Creagh Concrete Products Ltd
Blackpark Road
Toomebridge
Co Antrim
BT41 3SE
Tel: 028 7965 0500 Fax: 028 7965 9596
e-mail: technical@creaghconcrete.com
website: www.creaghconcrete.com

BBA APPROVAL INSPECTION TESTING CERTIFICATION
TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate
13/4974
Product Sheet 1

CREAGH CONCRETE

SPANTHERM INSULATED PRECAST CONCRETE GROUND FLOOR SYSTEM

This Agrément Certificate Product Sheet(1) relates to the SpanTherm Insulated Precast Concrete Ground Floor System, comprising precast concrete and expanded polystyrene insulation composite elements for use in conjunction with a non-structural sand/cement screed, timber floor battens or other suitable applied floor finishes as a suspended ground floor in domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

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

KEY FACTORS ASSESSED

Structural Performance — ground floors incorporating the system are suitable for domestic and residential applications, subject to the maximum imposed loads (see section 6).

Thermal Performance — floors incorporating the system can contribute to meeting national Building Regulation requirement (see section 7).

Condensation Risk — floors incorporating the system can help minimise the risk of interstitial and surface condensation (see section 8).

Durability — floors incorporating the system will have a design life equivalent to that of the building in which they are incorporated (see section 11).

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

On behalf of the British Board of Agrément

Date of Second issue: 16 July 2013

Brian Chamberlain
Head of Approvals — Engineering

Claire Curtis-Thomas
Chief Executive

Certificate amended on 25 July 2013 to change Figure 2.

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

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

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA
tel: 01923 665300
fax: 01923 665301
e-mail: mail@bba.star.co.uk
website: www.bbacerts.co.uk

Regulations

In the opinion of the BBA, the SpanTherm Insulated Precast Concrete Ground Floor System, 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:	A1(1)	Loading
Comment:		Floors incorporating the system can be designed to sustain and transmit dead and imposed floor loads to the ground. See section 6 of this Certificate.
Requirement:	A2(a)	Ground movement
Comment:		Floors incorporating the system can be designed to accommodate ground movement beneath the building due to swelling and shrinkage of the subsoil. See section 9 of this Certificate.
Requirement:	C2(c)	Resistant to moisture
Comment:		Floors incorporating the system can adequately limit the risk of surface and interstitial condensation. See section 8 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Regulation 26		CO_2 emission rates for new buildings
Comment:		Floors incorporating the system can contribute to meeting this Requirement. See section 7 of this Certificate.
Regulation 7		Materials and workmanship
Comment:		The system is acceptable. See section 11 of this Certificate and the *Installation* part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The system can contribute to a construction meeting this Regulation. See section 11 and the *Installation* part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	1.1	Structure
Comment:		Floors incorporating the system can be designed to be capable of safely accommodating dead and imposed loads, with reference to clause 1.1.1[1][2]. See section 6 of this Certificate.
Standard:	3.15	Condensation
Comment:		Floors incorporating the system can adequately limit the risk of surface and interstitial condensation, with reference to clause 3.15.1[1][2], 3.15.2[1][2], 3.15.4[1][2] and 3.15.5[1][2]. See section 8 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		Floors incorporating the system can contribute to satisfying the requirements of this Standard, with reference to clauses 6.2.1[1][2] to 6.2.3[1][2]. See section 7 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The system 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 product 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 7 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 products are acceptable. See section 11 and the *Installation* part of this Certificate.
Regulation:	29	Condensation
Comment:		Floors incorporating the products can adequately limit the risk of interstitial condensation. See section 8 of this Certificate.
Regulation:	30	Stability
Comment:		Floors incorporating the products can be designed to sustain and transmit dead and imposed floor loads to the ground. See section 6 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rates
Comment:		Floors incorporating the products can satisfy the requirements of this Regulation. See section 7 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 sections: 3 *Delivery and site handling* (3.2 to 3.4) of this Certificate.

