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Agreement Certificate

08/4613

Product Sheet 2

XTRATHERM THIN-R INSULATION

XTRATHERM THIN-R UNDERFLOOR INSULATION BOARDS (XT/HYF AND XT/UF)

This Agrément Certificate Product Sheet⁽¹⁾ relates to Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF), comprising polyisocyanurate modified polyurethane foam boards with a composite foil-facing on both sides, for use on ground-supported or suspended concrete ground floors, or between the joists of suspended timber ground floors, in new and existing domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

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



KEY FACTORS ASSESSED

Thermal performance — the products have a declared thermal conductivity (λ_D) of $0.022 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ (see section 6).

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

Floor loading — the products, when installed in accordance with this Certificate, can support a design loading for domestic applications (see section 9).

Durability — the products are dimensionally stable and, when installed with the overlays specified, will remain effective as an insulating material for the life of the building in which they are incorporated (see section 11).

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 it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 9 May 2017

John Albon – Head of Approvals
Construction Products

Originally certificated on 5 August 2011

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, Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF), if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



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

Requirement:	A1	Loading
Comment:		The products can contribute to satisfying this Requirement. See section 9.1 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The products can contribute to satisfying this Requirement. See sections 7.1 and 7.4 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The products can contribute to satisfying this Requirement. See sections 6.1 and 6.2 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	26	CO₂ emission rates for new buildings
Regulation:	26A	Fabric energy efficiency rates for new dwellings (applicable to England only)
Regulation:	26A	Primary energy consumption rates for new buildings (applicable to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (applicable to Wales only)
Comment:		The products can contribute to satisfying these Regulations; however, compensating fabric/services measures may be required. See section 6 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(b)	Structure
Comment:		The products have adequate strength and stiffness, with reference to clause 1.1.1 ⁽¹⁾ . See section 9.1 of this Certificate.
Standard:	3.15	Condensation
Comment:		The products can contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.4 ⁽¹⁾ and 3.15.5 ⁽¹⁾ . See sections 7.1 and 7.5 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The products can contribute to satisfying this Standard, with reference to clauses, or parts of, 6.1.1 ⁽¹⁾ , 6.1.6 ⁽¹⁾ , 6.2.1 ⁽¹⁾ , 6.2.3 ⁽¹⁾ , 6.2.4 ⁽¹⁾ , 6.2.5 ⁽¹⁾ , 6.2.6 ⁽¹⁾ , 6.2.7 ⁽¹⁾ , 6.2.9 ⁽¹⁾ , 6.2.10 ⁽¹⁾ , 6.2.11 ⁽¹⁾ and 6.2.13 ⁽¹⁾ . See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The products can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the products can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with

reference to clauses 7.1.4⁽¹⁾ [Aspects 1⁽¹⁾ and 2⁽¹⁾], 7.1.6⁽¹⁾ [Aspects 1⁽¹⁾ and 2⁽¹⁾] and 7.1.7⁽¹⁾ [Aspect 1⁽¹⁾]. See section 6 of this Certificate.

Regulation: 12 **Building standards applicable to conversions**
Comment: Comments made in relation to the products under Regulation 9, Standards 1 to 6 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) 2012 (as amended)

Regulation: 23 **Fitness of materials and workmanship**
Comment: The products are acceptable. See section 11 and the *Installation* part of this Certificate.

Regulation: 29 **Condensation**
Comment: The products can contribute to satisfying this Regulation. See section 7.1 of this Certificate.

Regulation: 30 **Stability**
Comment: The products can contribute to satisfying this Regulation. See section 9.1 of this Certificate.

Regulation: 39(a)(i) **Conservation measures**
Comment: The products can contribute to satisfying this Regulation. See section 9.1 of this Certificate.

Regulation: 40(2) **Target carbon dioxide emissions rate**
Comment: The products can contribute to satisfying these Regulations. See section 6 of this Certificate.

Construction (Design and Management) Regulations 2015

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

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

See section: 3 *Delivery and site handling* (3.3) of this Certificate.

