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Agrément Certificate  
**10/4803**  
Product Sheet 3

## XTRATHERM SAFE-R INSULATION

### XTRATHERM SAFE-R UNDERFLOOR INSULATION

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Xtratherm Safe-R Underfloor Insulation, comprising rigid phenolic board 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 or similar buildings.

#### AGRÉMENT CERTIFICATION INCLUDES:

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

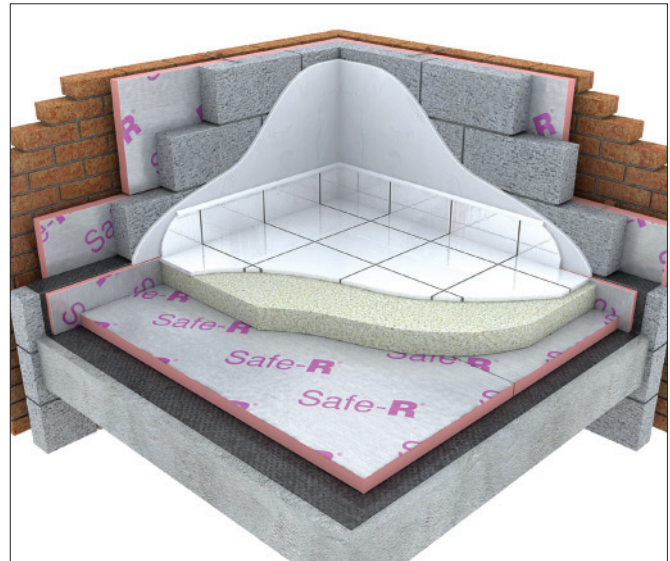
#### KEY FACTORS ASSESSED

**Thermal performance** — the product thermal conductivity ( $\lambda_{90/90}$  value) ranges from  $0.021 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$  to  $0.023 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$  depending on thickness and calculations for 'typical' floor constructions indicate U values between  $0.11 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  and  $0.25 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  (see section 5).

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

**Floor loading** — the product when covered with a suitable floor covering is capable of resisting a uniformly distributed load of  $<4 \text{ kN}\cdot\text{m}^{-2}$  and a concentrated load of  $<1.5 \text{ kN}$  without undue compression deflection. The compressive strength of the product at 10% compression exceeds 150 kPa (see section 8).

**Durability** — the product, when installed with the overlays specified, will remain effective as an insulating material for the life of the building in which it is incorporated (see section 10).



The BBA has awarded this Agrément 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

Simon Wroe  
Head of Approvals — Physics

Greg Cooper  
Chief Executive

Date of First issue: 14 December 2010

*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](http://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 Safe-R Underfloor Insulation, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



## The Building Regulations 2010 (England and Wales)

Requirement:	A1	Loading
Comment:		The product has adequate strength and stiffness. See section 8.1 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The product can adequately limit the risk of surface condensation. See sections 6.1 and 6.4 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The product can contribute to meeting this Requirement. See sections 5.1 and 5.2 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.



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

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The product can contribute to a construction satisfying this Regulation. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	1.1(a)(b)	Structure
Comment:		The product has adequate strength and stiffness, with reference to clause 1.1.1 <sup>(1)(2)</sup> . See section 8.1 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can adequately limit the risk of surface condensation, with reference to clauses 3.15.1 <sup>(1)(2)</sup> , 3.15.4 <sup>(1)(2)</sup> and 3.15.5 <sup>(1)(2)</sup> . See sections 6.1 and 6.5 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying clauses, or parts of, 6.1.6 <sup>(1)</sup> , 6.2.1 <sup>(1)(2)</sup> , 6.2.3 <sup>(1)</sup> , 6.2.4 <sup>(2)</sup> , 6.2.5 <sup>(2)</sup> , 6.2.6 <sup>(1)</sup> , 6.2.7 <sup>(1)</sup> to 6.2.11 <sup>(1)(2)</sup> , 6.2.12 <sup>(2)</sup> and 6.2.13 <sup>(1)(2)</sup> of these Standards. See sections 5.1 and 5.2 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for this product under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)</sup> and Schedule 6 <sup>(1)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	C5	Condensation
Comment:		The product can adequately limit the risk of surface condensation. See section 6.1 of this Certificate.
Regulation:	D1	Stability
Comment:		The product has adequate strength and stiffness. See section 8.1 of this Certificate.
Regulation:	F2(a)(i)	Conservation measures
Regulation:	F3(2)	Target carbon dioxide Emissions Rate
Comment:		Floors incorporating the product can contribute to satisfying these Regulations. See sections 5.1 and 5.2 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: 2 *Delivery and site handling* (2.4) of this Certificate.

