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BBA APPROVAL INSPECTION TESTING CERTIFICATION
TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate
13/5021
Product Sheet 1

STYRENE FLOOR SYSTEMS

STYLITE T BEAM AND STYLITE T BEAM PLUS BLOCKS

This Agrément Certificate Product Sheet(1) relates to the Stylite T Beam and Stylite T Beam Plus Blocks, a range of expanded polystyrene (EPS) blocks for use as thermal insulation in suspended concrete ground floors (over a sub floor void) in domestic, residential and commercial buildings. They are for use in conjunction with precast concrete beams and structural concrete toppings.

(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 EPS blocks can enable a floor to meet the design U values specified in the documents supporting the national Building Regulations (see section 6).

Condensation risk — the EPS blocks can contribute to minimising the risk of interstitial and surface condensation in floors (see section 7).

Structural performance — the EPS blocks have adequate strength to carry short-term loads likely to be encountered during construction of the floor but make no further loadbearing contribution once the structural concrete topping has reached full strength (see section 8).

Durability — the EPS blocks have adequate durability and will have a design life equivalent to that of the building in which they are incorporated (see section 10).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 26 July 2013

Brian Chamberlain
Head of Approvals — Engineering

Claire Curtis-Thomas
Chief Executive

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, Stylite T Beam and Stylite T Beam Plus Blocks, if installed, used and maintained in accordance with this Certificate, will meet or contribute to meeting 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:	C2(c)	Resistance to moisture
Comment:		The blocks will contribute to limiting the risk of surface and interstitial condensation. See sections 7.1 and 7.4 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The blocks will contribute to meeting this Requirement. See section 6.4 of this Certificate.
Regulation	7	Materials and workmanship
Comment:		The blocks are acceptable. See section 10 and the *Installation* part of this Certificate.
Regulation:	26	CO_2 emission rates for new buildings
Comment:		The blocks will contribute to meeting this Regulation. See section 6.4 of this Certificate

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The blocks can contribute to a construction meeting this Regulation. See section 10 and the *Installation* part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.15	Condensation
Comment:		The blocks will contribute to limiting the risk of surface and interstitial condensation, 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 blocks will contribute to satisfying the requirements of this Standard, with reference to clauses 6.1.1[1], 6.1.2[2] 6.1.6[1], 6.1.10[2], 6.2.1[1][2], 6.2.3[1], 6.2.4[2], 6.2.5[1], 6.2.9[1], 6.2.10[1], 6.2.11[2], 6.2.12[2], 6.2.13[1]. See section 6.4 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The blocks can contribute to meeting 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 blocks 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 6.4 of this Certificate.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012

Regulation:	23(a)(i)(iii)(b)	Fitness of materials and workmanship
Comment:		The blocks are acceptable. See section 10 and the *Installation* part of this Certificate.
Regulation:	29	Condensation
Comment:		The blocks will contribute to limiting the risk of interstitial condensation. See section 7.1 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:		The blocks will contribute to satisfying these Regulations. See section 6.4 of this Certificate.

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 obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.2 and 3.3) and 8 *Structural performance* (8.2 to 8.4) of this Certificate.

Additional Information

NHBC Standards 2013

NHBC accepts the use of Stylite T Beam and Stylite T Beam Plus Blocks, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards,* Chapter 5.2 *Suspended ground floors.*

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 15037-4 : 2010. An asterisk(*) appearing in this Certificate indicates that data shown is given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