Additional Information

NHBC Standards 2013

NHBC accepts the use of SpanTherm Insulated Precast Concrete Ground Floor System, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 5.2 *Suspended ground floors*.

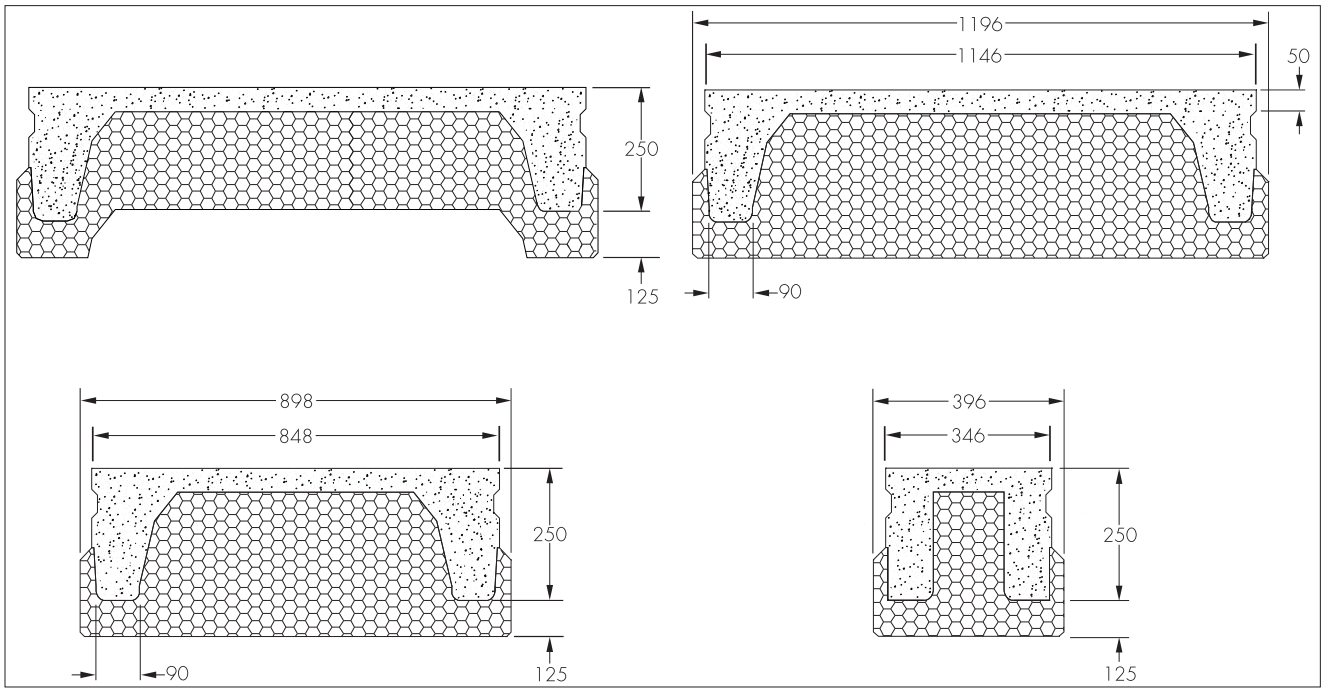
Technical Specification

1 Description

1.1 The SpanTherm Insulated Precast Concrete Ground Floor System (see Figure 1) is a pre-insulated ground floor system comprising ribbed floor elements of precast reinforced concrete and expanded polystyrene (EPS) insulation. There are three element types; SpanTherm Standard, SpanTherm Advance and SpanTherm Plus (depending on the overall depth of insulation and grade of polystyrene used). Dimensions of the elements are:

Length (mm)	<7500
Standard width (mm) (nominal)	1200
Alternative widths (mm) (nominal)	900, 400
Structural depth of ribs (mm)	250
Minimum rib breadth dimension (mm)	90
Clear width between ribs (mm)	796, 496
Top slab depth (mm)	50
Height of support bearings along length (mm)	125

Figure 1 SpanThem elements



1.2 The specification for each of the components of the system are:

Expanded polystyrene — moulded to rigid board, Class F grade available in two types, white (EPS 70 and graphite (EPS 100) in accordance with BS EN 13163 : 2008. The associated thermal conductivities ($\lambda_{90/90}$ *value*) are given in section 7.3.

