland

0.22	Mean for new extensions ⁽¹⁾
0.25	'Notional' mean in SAP and SBEM and limit mean for new build
0.25	Mean for replacement, renovated and retained floors and non-domestic consequential improvements ⁽¹⁾
0.70	Individual limit for new build and flexible approaches ⁽¹⁾

Typical design U values for floors — Scotland		
Construction type		
'Notional' mean for new dwellings in SAP and the 'simplified' approach: – solid fuel, packages 3 and 6 – other fuels, packages 1, 2, 4 and 5 Mean for conversion of unheated buildings and stand alone buildings of less than 50 m ²		
Mean for extensions and alterations ⁽¹⁾		
'Notional' mean for non-domestic in SBEM and limit mean for all new build and stand alone buildings of 50 $\rm m^2$ or more		
Individual limit for new build, new extensions, and alterations ⁽¹⁾ and conversions of heated buildings and stand alone buildings of less than 50 m ²		

(1) Refer to relevant documents supporting the national Building Regulations for alternative or flexible approaches.

New buildings

5.4 Floors with U values lower than (or the same as, for dwellings in Scotland) the relevant 'notional' value specified in Tables 3 or 4 will contribute to a building meeting its Target Emission Rate. Floors with higher U values will require additional energy saving measures in the building envelope and/or services.

5.5 The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between floors and external walls. Details shown in Figure 1 will allow use of the default psi values for Accredited Construction details in Emission Rate calculations to SAP 2005 or the Simplified Building Energy Model (SBEM). Detailed guidance in this respect and on limiting heat loss by air infiltration can be found in:

England and Wales – TSO 2002 publication *Limiting thermal bridging and air leakage: Robust construction details* for dwellings and similar buildings or Accredited Construction Details (version 1.0).

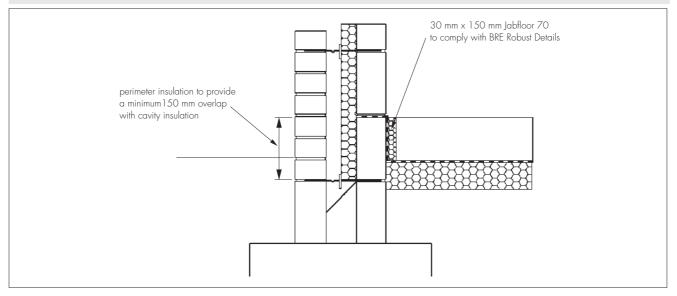
Scotland – Accredited Construction Details (Scotland)

Northern Ireland — Accredited Construction Details (version 1.0).

Existing buildings

5.6 For existing buildings, extensions or conversions, floors will be acceptable where they do not exceed the relevant U value in Tables 3 or 4 and junctions comply with section 5.5.

Figure 1 Junction between floors and walls



6 Condensation

Interstitial condensation



🐲 6.1 Floors will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2002, Section 8.5 and Appendix D. The product has a water vapour resistivity exceeding 145 MNsg⁻¹m⁻¹.

6.2 A vapour control layer in the warm side of the insulation, or the damp-proof membrane (acting as a VCL) situated (as appropriate) in the warm side, might be required to limit the risk of interstitial condensation.

Surface condensation

🐔 6.3 Floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.7 Wm⁻²K⁻¹ at any point, and the junctions with walls are designed in accordance with the Ð, relevant requirements of TSO publication Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings, 2002 or BRE Information Paper IP 01/06.



6.4 Floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does S, not exceed 1.2 Wm⁻²K⁻¹ at any point. Guidance may be obtained from Section 8 of BS 5250 : 2002 and BRE report (BR 262 : 2002) Thermal insulation : avoiding risks.

7 Behaviour in relation to fire

7.1 The product does not prejudice the fire-resistance properties of the floor provided they are used in accordance with BS 6203 : 2003.

7.2 When properly installed, the product 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. Therefore, the product will not contribute to the development stages of a fire or present a smoke or toxic hazard.

8 Floor Loading

The product is suitable for occupancies defined in this Certificate (see section 3.4) when covered with a suitable floor covering and are capable of resisting a uniformly distributed load of < 1.5 kNm⁻² and a concentrated load of < 1.4 kN for category A1 and type A situations for domestic and residential activities as defined in BS EN 1991-1-1 : 2002, National Annex, Table NA.2 and BS 6399-1 : 1996, Table 1 respectively. Further assessment is necessary in the case of duty walkways and floors subject to physical activities.

9 Moisture penetration

- 9.1 The product can be used above or below the dpm.
- 9.2 For floors subject to national Building Regulations, construction should be as detailed or designed in accordance with:

England and Wales – Approved Document C, Section 4

Scotland – Mandatory Standard 3.4, clauses $3.4.2^{(1)}$ to $3.4.4^{(1)}$ and $3.4.6^{(1)}$

(1) Technical Handbook (Domestic).