# Non-regulatory Information

## NHBC Standards 2010

NHBC accepts the use of Xtratherm Safe-R Underfloor Insulation, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 5.1, *Substructure and ground bearing floors*.

# Technical Specification

## 1 Description

1.1 Xtratherm Safe-R Underfloor Insulation, comprises rigid phenolic board with a composite foil facing on both sides.

1.2 The boards have the nominal characteristics as shown in Table 1.

Length (mm)	2400
Width (mm)	1200
Thickness (mm)	50 to 120 (in 5 mm increments)
Minimum compressive strength at 10% compression (kPa)	150
Edge profile	Square

1.3 Ancillary items used with the product are:

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

## 2 Delivery and site handling

2.1 The product is delivered to site in polyethylene shrink-wrapped packs containing a label bearing the manufacturer's trade name, product description, and the BBA identification mark incorporating the number of this Certificate.

2.2 Care must be taken to avoid damaging corners and edges.

2.3 The product must be protected from prolonged exposure to sunlight and should be stored either under cover or protected with opaque polythene sheeting. Where possible, packs should be stored inside. If stored outside, the product should be stacked flat and raised above ground level, and not in contact with ground moisture.

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

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Xtratherm Safe-R Underfloor Insulation.

## Design Considerations

### 3 General

3.1 Xtratherm Safe-R Underfloor Insulation is for use on ground-supported or suspended concrete ground floors or between the joists of suspended timber ground floors, in new and existing domestic or similar buildings.

3.2 The product is effective in reducing the thermal transmittance (U value) of new or existing ground floors.

3.3 Ground-supported concrete floors incorporating the product must include a suitable damp-proof membrane laid in accordance with the relevant clauses of CP 102 : 1973, BS 8102 : 1990 and/or BS 8215 : 1991.

3.4 Suspended concrete or timber ground floors incorporating the product must include a damp-proof membrane or suitable ventilation of the sub-floor as appropriate.

3.5 The overlay to the product should be:

- a cement-based floor screed laid in accordance with the relevant clauses of BS 8204-1 : 2003 and/or BS 8204-2 : 2003, and BS 8000-9 : 2003, or
- wood-based floor, eg tongue-and-groove, flooring grade particle board (Type P5 or P7) to BS EN 312 : 2003 or oriented strand board of type OSB/3 or OSB/4 to BS EN 300 : 2006, 18 mm thick (minimum), installed in accordance with DD CEN/TS 12872 : 2007, or
- a concrete slab in accordance with BS 8204-1 : 2003 and BS 8204-2 : 2003.

### 4 Practicability of installation

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

## 5 Thermal Performance

5.1 Calculations of the thermal transmittance (U value) of a floor should be carried out in accordance with BS EN ISO 6946 : 2007, BS EN ISO 13370 : 2007 and BRE Report (BR 443 : 2006) *Conventions for U-value calculations* using the declared thermal conductivity ( $\lambda_{90/90}$ ) values shown in Table 2. The U value of a floor will depend on the thickness of the products, the perimeter/area ratio and the floor type. U values of example floors are shown in Table 3 and typical design roof U values in Tables 4 to 6.