Concrete — minimum strength grade C40 Designated Mix (C40/50 compressive strength class to BS EN 206-1 : 2000).

Steel reinforcement — supplied by CARES to BS 4449 : 2005.

Joint filling — concrete or sand-cement mortar with a strength class C25/30[1] and maximum aggregate size 10 mm[2].

(1) Cement complies with BS EN 197-1 : 2011.

(2) Gravel and sand comply with BS EN 12620 : 2002 + A1 : 2008 and BS 882 : 1992.

1.3 Ancillary items that can form part of the overall floor construction but are outside the scope of this Certificate, include:

- concrete floor screed — typically between 25 mm and 100 mm thick
- timber battens — to receive floor finishes
- other suitable non-structural applied floor finishes
- damp-proof courses, damp-proof membranes and gas membranes.

2 Manufacture

2.1 The concrete component of the elements are manufactured in accordance with the requirements of BS EN 13224 : 2011.

2.2 The moulded EPS component is manufactured in accordance with BS EN 13163 : 2008.

2.3 To check product quality is consistently maintained to the required specification, the BBA has:

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

2.4 The management system of Creagh Concrete Products Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 and/or BS EN ISO 14001 : 2004 by BM Trada Certification (Registration number 3312).

3 Delivery and site handling

3.1 When the system is delivered to site, each floor element is marked with the Certificate holder's product reference and if requested, the customer's own reference code.

3.2 The units should be handled with care during off loading, storage and installation.

3.3 The floor elements should be stacked on a flat base and protected against direct sunlight and high winds.

3.4 The expanded polystyrene component must not be exposed to flame or ignition. Careful consideration should also be given to the management of fire risk when in storage. Contact with solvents and organic based materials should also be avoided.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the SpanTherm Insulated Precast Concrete Ground Floor System.

Design Considerations

4 General

SpanTherm Insulated Precast Concrete Floor System, when used in conjunction with concrete screeds, timber floor battens or other suitable applied floor finishes as specified in this Certificate (see section 1.3) is effective for use in forming insulated suspended ground floors in domestic buildings.

5 Practicability of installation

This system is designed to be installed by contractors/builders experienced with this type of flooring system.

6 Structural performance

6.1 The Certificate holder undertakes structural calculations for the structural adequacy of the system. Individual designs are verified by calculation in accordance with BS EN 1992-1-1 : 2004 and UK National Annex or BS EN 13224 : 2011, when the floor panels are treated as 'minor floor elements' (see annex B of BS EN 13224 : 2011). All calculations should take account of the floor loading requirements set out in BS EN 1990 : 2002 and load category A limitations set out in BS EN 1991-1-1 : 2002 and NA to BS EN 1991-1-1 : 2002.

Floor loading

6.2 Concrete Floor elements, to the Certificate holder's design and specification, are suitable for use in domestic and residential applications subject to the following maximum imposed loadings:

General loading in accordance with BS EN 1991-1-1 : 2002

Domestic and residential properties

- Uniformly distributed load of 1.5 $kN \cdot m^{-2}$, together with an allowance of 1 $kN \cdot m^{-2}$ for lightweight partitions
- Line loads of 6 $kN \cdot m^{-1}$ from load bearing walls, both perpendicular and parallel to the span
- Point load of 1.4 kN.

Communal areas in residential properties

- Uniformly distributed load of 5 kN·m^{-2}, together with an allowance of 1 kN·m^{-2} for lightweight partitions
- Line loads of 6 kN·m^{-1} from load bearing walls, both perpendicular and parallel to the span
- Point load of 4.5 kN.