Additional Information

NHBC Standards 2017

NHBC accepts the use of Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF), when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 5.1 *Substructure and ground bearing floors*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 13165 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF) comprise rigid polyisocyanurate modified polyurethane foam, with a composite foil-facing on both sides.

1.2 The products have the nominal characteristics shown in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	XT/HYF	XT/UF
Length (mm)	2400	2400
Width (mm)	1200	1200
Thickness (mm)	75, 100, 125 and 140	25 to 165 (in 5 mm increments)
Minimum compressive strength at 10% compression (kPa)	140	140
Edge profile	tongue-and-groove on the long edge only	square

1.3 Ancillary items used with the products, but outside the scope of this Certificate, are:

- saddle clips
- galvanized nails
- pre-treated battens
- acrylic adhesive foil tape
- damp-proof membrane (dpm)
- vapour control layer (vcl).

2 Manufacture

2.1 Raw materials are injected onto the lower foil-facer on a conveyor belt. The exothermic reaction expands the foam, which then comes into contact with the upper foil-facer. An automated process cures and cuts the product to the required size.

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

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

2.3 The management system of Xtratherm UK Limited has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 and BS EN ISO 14001 : 2004 by BRE Certificate Ltd (Certificates 718 and EMS 718 respectively).

3 Delivery and site handling

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

3.2 The products must be protected from prolonged exposure to sunlight, and should be stored dry, flat and raised above ground level (to avoid contact with ground moisture). Where possible, packs should be stored inside. If stored outside, they should be under cover, or protected with opaque polythene sheeting.

3.3 The products must not be exposed to naked flame or other ignition sources, or to solvents or other chemicals.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF).

4 Use

4.1 Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF) are satisfactory for use as floor insulation and are effective in reducing the thermal transmittance (U value) of suitably designed ground-supported or suspended concrete ground floors, or between the joists of suspended timber ground floors (XT/UF only), in new and existing domestic buildings.

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

4.3 Ground-supported concrete and suspended ground floors incorporating the products must include a suitable damp-proof course (dpc) laid in accordance with the relevant clauses of CP 102 : 1973, BS 8102: 2009 and BS 8215 : 1991. Suspended concrete ground floors incorporating the products must include suitable ventilation of the sub-floor as appropriate.

4.4 The overlay to the products should be:

- a vcl (see section 7.3), and
- a cement-based floor screed of minimum 65 mm thickness, laid in accordance with the relevant clauses of BS 8204-1 : 2003 and/or BS 8204-2 : 2003, or
- a wood-based floor, eg tongue-and-groove plywood to BS EN 636 : 2015, flooring grade particle board (Types P5 to P7) to BS EN 312 : 2010, or oriented strand board (OSB) of type OSB/3 or OSB/4 to BS EN 300 : 2006, of a thickness to be determined by a suitably qualified and experienced individual, installed in accordance with DD CEN/TS 12872 : 2007 and BS EN 12871 : 2013, or
- a concrete slab to BS EN 1992-1-1 : 2004.

5 Practicability of installation

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

6 Thermal performance



6.1 Calculations of the thermal transmittance (U value) of a floor should be carried out in accordance with BS EN ISO 6946 : 2007, BS EN ISO 13370 : 2007 and BRE Report BR 443 : 2006 using the declared thermal conductivity (λ_D) value of $0.022 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$.

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

Table 2 Example ground floor U values⁽¹⁾

Floor type	Perimeter/area ratio	Insulation thickness (mm)		
		50	75	100
Slab on ground support ⁽²⁾	0.2	0.18	0.15	0.13
	0.4	0.24	0.19	0.15
	0.6	—	0.21	0.17
	0.8	—	0.22	0.17
	1.0	—	0.23	0.18
Suspended timber floor ⁽²⁾⁽³⁾⁽⁴⁾	0.2	0.23	0.20	0.17
	0.4	—	0.24	0.20
	0.6	—	—	0.22
	0.8	—	—	0.22
	1.0	—	—	0.23
Suspended beam-and-block floor ⁽²⁾⁽³⁾⁽⁴⁾	0.2	0.19	0.16	0.13
	0.4	0.24	0.19	0.15
	0.6	—	0.20	0.16
	0.8	—	0.21	0.17
	1.0	—	0.21	0.17

(1) Edge insulation not included.