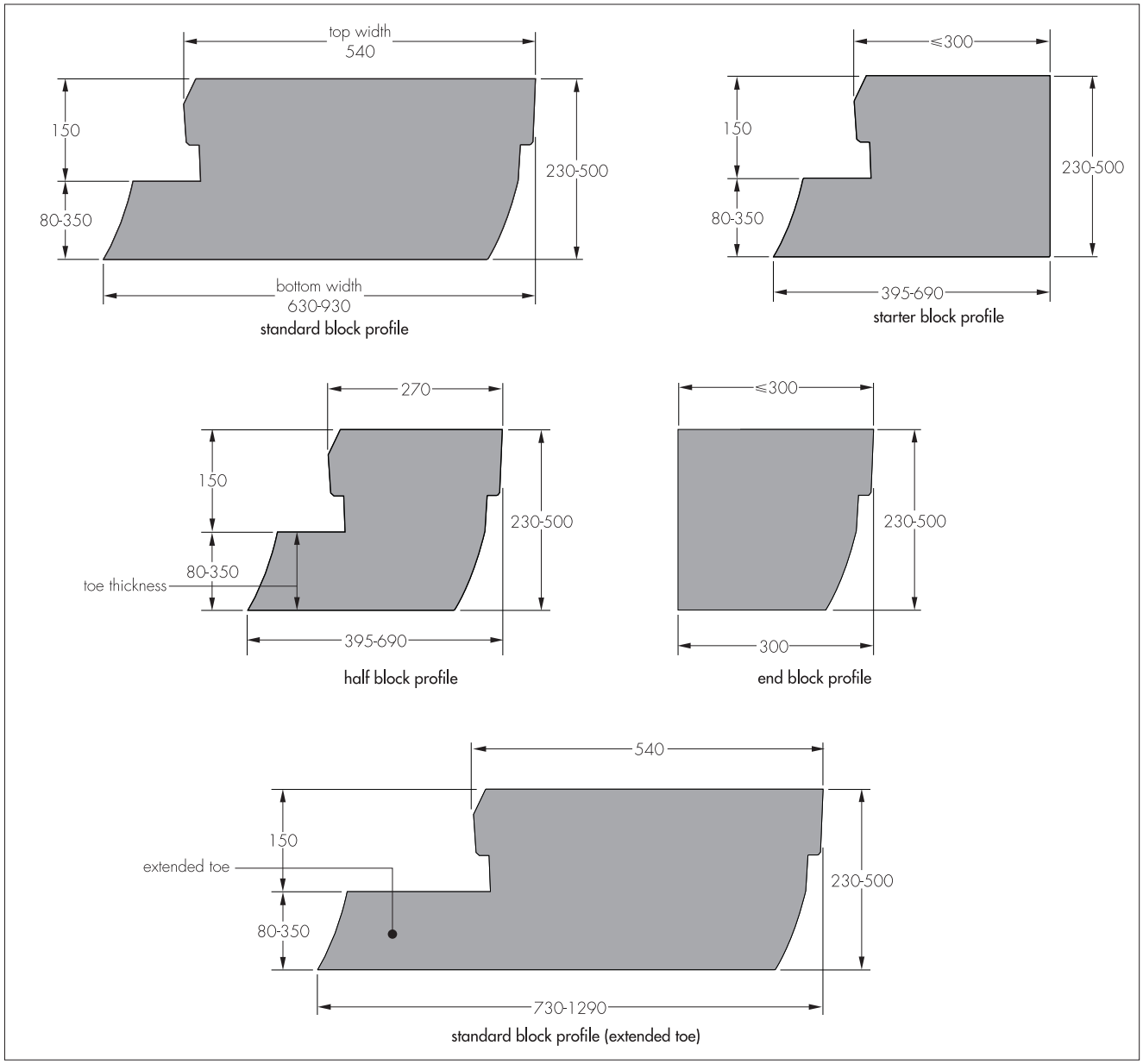
Stylite T Beam and Stylite T Beam Plus Blocks comprise a range of expanded polystyrene (EPS) thermal insulation blocks (see Table 1). There are two grades available Stylite T Beam (white) and Stylite T Beam Plus (grey) and both are profiled to fit in between and underneath the specified precast concrete beams (see Figure 1).

Table 1 EPS block properties

Property	Value
Length (mm)	1200
Top width (mm)	
– standard blocks	540
– half blocks	270
– starter blocks	≤300
– end blocks	≤300[1]
Bottom width (mm)	
– standard blocks	630 – 930
– standard blocks – extended toe	730 – 1290[2]
– half blocks	395 – 690
– starter blocks	395 – 690
– end blocks	≤300[1]
Overall thickness (mm)[3]	
– for use with 150 x 100 beams	230 – 500
– for use with 225 x 180 beams	290 – 575
Toe thickness (mm)	
– for use with 150 x 100 beams	80 – 350
– for use with 225 x 180 beams	65 – 350
Thermal conductivity λ_D ($W \cdot m^{-1} \cdot K^{-1}$)	
– Stylite T-beam	0.036
– Stylite T-beam Plus	0.030
Moisture diffusion coefficient (μ)	30-70