6.3 Typical maximum clear span dimensions based on a domestic live load of 1.5 kN·m^{-2} are given in Table 1. Comprehensive load span tables are available from the Certificate holder for a range of typical reinforcement configurations in accordance with BS EN 1991-1-1 and BS EN 1992-1-1. The Certificate holder can be contacted for further details regarding this.

Table 1 Typical floor spans

Floor finish	Maximum Clear Span between supports (mm)		
	No Partitions	Stud Partitions (1 kN·m^{-2})	Blockwork Partitions (6 kN·m^{-1})
100 mm Concrete Screed	6150	5850	5000
75 mm Concrete Screed	6400	6050	5100
50 mm Concrete Screed	6650	6250	5200
25 mm Self Levelling Screed	6850	6500	5300
5 mm Self Levelling Compound	6400	6050	5250
Timber Battens	7000	6650	5400

Note: based on unfactored domestic live load of 1.5 kN·m^{-2} and self-weight of finishes.

Minimum bearing lengths

6.4 When considering the floor units as minor floor elements the minimum bearing lengths shown in Table 2 are required.

Table 2 Minimum bearing lengths

Support	Minimum bearing length (mm)
Masonry	100
Concrete	80
Steel	70

Note: Designer to ensure that minimum strength supports are provided for applied loading.

7 Thermal performance

7.1 The overall floor U value will depend significantly on the:

- ratio of floor perimeter length to floor area
- element U value
- amount of under-floor ventilation, and
- ground thermal conductivity.

7.2 Each floor U value should be calculated to BS EN ISO 13370 : 2007 and BRE 443 : 2006.

7.3 Example calculations in Table 3 indicate that the SpanTherm precast insulated floor elements can enable a floor to meet, or improve on, the design floor U values of 0.15 to 0.25 W·m^{-2}·K^{-1} specified in documents supporting the national Building Regulations.

Table 3 Example U values

p/a ratio	Floor Element U values		
	SpanTherm Standard	SpanTherm Advance	SpanTherm Plus
0.2	0.15	0.12	0.10
0.3	0.16	0.13	0.11
0.4	0.17	0.13	0.11
0.5	0.18	0.14	0.12
0.6	0.18	0.14	0.12
0.7	0.19	0.14	0.12
0.8	0.19	0.14	0.12
0.9	0.19	0.14	0.12
1.0	0.19	0.14	0.12

Notes:

- Overall floor U values, will depend upon floor elements U values in Table 4 and on floor area and perimeter. Therefore floor U values should be calculated for each case in accordance with section 7.3
- thermal conductivity ($\lambda_{90/90}$) of 0.038 $W \cdot m^{-1} \cdot K^{-1}$ for SpanTherm Standard and SpanTherm Advance
- thermal conductivity ($\lambda_{90/90}$) of 0.031 $W \cdot m^{-1} \cdot K^{-1}$ for SpanTherm Plus
- The calculations assume:

  1200 mm wide panel only
  Ventilation area of 0.0015 $m^2 \cdot m^{-1}$
  300 mm thick perimeter wall with a U value of 0.35 $W \cdot m^{-2} \cdot K^{-1}$
  Ground conductivity of 1.5 $W \cdot m^{-1} \cdot K^{-1}$.

7.4 The floor U values may be taken as an area weighted average of the repeating floor element section U values in Table 4.

Table 4 Floor U values ($W \cdot m^{-2} \cdot K^{-1}$)

	Element Type		
	SpanTherm Standard	SpanTherm Advance	SpanTherm Plus
Floor element U Values	0.226	0.163	0.135

Note: The structural concrete has a thermal conductivity of 2.2 $W \cdot m^{-1} \cdot K^{-1}$.

Junction psi values

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

7.6 The junction psi values are given in Table 5 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, determine robustness of design/construction and limiting heat loss by air infiltration.

Table 5 Junction psi values

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

(1) Conservative defaults from SAP Conventions Document.