(2) Wall thickness (w) 0.3 m.

(3) Supporting wall (U_w) $1.5 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$.

(4) Ventilation area (ϵ) $0.0015 \text{ m}^2\cdot\text{m}^{-1}$.

Junctions



6.3 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations.

7 Condensation

Interstitial condensation



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

7.2 The insulation core vapour resistivity may be taken as approximately $300 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}\cdot\text{m}^{-1}$, with a resistance value of $7000 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}$ taken for each foil facing.

7.3 When the products are used above the dpm on a ground-supported floor, or on a suspended concrete floor, a vcl is installed on the warm side of the insulation to inhibit the risk of interstitial condensation.

Surface condensation



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



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

8 Behaviour in relation to fire

8.1 The products have a reaction to fire classification* of F to BS EN 13501-1 : 2007.

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

9 Floor loading



9.1 The products are suitable for the domestic occupancies defined in this Certificate when covered with a suitable floor overlay (see section 4.3) and are capable of resisting a uniformly distributed load of $1.5 \text{ kN}\cdot\text{m}^{-2}$ or a concentrated load of 2 kN for category A1 and A2 (domestic) situations as defined in BS EN 1991-1-1 : 2002, National Annex NA.2.

9.2 The performance of the floor construction will depend on the insulation properties and type of floor covering used (including thickness and strength). Where the products are used under a concrete slab, resistance to concentrated and distributed loads is a function of the slab specification. Further guidance on the suitability of floor coverings can be found in BS EN 13810-1 : 2002, DD CEN/TS 13810-2 : 2003, BS 8204-1 : 2003 and BS EN 312 : 2010, and from the flooring manufacturer.

10 Maintenance

As the products are confined within the floor and have suitable durability (see section 11), maintenance is not required.

11 Durability



The products are rot proof and 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.

Installation

12 General

12.1 Installation of Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF) must be in accordance with the Certificate holder's instructions and the requirements of this Certificate.