(1) End blocks can be fabricated from cut down standard or half blocks
(2) All available with toe widths to cover single, double and triple beams
(3) Five standard thicknesses for each nominal beam size

Figure 1 Example EPS block dimensions (for 150 x 100 beams)

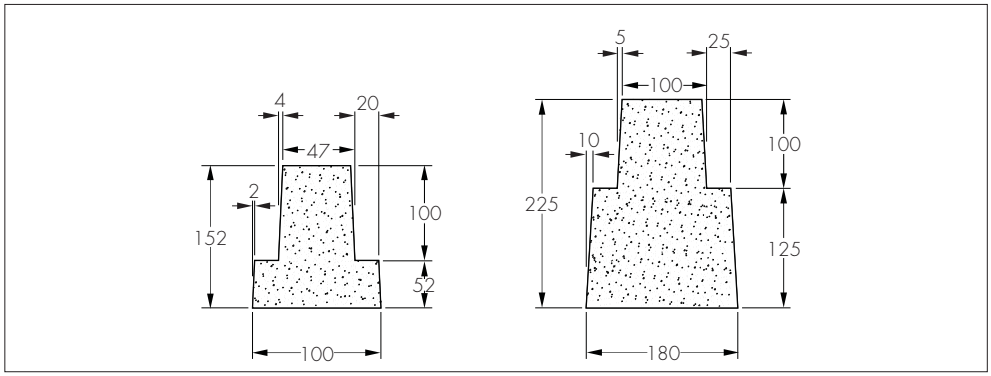


1.2 EPS blocks can be supplied with different toe widths to fit corresponding concrete beams with different widths (as shown in section 1.3).

1.3 Ancillary Items used in conjunction with the blocks (but not covered by this Certificate) include the following:

- precast concrete beams — see section 8.7 and Figure 2
- insulation strips — for perimeter of structural concrete toppings
- gas barrier membrane — where required
- structural concrete toppings — see sections 8.8 to 8.10.

Figure 2 Typical precast concrete beams



2 Manufacture

2.1 The EPS blocks are manufactured using conventional moulding and cutting techniques to the required profile from expanded polystyrene beads.

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.

3 Delivery and site handling

3.1 The EPS blocks are wrapped in polythene, but are otherwise unprotected. Therefore, reasonable care must be taken during transit and storage to avoid damage. Particular attention will be required for blocks with extended toe lengths.

3.2 The blocks should be stacked on a flat base, clear of the ground and protected against prolonged direct sunlight and secured to avoid wind damage. Care must be taken to avoid contact with solvents and with materials containing volatile organic components.

3.3 The blocks must not be exposed to flame or ignition sources. Careful consideration should also be given to the management of fire risk when in storage.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Stylite T Beam and Stylite T Beam Plus Blocks.

Design Considerations

4 General

4.1 Stylite T Beam and Stylite T Beam Plus Blocks are assessed as suitable for use as part of a suspended ground floor (over a sub floor void) in domestic, residential and commercial buildings.

4.2 The minimum void depth is 150 mm but this may need to be increased to facilitate the installation of the thicker range of EPS blocks and or those with extended toes, or where clay soils susceptible to volume change potential are present. The void depth should therefore be carefully considered and specified as part of the design of the overall floor construction for each project.

4.3 Electrical cables running within the polystyrene should be enclosed in a suitable conduit, such as rigid PVC.

4.4 The EPS blocks can be used in floors with suitable underfloor heating systems. Care must be taken to ensure that the minimum design thickness of structural concrete topping is maintained, eg above pipes.

5 Practicability of installation

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

6 Thermal performance

6.1 The overall floor U value will depend significantly on the deck U value, the ratio of the exposed (and semi-exposed) floor perimeter length to floor area (p/a ratio), the amount of under-floor ventilation and the ground thermal conductivity. Each floor U value should therefore be calculated to BS EN ISO 13370 : 2007 and BRE report (BR443 : 2006).