Table 2 Thermal conductivity

Insulation thickness (mm)	Thermal conductivity ( $\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ )
50 and 55	0.023
60 to 75	0.022
80 to 120	0.021

Table 3 Floor U values<sup>(1)</sup>

Floor type	Perimeter/ area ratio	Insulation thickness		
		50 mm	80 mm	120 mm
Slab on ground support <sup>(2)</sup>	0.2	0.19	0.14	0.11
	0.4	0.25	0.17	0.13
	0.6	–	0.19	0.14
	0.8	–	0.20	0.15
	1.0	–	0.21	0.15
Suspended timber floor <sup>(2)(3)(4)</sup>	0.2	0.24	0.19	0.15
	0.4	–	0.22	0.18
	0.6	–	0.24	0.19
	0.8	–	0.25	0.19
	1.0	–	–	0.20
Suspended beam and block floor <sup>(2)(3)(4)</sup>	0.2	0.20	0.15	0.12
	0.4	0.24	0.17	0.13
	0.6	–	0.18	0.14
	0.8	–	0.19	0.14
	1.0	–	0.20	0.14

(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 ( $\epsilon$ )  $0.0015 \text{ m}^2\cdot\text{m}^{-1}$ .

Table 4 Mean design floor U values — England and Wales<sup>(1)</sup>

Construction	U value ( $\text{W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ )
Existing building – new or replaced floor	0.22
Notional non-domestic building	0.22
Dwelling new-build limit	0.25
Non-domestic new-build limit	0.25
Notional dwelling	0.25
Existing building – renovated or retained floor	0.25

(1) Flexible approaches on existing buildings are given in the Approved Documents.

Table 5 Mean design floor U values — Scotland<sup>(1)</sup>

Construction	U value ( $\text{W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ )
Notional dwelling	0.15
New dwelling simplified method	0.15
Conversion unheated building (into dwellings)	0.15
Extension to dwelling	0.15
Alterations and reconstructions to a dwelling	0.18
Stand-alone building < 50 m <sup>2</sup> to a dwelling	0.18
New dwelling limit	0.20
New non-dwellings limit for shell and fit out	0.20
Conversion of unheated building	0.20
Non-domestic extension, alterations and reconstructions	0.20
New non-domestic limit	0.22
Notional non-dwelling	0.25
Conversion of heated building	0.25

(1) Flexible approaches on existing buildings are given in the Technical Handbooks.

Table 6 Mean design floor U values — Northern Ireland<sup>(1)</sup>

Construction	U value (W·m <sup>-2</sup> ·K <sup>-1</sup> )
Existing buildings – new floors	0.22
Notional dwelling	0.25
Building new-build limit	0.25
Notional non-domestic building	0.25
Existing building – replaced, renovated or retained floor	0.25

(1) Flexible approaches on existing buildings are given in the Technical Booklets.

5.2 The product can contribute to maintaining, continuity of thermal insulation at junctions between elements. For Accredited Construction Details the corresponding psi values in BRE Information Paper IP1/06 *Assessing the effects of thermal bridging at junctions and around openings*, Table 3 may be used in carbon emission calculations in Scotland and Northern Ireland. Detailed guidance for other junctions and on limiting heat loss by air infiltration can be found in: **England and Wales** — Approved Documents to Part L and for new thermal elements to existing buildings, Accredited Construction Details (version 1.0). See also SAP 2009 Appendix K and the *iSBEM User Manual* for new-build. **Scotland** — Accredited Construction Details (Scotland) **Northern Ireland** — Accredited Construction Details (version 1.0).

## 6 Condensation

### Interstitial condensation



6.1 Floors will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2002, Section 8.5 and Appendix D and BRE Report (BR 262 : 2002) *Thermal insulation : avoiding risks* for England and Wales.

6.2 For the purposes of assessing the risk of interstitial condensation, the insulation core vapour resistivity may be taken as approximately 250 MN·s·g<sup>-1</sup>·m<sup>-1</sup> and a resistance value of 1000 MN·s·g<sup>-1</sup> for each individual foil facing.

6.3 For beam and block, and timber suspended ground floors, it is not necessary to introduce a vapour control layer as long as adequate sub-floor cross ventilation is provided.

### Surface condensation



6.4 Floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.7 W·m<sup>-2</sup>·K<sup>-1</sup> at any point, and the junctions with walls are designed in accordance with *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings* TSO 2002, BRE Information Paper IP1/06 or section 5.2 of this Certificate.