12.2 Typical methods are shown in Figures 1 to 6 (reference should also be made to BRE Report BR 262 : 2002).

Figure 1 Ground-supported concrete floor — screed overlay

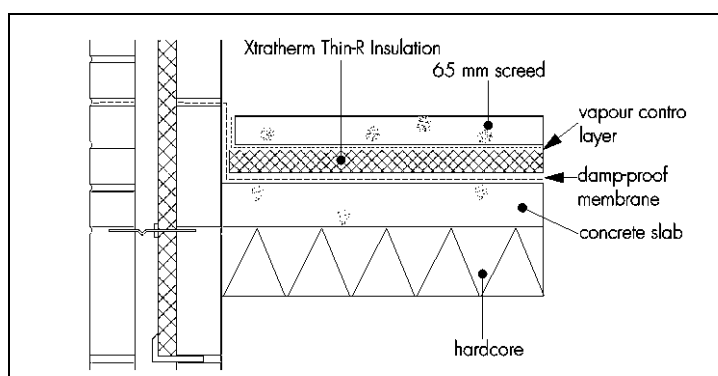


Figure 2 Suspended concrete floor — screed overlay

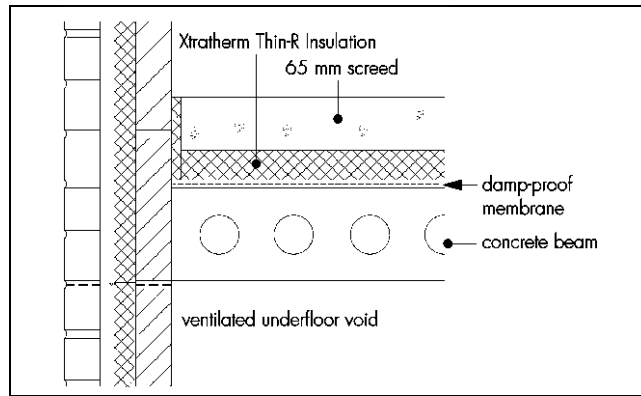


Figure 3 Concrete slab overlay

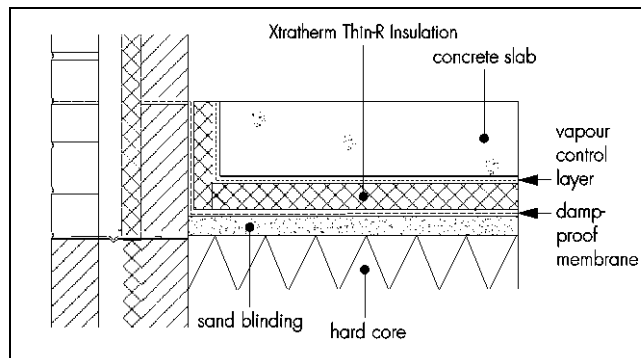


Figure 4 Ground-supported concrete floor — board overlay

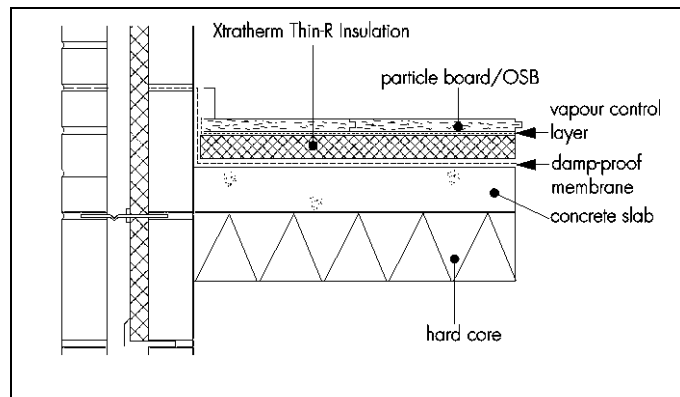


Figure 5 Suspended concrete floor — board overlay

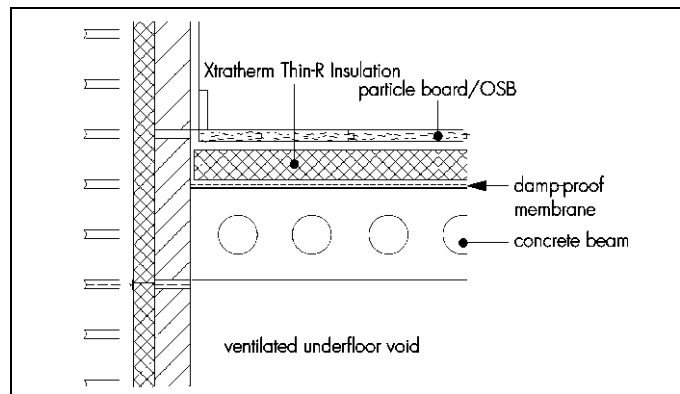
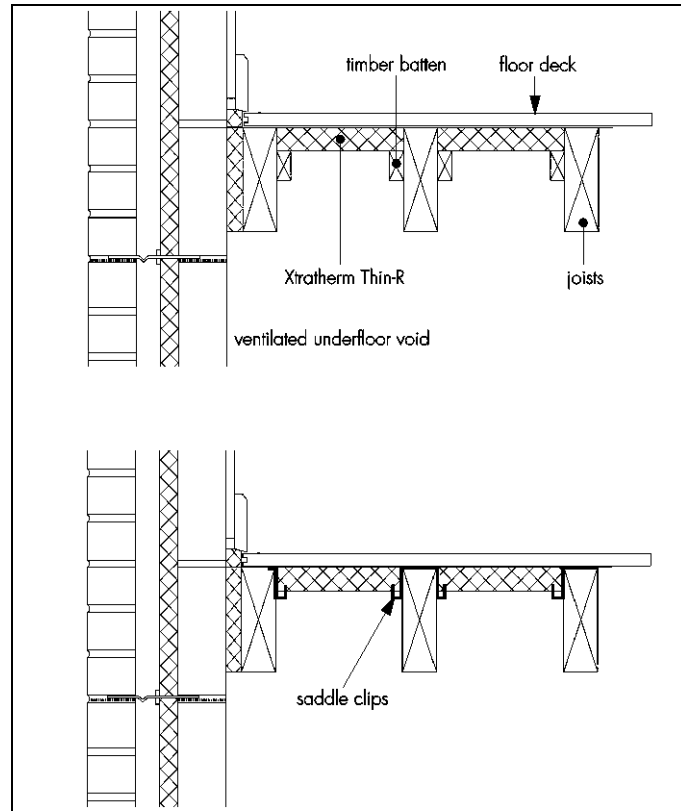