6.2 A floor deck U value (from inside to the underfloor void) will depend significantly on the size and number of precast concrete beams, the EPS block type, toe thickness and width of any gap between adjacent EPS blocks in the toe layer. The thermal resistance of each beam and EPS block configuration should be numerically modelled to BS EN ISO 10211 : 2007 and BS EN 15037-4 : 2010. The floor deck U value may then be taken as an area weighted average and the overall floor U value calculated as described in section 6.1

6.3 Example floor U values are given in Table 2 but do not include any multiple or reduced centre beams and therefore may only be used for comparison purposes and may not be used for specifications, Regulatory compliance or SAP calculations. Individual floor U values should be obtained as described in sections 6.1 and 6.2.

6.4 As an approximate guide, the U values in Table 2 will increase by up to 0.02 $W \cdot m^{-2} \cdot K^{-1}$ where 75% of the floor area comprises single beams at full centres and 25% of the floor area includes any combination of single beams at reduced centres or double beams at full or reduced centres. The actual increase will depend on beam type, toe thickness and p/a ratio. The EPS blocks can therefore enable a floor to meet, or improve on, the design floor U values of 0.15 to 0.25 $W \cdot m^{-2} \cdot K^{-1}$ specified in documents supporting the national Building Regulations.

Table 2 Example U values ($W \cdot m^{-2} \cdot K^{-1}$) – Single beams at full centres – For comparative purposes only

Beam size (dimensions in mm)	p/a ratio	Standard EPS block thickness (mm)									
		Stylite T Beam (white)					Stylite T Beam Plus Plus (grey)				
		230	260	290	380	500	230	260	290	380	500
152 x 99	0.4	0.17	0.15	0.13	0.10	0.08	0.15	0.13	0.12	0.09	0.07
	0.6	0.18	0.16	0.14	0.10	0.08	0.16	0.14	0.12	0.09	0.07
	0.7	0.18	0.16	0.14	0.10	0.08	0.16	0.14	0.12	0.09	0.07
	0.9	0.19	0.16	0.14	0.11	0.08	0.16	0.14	0.12	0.09	0.07
		290	350	380	450	575	290	350	380	450	575
225 x 180	0.4	0.17	0.15	0.13	0.10	0.08	0.15	0.13	0.12	0.09	0.07
	0.6	0.18	0.16	0.14	0.10	0.08	0.16	0.14	0.12	0.09	0.07
	0.7	0.19	0.16	0.14	0.11	0.08	0.17	0.14	0.12	0.09	0.07
	0.9	0.19	0.17	0.14	0.11	0.08	0.17	0.14	0.13	0.09	0.07

Notes:

- These calculations are in accordance with sections 6.1 and 6.2 and assume;
  - The beam dimensions shown in Figure 2 and beam straightness is ≤5 mm.
  - The beam λ is 2.0 $W \cdot m^{-1} \cdot K^{-1}$ and a 60 mm concrete screed λ is 1.15 $W \cdot m^{-1} \cdot K^{-1}$
  - A 300 mm thick perimeter wall with a U value of 0.35 $W \cdot m^{-2} \cdot K^{-1}$
  - Underfloor ventilation area is 0.0015 $m^2 \cdot m^{-1}$
  - Ground conductivity is 1.5 $W \cdot m^{-1} \cdot K^{-1}$
  - All other parameters are default values from BR 443 : 2006.

Junction psi values

6.5 Care must be taken in the overall design and construction of junctions between the floor and external, internal and party walls, to limit excessive heat loss and air infiltration.

6.6 The junction psi values given in Table 3 may be used in SAP and sBEM calculations or values can be modelled in accordance with the requirements and guidance in: BRE Report 497, BRE Information Paper IP01/06 and the provisions in the documents supporting the national Building Regulations relating to competency to perform calculations, to determine robustness of design/construction and limiting heat loss by air infiltration.

Table 3 Junction psi values

Junction	Ψ ($W \cdot m^{-1} \cdot K^{-1}$)
External wall	0.32[1]
Party wall	0.16[1]

(1) Conservative defaults from SAP Conventions Document

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 and this Certificate.

7.2 To help minimise the risk of condensation, the void space beneath the lowest point of the floor construction should be at least 150 mm high, with provision for adequate through ventilation, in the form of ventilation openings provided in two opposing external walls. The ventilation openings should be sized at not less than 1500 $mm^2 \cdot m^{-1}$ run of external wall or 500 $mm^2 \cdot m^{-2}$ of floor area, whichever is greater. Where pipes are used to carry ventilating air, these should be at least 100 mm diameter.