Northern Ireland – Technical Booklet C, Section 1.

10 Maintenance



As the product is confined within the floor and it has suitable durability (see section 11), maintenance is not required.

11 Durability



The product is 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.

Installation

12 General

12.1 Installation of Jabfloor 70 must be in accordance with the Certificate holder's installation instructions and the requirements of this Certificate.

12.2 Typical methods are shown in Figures 2 to 4. Reference to the methods should also be made to BRE report (BR 262 : 2002).

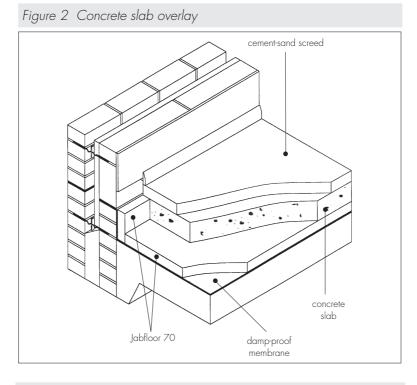
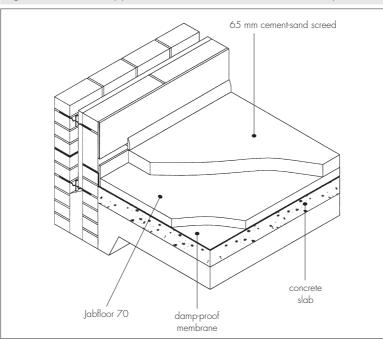
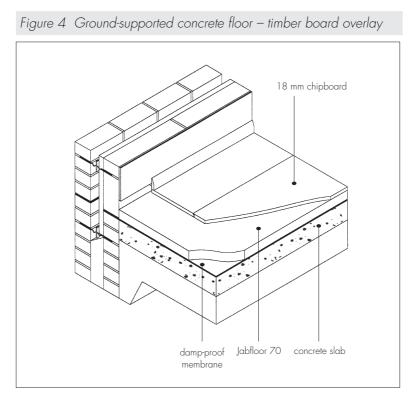


Figure 3 Ground-supported concrete floor — screed overlay



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12.3 All concrete floor surfaces should be smooth, level and flat to within 5 mm when measured with a two-metre straight-edge. Irregularities greater than this must be removed, whilst minor irregularities (up to 10 mm deep) may be levelled with mortar or thin screed.

12.4 In ground-supported concrete floors, the concrete floor slab over which the product is laid should be left for as long as possible to maximise drying out and dissipation of constructional moisture, in accordance with BS 8203 : 2001, Section 3.1.2.

12.5 Where the product is used over ground-supported concrete floor slabs a suitable damp-proof membrane in accordance with CP 102 : 1973, Section 11 and BS 8204-1 : 2003 or BS 8204-2 : 2003 should be laid to resist moisture from the ground. If a liquid-type damp-proof membrane is applied to the slabs, it should be of a type compatible with the boards and be allowed to dry out fully prior to installation of the product.

12.6 Where the product is used on hardcore bases under ground-supported concrete slabs, the hardcore must be compacted and blinded with a thin layer of sand before application of the dpm and boards.

12.7 The product can be used on beam-and-block suspended concrete floors, that are subject of a current Agrément Certificate and installed in accordance with, and within the limitations imposed by that Certificate, or those designed and installed to the precast and general loading codes, that have been assessed as suitable.

12.8 Where a screed or concrete slab is laid over the product, vertical upstands of insulation should be provided and be of sufficient depth to fully separate the screed or slab from the wall and provide a minimum thermal resistance of 0.75 m²KW⁻¹. Alternatively, a suitable partial fill cavity wall insulation material can be extended below the dampproof course level to provide edge insulation to the floor.

12.9 To limit the risk of damage from condensation and other sources of dampness, the boards and overlays should only be laid after the construction is made substantially weathertight, eg after glazing. During construction the boards must also be protected from water spillage, plaster droppings and traffic.

12.10 The product can be cut using a sharp knife or fine-toothed saw to fit around service penetrations.

13 Procedure

13.1 The product is cut to size, as necessary and laid with closely-butted, staggered cross-joints, ensuring that all spaces are completely filled.

Timber-based board overlay

13.2 For best results, the substrate should be as level and even as possible.

13.3 Before laying the particle board or OSB overlays, pre-treated timber battens, in accordance with BS 1282 : 1999, are positioned at doorways, access panels and to support partitions. Adequate time should be allowed for CCA-based preservatives to be fixed and the solvents from solvent-based preservatives to evaporate.