Figure 6 Suspended timber floors



12.3 All concrete floor surfaces should be smooth, level and flat to within 5 mm when measured with a 2 metre straight-edge. Irregularities greater than this must be removed. 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 products are laid should be left for as long as possible to maximise drying out and the dissipation of construction moisture, in accordance with BS 8203 : 2001, Section 3.1.2.

12.5 Where the products are used over ground-supported concrete floor slabs, a suitable dpm must be installed in accordance with CP 102 : 1973, to resist moisture from the ground. If a liquid-type dpm is applied to the slabs, it should be a type compatible with the products and be allowed to dry fully prior to installing the insulation.

12.6 Ground floors with a hard-core base must be compacted and blinded with a thin layer of sand before laying the dpm, boards and concrete slab.

12.7 The products can be used on beam-and-block suspended concrete floors that are the subject of a current Agrément Certificate. They should be installed in accordance with, and within the limitations imposed by, that Certificate or on floors 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 products, vertical upstands of the products 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 $0.75 \text{ m}^2 \cdot \text{K} \cdot \text{W}^{-1}$. Alternatively, a suitable cavity wall insulation material can be extended below the dpc level to provide edge insulation to the floor.

12.9 In suspended timber floors, the products are installed tightly between the floor joists.

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

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

13 Procedure

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

13.2 The laying pattern should ensure that all cut edges are at the perimeter of the floor or some other feature, eg mat wells, thresholds or access ducts. Spreader boards should be used to protect the products.

Timber-based board overlay

13.3 Before laying the timber overlay, pre-treated timber battens, in accordance with BS 8417 : 2011, are positioned at doorways and access panels and to support partitions. Adequate time should be allowed for solvents from solvent-based preservatives to evaporate.

13.4 When the dpc is laid below the slab, a polythene vcl of minimum thickness 250 µm is laid between the products and the overlay boards. The polythene sheet must have 150 mm overlaps which are taped at the joints, and should be turned up 100 mm at the walls.

13.5 Timber-based overlay boards are laid with staggered cross-joints, in accordance with DD CEN/TS 12872 : 2007 and BS EN 12871 : 2013.

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

13.7 Where there are long, uninterrupted lengths of floor, eg corridors, proprietary expansion joints should be installed at intervals of 2 mm 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, a 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 in rooms such as kitchens, bathrooms, and 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 the floor joints taped. A suitable polythene vcl, minimum 125 µm thick, is laid over the products with 150 mm laps. A compacted screed is then poured over to a depth of 65 mm for a domestic dwelling and 75 mm for others. The relevant clauses of BS 8204-1 : 2003 should be followed.

Concrete slab overlay (ground-bearing only)

13.13 Perimeter edge pieces are cut and placed around the edges and taped at the joints. A suitable polythene vcl, minimum 125 µm thick, is laid over the products 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.

Suspended timber floors

13.14 Saddle clips are placed at intervals not exceeding 1 m along the timber floor joists. Where the products are to be installed on only one side of a joist, twin clips can be cut into single clips and nailed into place with galvanized nails.