7.3 To minimise the risk of interstitial condensation at junctions with external walls, specifiers should ensure that wall insulation extends to at least 150 mm below the top of the EPS blocks.

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 in accordance with the relevant requirements of *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings* TSO 2002 or BRE Information Paper IP 1/06.

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 and is designed and constructed to BS 5250 : 2011. Additional guidance can be found in BRE Report 262 : 2002.

7.6 To minimise the risk of surface condensation at service penetrations care should be taken to minimise gaps in the insulation layer, for example, with expanding foam insulation.

8 Structural performance

General

8.1 The structural engineer must ensure that the concrete beams and structural topping are suitable for the intended use.

EPS blocks

8.2 The blocks provide a permanent formwork to the structural concrete topping. They make no further contribution to the long-term structural performance of the floor, once the structural concrete topping has been placed and obtained its full design strength.

8.3 Subject to compliance with the design and installation requirements of this Certificate, the EPS blocks have adequate strength to carry normal temporary loads expected during the construction phase of the floor system; including the weight of the structural concrete topping when poured.

8.4 EPS blocks must not be cut to less than 300 mm in length, to accommodate varying beam lengths and should be positioned at the floor edges. Starter and end blocks should not be more than 300 mm wide at the top (see section 14.7).

8.5 The blocks are designed to have a normal bearing of 20 mm with a 5 mm allowance for misalignment and manufacturing tolerances in the straightness of the beam. A minimum bearing width of 15 mm must therefore be ensured.

8.6 Spacers for supporting mesh reinforcement should be located along the beams or on spreader plates over the EPS blocks. This will reduce the risk of accidental penetration of the EPS during the construction phase and resulting misalignment of the reinforcement within the structural concrete topping depth.

Precast concrete beams

8.7 The EPS blocks are for use with self-bearing precast concrete beams of reinforced or prestressed normal weight concrete which provide the final strength of the floor system independently of any other constituent part of the floor system. The precast concrete beams must be designed in accordance with BS EN 1992-1-1 : 2004 (Eurocode 2). A suitably qualified and experienced individual must ensure that the beams are adequate to resist the applied loading.

Structural concrete toppings

8.8 The concrete topping thickness and reinforcement specification must be determined by an appropriately qualified and experienced individual to EN 1992-1.1 : 2004. Above EPS starter and end blocks, the topping must be designed as a cantilever (see also section 8.4) and must not exceed 300 mm.

8.9 The concrete forming the topping should be in accordance with BS 8500-1, 2: 2006 and BS EN 206-1:2000, manufactured in plants covered by the QSRMC scheme and laid by personnel having appropriate skill and experience.

8.10 Calculations to BS EN 1992-1-1 : 2004 (Eurocode 2) on floor assemblies indicate that a suitably designed 60 mm structural concrete topping reinforced with welded mesh and maximum aggregate size of 20 mm can adequately accommodate and transfer domestic design loads to the precast concrete beams.

9 Maintenance

The blocks are designed to be installed within the floor structure; therefore, they do not require maintenance.

10 Durability

The EPS blocks are protected in service from agencies liable to cause deterioration and will be effective as insulation for the life of the building which they are installed in.