6.5 Floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 1.2 W·m<sup>-2</sup>·K<sup>-1</sup> at any point. Guidance may be obtained from BS 5250 : 2002, section 8, or section 5.2 of this Certificate. Additional information can be found in BRE Report (BR 262 : 2002) *Thermal insulation: avoiding risks*.

## 7 Behaviour in relation to fire

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

## 8 Floor Loading



8.1 The product is suitable for use in domestic or similar buildings. When covered with a suitable floor covering it is capable of resisting a uniformly distributed load of <4 kN·m<sup>-2</sup> and a concentrated load of <1.5 kN for category A and B and type A and B situations for domestic and residential activities as defined in BS EN 1991-1-1 : 2002, Table NA.2 and it's National Annex and BS 6399-1 : 1996, Table 1 respectively. Further assessment is necessary in the case of duty walkways and floors subject to physical activities.

8.2 Where the product is used in non-domestic situations or where the floor is subject to loads greater than those defined in section 8.1, the ability of the floor construction to resist the loads in service should be confirmed by the flooring overlay specification. The performance of the floor construction will depend on the insulation properties (point loads particularly at edges and corners or impact loads) and type of floor covering used (including thickness and strength). 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 from the flooring manufacturer.

## 9 Maintenance

As the product is confined within the floor and it has suitable durability (see section 10), maintenance is not required.

## 10 Durability



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

## 11 General

11.1 Installation of Xtratherm Safe-R Underfloor Insulation must be in accordance with the Certificate holder's installation instructions and the requirements of this Certificate.