8 Condensation risk

Interstitial condensation

8.1 Floors constructed from the system will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2011 and this Certificate.

8.2 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.

8.3 To minimise the risk of interstitial condensation at junctions with external wall, specifiers should ensure that wall insulation extends to at least 150 mm below the bottom of the concrete nib.

Surface condensation

8.4 Floors constructed from the system 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.

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

8.6 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.

9 Void depth

The void depth beneath the ground floor required for each project will vary according to site conditions and should be carefully considered and specified as part of the design of the floor construction, so as not to exceed 1 metre.

10 Maintenance

As the system is an integral part of the floor construction, therefore, maintenance is not necessary.

11 Durability

Suspended ground floors incorporating the SpanTherm Insulated Precast Concrete Ground Floor System will have adequate durability for the design life of the building, when designed and installed in accordance with the requirements of this Certificate.

12 Re-use and recyclability

The precast concrete and expanded polystyrene components of the system can be fully recycled.

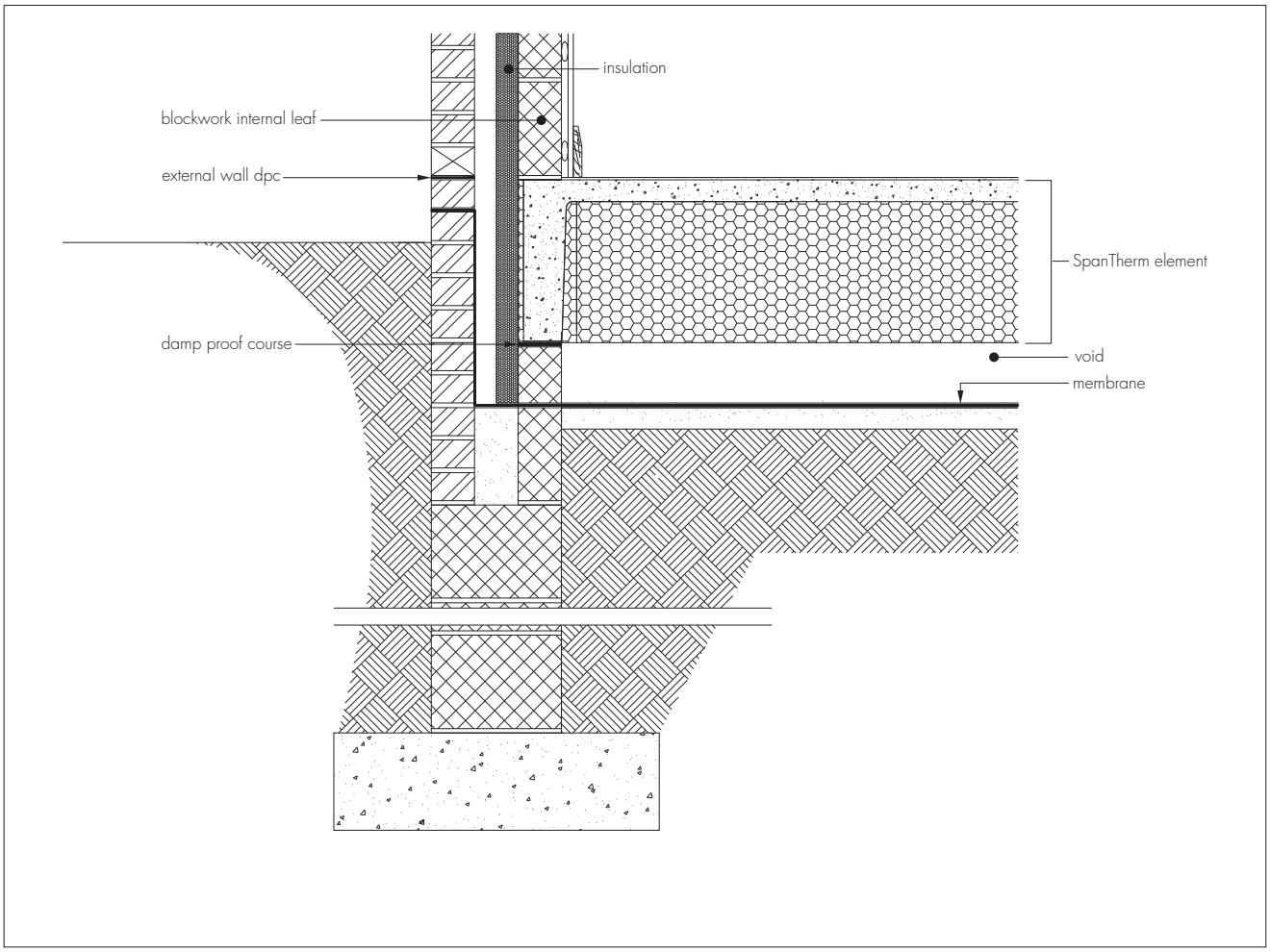
Installation

13 General

13.1 To facilitate installation and provide sufficient sub-floor ventilation for the SpanTherm Insulated Precast Concrete Floor System, a void of sufficient depth must be provided beneath the floor construction (see section 8.2).

13.2 Typical installation details used in the design of floors incorporating the system are shown in Figure 2.

Figure 2 Typical installation



13.3 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.

13.4 Provision should be included for ventilation of the sub-floor space and to resist moisture ingress and should be in accordance with normal good practice, for example, provision of ventilators and adequate drainage of the sub-floor.

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

13.6 Normal precautions for handling expanded polystyrene materials should be taken to avoid damaging the system elements during off-loading, storage, handling and installation. Any damaged parts of the system elements must be either repaired or replaced before installation.

14 Procedure

14.1 The installers should confirm that the system supplied to site agree with the details shown on the engineer's drawings for the project.

14.2 The system elements are brought in place by a lorry-mounted high reach crane or other suitable crane, using four chain lifting connectors or lifting clamp which is then directed by operatives until in place.