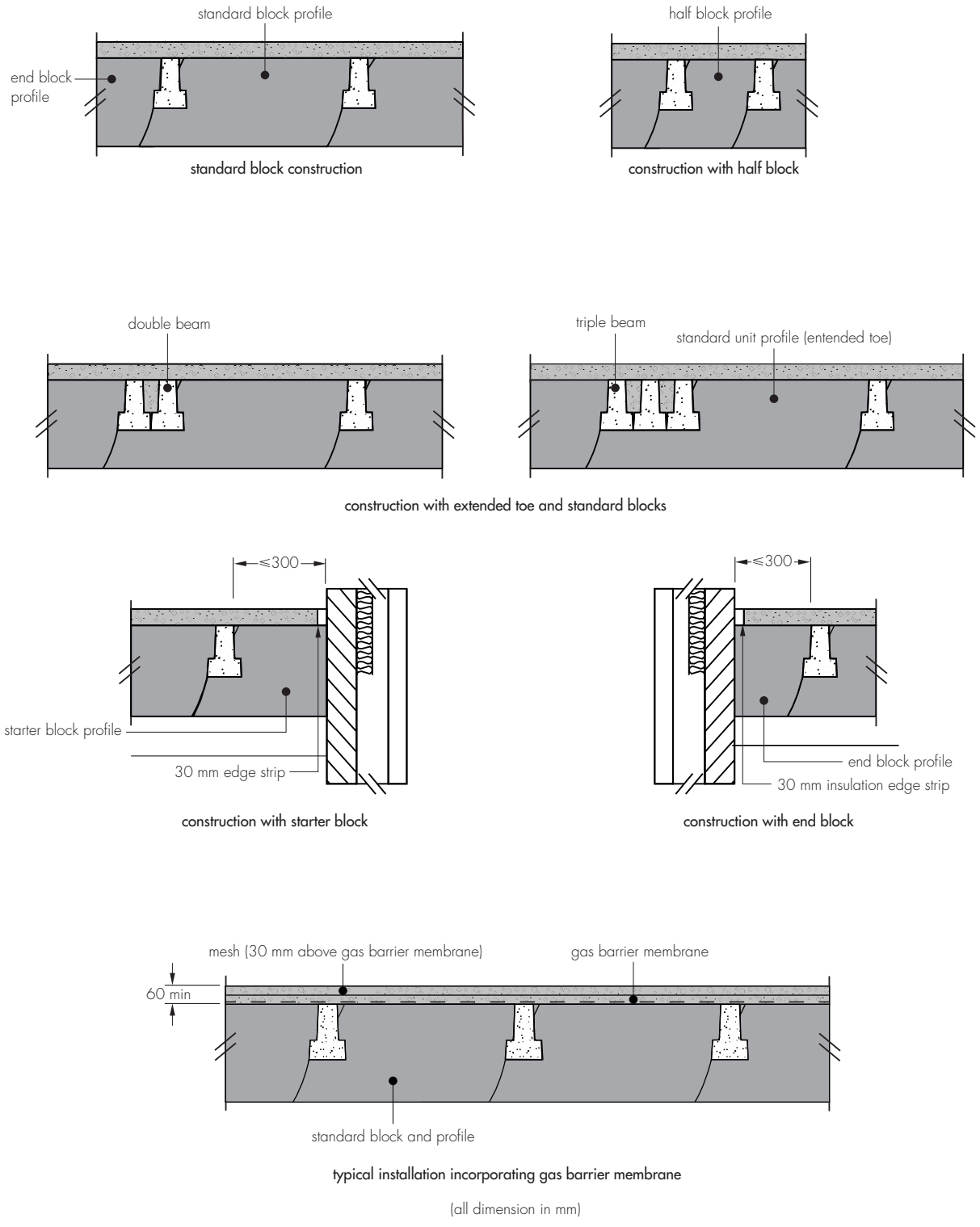
11 Re-use and recyclability

EPS material can be recycled if free from debris and contamination.

12 General

Details of typical precast concrete beams and EPS block assemblies are shown in Figure 3.

Figure 3 Example beam and EPS block assemblies



13 Site preparation

13.1 Where clay soil of medium or high-volume change potential exists, the final minimum void depth should be increased appropriately to prevent problems associated with heave (see section 4.2). With good natural drainage or where site drains are provided to prevent water collecting and standing, the ground level beneath the floor does not need to be raised to the external ground level.

13.2 The ground beneath the floor should be free of topsoil and vegetation. Oversite concrete or other surface seal is not required, but material added to bring the solum to an even surface must be hard and dry.

13.3 Damp-proofing and ventilation arrangements must be in accordance with normal good practice; for example, provision of damp-proof sleeves to ventilators and adequate drainage of the oversite.

13.4 A continuous damp-proof course should be laid along the support wall below the floor in accordance with BS 8102 : 2009.

14 Procedure

14.1 Normal precautions for handling EPS materials should be taken to avoid damaging the product during offloading, storage, handling and installation.

14.2 Starter blocks are attached to the first beam. The beam and block are then positioned tightly against the wall.

14.3 Where a block length has to be cut down, it should be located at the edge of the floor and extra care taken to avoid damage and foot traffic (see section 8.4).