11.2 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

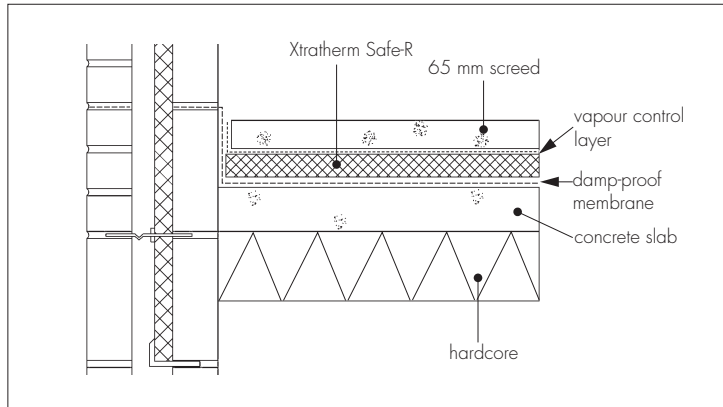


Figure 2 Suspended concrete floor — screed overlay

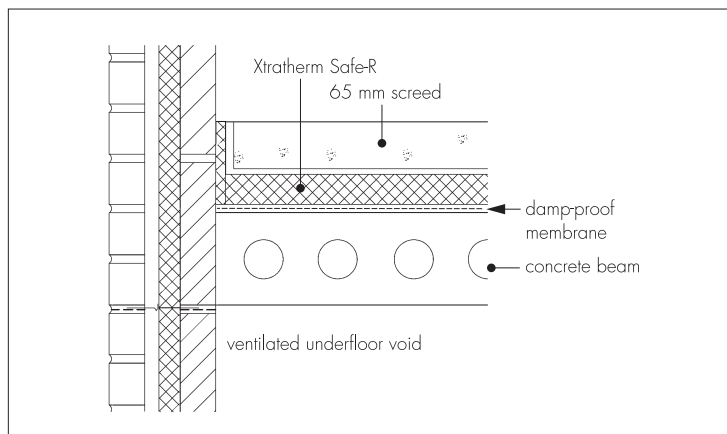


Figure 3 Concrete slab overlay

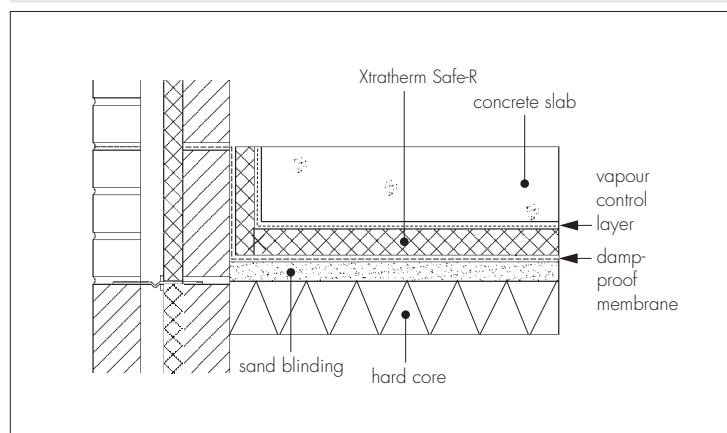


Figure 4 Ground-supported concrete floor — board overlay

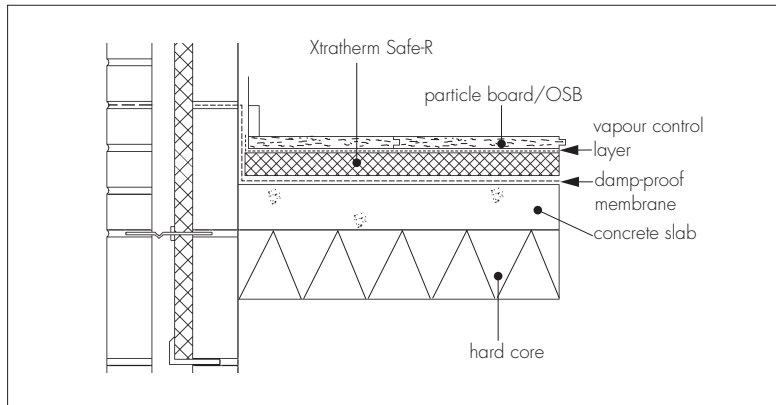


Figure 5 Suspended concrete floor — board overlay

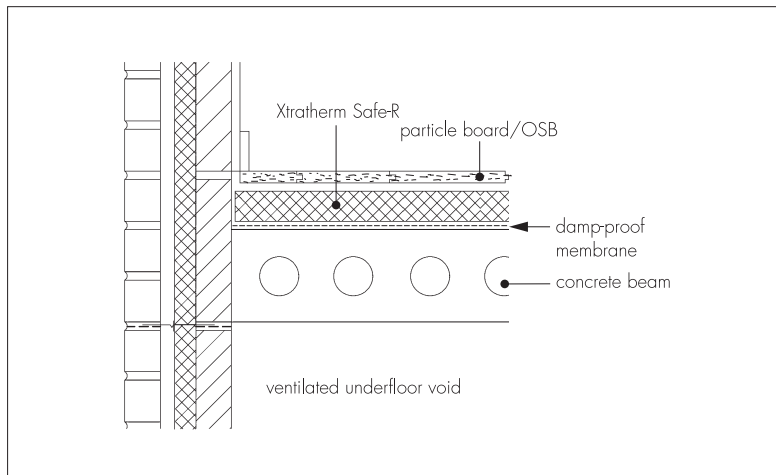
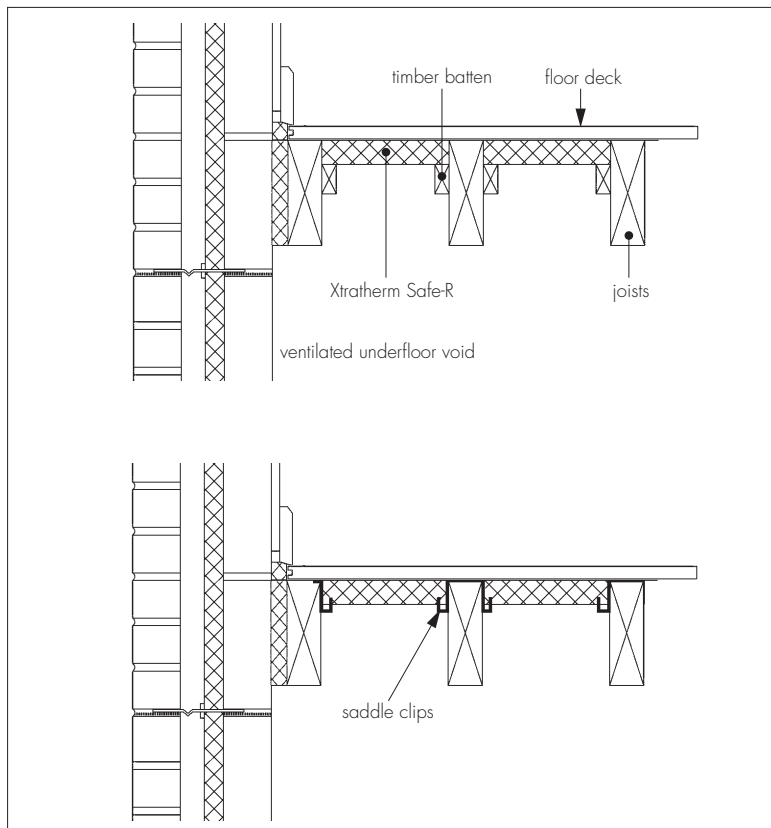