13.4 When the dpc is below the slab, a vapour control layer of polyethylene sheet with a minimum thickness of 250 µm (1000 gauge) is laid between the insulation boards and the overlay boards. The polyethylene sheet must have 150 mm overlaps taped at the joints and turned up 100 mm at the walls.

13.5 Particle board (type P4 to P7), tongue-and-groove 18 mm thick plywood, or OSB/2 to OSB/4 is laid with staggered cross-joints in accordance with DD ENV 12872 : 2000.

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

13.7 Where there are long, uninterrupted lengths of floor, eg corridors, proprietary expansion joints should be installed at intervals on the basis of a 2 mm gap per metre run of overlay board.

13.8 Before the overlay boards are interlocked, a waterproof PVA adhesive is applied to the joints.

13.9 Once the overlay board is laid, temporary wedges are inserted between the walls and the floor to maintain tight joints until the adhesive has set.

13.10 When the wedges are removed and before the skirting boards are fixed, suitable compressible filler, eg foamed polyethylene, should be fitted around the perimeter of the floor between the overlay board and the walls.

13.11 Where there is a likelihood of regular water spillage, eg in rooms such as kitchens, bathrooms, shower and utility rooms, additional particle board protection should be considered, eg by a continuous flexible vinyl sheet flooring, with welded joints, turned up at abutments and cove skirting.

Cement-based screed overlay

13.12 Perimeter edge pieces are cut and placed around the edges and all floor joints taped, or a polythene vapour control layer, minimum 125 µm thick, is laid over the boards with 150 mm laps. A properly-compacted screed of a minimum 65 mm thickness is then laid over. The relevant clauses of BS 8204-1 : 2003 or BS 8204-2 : 2003 should be followed and BRE's *Building Elements, Floors & Flooring*, Chapter 4.2, should be consulted.

Concrete slab overlay (ground-bearing only)

13.13 Perimeter edge pieces are cut and placed around the edges and taped at joints. A vapour control layer, minimum 125 µm thick, is laid over the boards with 150 mm laps. The concrete slab is laid to the required thickness in accordance with BS 8000-9 : 2003 and BS 8204-1 : 2003.

14 Incorporation of services

14.1 De-rating of electrical cables should be considered where the insulation restricts air cooling of cables and the boards must not be used in direct contact with electrical heating cables or hot water pipes.

14.2 Where the product is 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 and/or with the relevant current codes of practice.

14.3 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. Electrical cables should be enclosed in a suitable conduit. With hot pipes the insulation must be cut back to maintain an air space.

14.4 Where water pipes are installed below the insulation they should be pre-lagged. Generally, insulation will be relatively thin so it would not be possible to install pipes within the insulation. Pipes installed above the insulation will not require lagging, although some provision needs to be made for expansion and contraction.

14.5 On board overlay floors, in situations 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 particle board cover. The duct should be as narrow as possible and not exceed 400 mm in width or the maximum particle board spans given in DD ENV 12872 : 2000 without intermediate support. Services should be suitably fixed to the floor base and not to the insulation boards (see section 5.4 with regard to limiting heat loss).

Technical Investigations

15 Tests

15.1 The manufacturing process of Jabfloor 70 was examined, including the methods adopted for quality control and details were obtained of the quality and composition of the materials used.

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

- compressive strength at 10% compression
- density
- dimensional accuracy.

16 Investigations

16.1 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.

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

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

Bibliography

BS 1282 : 1999 Wood preservatives - Guidance on choice, use and application

BS 5250 : 2002 Code of practice for control of condensation in buildings

BS 6203 : 2003 Guide to fire characteristics and fire performance of expanded polystyrene materials (EPS and XPS) used in building applications

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

BS 8000-9 : 2003 Workmanship on building sites — Cementitious levelling screeds and wearing screeds — Code of practice

BS 8102 : 1990 Code of practice for protection of structures against water from the ground

BS 8203 : 2001 Code of practice for installation of resilient floor coverings

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

BS 8215 : 1991 Code of practice for design and installation of damp-proof courses in masonry construction

BS EN 312 : 2003 Particleboards – Specifications

BS EN 1991-1-1 : 2002 UK National Annex to Eurocodes 1: Actions on structures — General actions — Densities, self-weight, imposed loads for buildings

BS EN 13163 : 2001 Thermal insulation products for buildings — Factory made products of expanded polystyrene (EPS) — Specification

BS EN 13501-1 : 2007 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 13370 : 1998 Thermal performance of buildings – Heat transfer via the ground – Calculation methods

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

DD ENV 12872 : 2000 Wood-based panels — Guidance on the use of load-bearing boards in floors, walls and roofs

17 Conditions

17.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

17.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

17.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

17.4 In granting this Certificate, the BBA is not responsible for:

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

17.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does 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; 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. 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 manufacture, supply, installation, use and maintenance of this product/system.

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