14.4 The EPS blocks should be cut as appropriate to accommodate service penetrations, eg soil pipes. The resulting gaps should be filled with expanding foam or other insulation to minimise local cold bridging and air infiltration.

14.5 The beams are laid in the positions shown on the floor plan and each beam manually 'tightened' up against the EPS blocks as each run of blocks is installed.

14.6 It is essential that the correct EPS blocks are used with the beams and multiple beams to ensure the vertical gap between an EPS block toe and the adjacent EPS block does not exceed 10 mm, otherwise cold air will by-pass much of the insulation and significantly reduce the thermal performance of the floor.

14.7 End blocks can be cut on site from a full or half block. The end block must not be more than 300 mm wide at the top.

14.8 Should any other cutting be required, the advice of the Certificate holder should be sought.

14.9 If applicable, gas barrier membranes can then be installed in accordance with good practice.

14.10 Although the blocks can withstand light foot traffic (see section 8.2), care should still be taken not to walk unnecessarily over the installed EPS blocks. If a temporary working platform is required the blocks should be covered with a suitably rigid board. To avoid damage to the blocks, the structural concrete topping should be laid as soon as possible after the blocks have been installed. Any damaged blocks must be replaced before pouring the concrete.

14.11 Before pouring the structural concrete topping it must be ensured that the blocks are centrally located between the beams with a maximum gap of 5 mm between the polystyrene and the beam face. These gaps may be due to normal construction or manufacturing tolerances.

14.12 Where greater gaps occur, concrete is placed along the edges of the polystyrene units to prevent displacement during the main concreting operation.

14.13 When using a concrete pump, truck or skip, concrete should not be discharged onto the polystyrene units from heights greater than 300 mm and concrete heaps must not be formed over 150 mm high.

14.14 When wheelbarrows are used, planks must be placed to spread the wheel load to the precast concrete beams. Spot boards must be used when tipping and shovelling.

14.15 The structural concrete topping should be placed and compacted. Provision should be made for a suitable concrete finish to be achieved without standing on the blocks where this is avoidable, for example, when using a self-levelling concrete topping.

15 Investigations

15.1 An examination was made of existing data to assess:

- resistance to construction loads
- practicability of installation
- thermal conductivity (λ_D)
- dimensional accuracy
- durability
- fire risk.

15.2 Floor deck U values were derived by modelling to BS EN 10211 and BS EN 15037-4 Annex F and example floor U values calculated to BS EN ISO 13370 : 2007.

15.3 The risk of condensation was examined to BS 5250 : 2011.

15.4 The manufacturing processes for the EPS blocks was examined including the methods adopted for quality control, and details obtained of the quality and composition of the materials used.

Bibliography

BRE Report 262 : 2002 *Thermal insulation : avoiding risks.*

BRE Report 443 : 2006 *Conventions for U-value calculations.*

BRE Report 497 : 2007 *Conventions for calculating linear thermal transmittance and temperature factors*

BRE Information paper IP01/06 *Assessing the effects of thermal bridging at junctions and around openings*

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

BS 8102 : 2009 *Code of practice for protection of below ground structures against water from the ground*

BS 8110-1 : 1997 *Structural use of concrete — Code of practice for design and construction*

BS 8500-1 : 2006 *Concrete. Complementary British Standard to BS EN 206-1. Method of specifying and guidance for the specifier*

BS 8500-2 : 2006 *Concrete. Complementary British Standard to BS EN 206-1. Specification for constituent materials and concrete*

BS EN 206-1 : 2000 *Concrete. Specification, performance, production and conformity*

BS EN 1992-1-1 : 2004 *Design of concrete structures — General rules and rules for buildings*

BS EN 14889-2 : 2006 *Fibres for concrete. Polymer fibres. Definitions, specifications and conformity*

BS EN 15037-1 : 2008 *Precast concrete products. Beam-and-block floor systems. Beams*

BS EN 15037-4 : 2010 *Precast concrete products. Beam-and-block floor systems. Expanded polystyrene blocks*

BS EN ISO 10211 : 2007 *Thermal bridges in building construction — Heat flows and surface temperatures — Detailed calculations*

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*

TSO 2002 : *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings*

16 Conditions

16.1 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.

16.2 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.

16.3 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.

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

16.5 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.

16.6 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.

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