14.3 With the first system element being accurately positioned, the subsequent elements are then positioned.

14.4 The system elements must be fitted tightly and care must be shown in placing the service access points in correct position.

14.5 The joints between the floor elements must be completely filled in using concrete or sand/cement mortar with the strength class C25/30 as grouting in the spaces.

14.6 If required, a damp-proof, radon or methane resistant membrane can be installed over the whole ground area beneath the floor in accordance with the membrane manufacturer's instructions (see Figure 2).

14.7 A concrete screed or other suitable finish is applied, to the design specification (see section 1.3). When using a concrete pump, truck or skip, concrete should not be discharged onto the system from heights greater than 300 mm and concrete heaps must not be formed over 150 mm.

Technical Investigations

15 Structural calculations

15.1 An examination was made of existing data:

- Structural calculations
- Thermal properties
- Durability.

15.2 A site visit was carried out to assess the practicability of installation of the system.

15.3 The manufacturing process for the production of the system was assessed including methods adopted for quality control, and details obtained of the quality and composition of the materials used.

Bibliography

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

BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings*

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

BS 882 : 1992 *Aggregates from natural sources for concrete*

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

BS EN 197-1 : 2011 *Cement — Composition British Standards to BS EN 206-1 — Method of specifying and guidance for specifier*

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

BS EN 1990 : 2002 *Basis of Structural Design*

BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*

BS EN 12620 : 2002 *Aggregates for concrete*

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*

EN 13224 : 2011 *Precast concrete elements — Ribbed floor elements*

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

BS EN 13163 : 2008 *Thermal insulation products for buildings — Factory made products of expanded polystyrene (EPS) —Specification*

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

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

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

BS EN ISO 13788 : 2002 *Hygrothermal performance of building components and building elements — Internal surface temperature to avoid critical surface humidity and interstitial condensation — Calculation methods*

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.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
fax: 01923 665301
e-mail: mail@bba.star.co.uk
website: www.bbacerts.co.uk