13.15 If saddle clips are not used, the products may be retained using preservative-treated timber battens. The battens should be wide enough to retain the products in place and secured with corrosion-protected nails at a depth that will accommodate the thickness of the products.

13.16 The products should be cut to fit tightly between joists and pushed down onto the spikes of the saddle clips, or onto the beads. Small gaps should be insulated with cut strips of the products.

14 Incorporation of services

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

14.2 Where possible, electrical conduits, gas and water pipes or other services should be contained within ducts or channels within the concrete slab of ground-supported floors. 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.

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

14.4 Where the product is installed on a floor of a suspended beam-and-block design, all services must be installed so as not to impair the floor performance.

14.5 On overlay board 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 CEN/TS 12872 : 2007 without intermediate support. Services should be suitably fixed to the floor base and not to the insulation boards.

Technical Investigations

15 Tests

Tests were carried out on Xtratherm Thin-R Underfloor Insulation Boards (XT/HYF and XT/UF) to determine:

- flatness after one side wetting
- water absorption by total immersion
- dimensional stability
- compressive strength
- thermal conductivity
- compressive creep.

16 Investigations

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

16.2 An assessment was made of the results of test data to BS EN 13165 : 2012 in relation to:

- dimensions
- squareness
- density
- λ value.

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

16.4 An assessment was made of typical constructions which achieve the design U values.

Bibliography

- BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*
- BS 8000-9 : 2003 *Workmanship on building sites — Cementitious levelling screeds and wearing screeds — Code of practice*
- BS 8102 : 2009 *Code of practice for protection of below ground structures against water from the ground*
- BS 8203 : 2001 + A1 : 2009 *Code of practice for installation of resilient floor coverings*
- BS 8204-1 : 2003 + A1 : 2009 *Screeds, bases and in situ floorings — Concrete bases and cementitious levelling screeds to receive floorings — Code of practice*
- BS 8204-2 : 2003 + A2 : 2011 *Screeds, bases and in situ floorings — Concrete wearing surfaces — Code of practice*
- BS 8215 : 1991 *Code of practice for design and installation of damp-proof courses in masonry construction*
- BS 8417 : 2011 + A1 : 2014 *Preservation of wood — Code of practice*
- BS EN 300 : 2006 *Oriented strand boards (OSB) — Definitions, classification and specifications*
- BS EN 312 : 2010 *Particleboards — Specifications*
- BS EN 636 : 2012 + A1 : 2015 *Plywood — Specifications*
- BS EN 1991-1-1 : 2002 *Eurocode 1 – Actions on structures — General actions*
- BS EN 1992-1-1 : 2004 + A1 : 2014 *Eurocode 2 : Design of concrete structures — General rules and rules for buildings*
- BS EN 12871 : 2013 *Wood-based panels — Determination of performance characteristics for load bearing panels for use in floors, roofs and walls*
- BS EN 13165 : 2012 + A2 : 2016 *Thermal insulation products for buildings — Factory made rigid polyurethane foam (PU) products — Specification*
- BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
- BS EN 13810-1 : 2002 *Wood-based panels — Floating floors — Performance specifications and requirements*
- BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance. Calculation method*
- BS EN ISO 9001 : 2008 *Quality management systems — Requirements*
- BS EN ISO 13370 : 2007 *Thermal performance of buildings — Heat transfer via the ground — Calculation methods*
- BS EN ISO 14001 : 2004 *Environmental management systems — Requirements with guidance for use*
- BRE Report (BR 262 : 2002) *Thermal insulation: avoiding risks*
- BRE Report (BR 443 : 2006) *Conventions for U-value calculations*
- CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*
- DD CEN/TS 12872 : 2007 *Wood-based panels — Guidance on the use of load-bearing boards in floors, walls and roofs*
- DD CEN/TS 13810-2 : 2003 *Wood-based panels — Floating floors — Test methods*

17 Conditions

17.1 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 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.