Figure 6 Suspended timber floors





11.3 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.

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

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

11.6 Ground floors with a hardcore base must be compacted and blinded with a thin layer of sand before laying the dpm, product and concrete slab.

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

11.8 Where a screed or concrete slab is laid over the product, vertical upstands of the product should be provided and 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 damp-proof course level to provide edge insulation to the floor.

11.9 In suspended timber floors, the product is installed between the floor joists.

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

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

## 12 Procedure

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

12.2 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 product.

### Timber-based board overlay

12.3 Before laying the timber overlay, pre-treated timber battens in accordance with BS 1282 : 1999, are positioned at doorways, access panels and to support partitions. Adequate time should be allowed for solvents from solvent-based preservatives to evaporate.

12.4 When the dpc is laid below the slab, a vapour control layer of polyethylene sheet of minimum thickness 250  $\mu\text{m}$ , is laid between the product and the overlay boards. The polyethylene sheet must have 150 mm overlaps taped at the joints and turned up 100 mm at the walls.

12.5 Tongue-and-groove 18 mm thick plywood, particle board (type P5 to P7), or OSB/2 to OSB/4 is laid with staggered cross-joints in accordance with DD CEN/TS 12872 : 2007.

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

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

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

12.9 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.

12.10 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.

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



## Cement-based screed overlay

12.12 Perimeter edge pieces are cut and placed around the edges and all floor joints taped, or a polythene vapour control layer, minimum 125 µm thick, is laid over the product 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 or BS 8204-2 : 2003 should be followed and BRE's *Building Elements, Floors & Flooring*, Chapter 4.2, should be consulted.

## Concrete slab overlay (ground-bearing only)

12.13 Perimeter edge pieces are cut and placed around the edges and taped at joints. A polythene vapour control layer, minimum 125 µm thick, is laid over the product 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

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

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

12.16 The product 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 product.

## 13 Incorporation of services

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

13.2 Where the product is installed on a floor of a suspended beam and block design, all services must be installed in accordance with the Agrément Certificate for that floor and/or with the relevant codes of practice.

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

13.4 Where water pipes are installed below the product they should be pre-lagged. Pipes installed above the product do not require lagging, although some provision may be needed for expansion and contraction.

13.5 In situations where access to the services is desirable on board overlay floors, a duct may be formed by mechanically fixing to the floor, timber bearers of the same thickness as the product 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 product (see section 5.2 with regard to limiting heat loss).

## Technical Investigations

### 14 Tests

Tests were carried out on Xtratherm Safe-R Underfloor Insulation by the BBA in accordance with BS EN 13166 : 2008 to determine:

- dimensional stability
- compressive strength
- Short term water absorption
- Long term water absorption by partial immersion
- thermal conductivity
- compressive creep
- bowing under a thermal gradient.

### 15 Investigations

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

15.2 An assessment was made of the results of test data to BS EN 13166 : 2008 in relation to:

- dimensions
- squareness
- density
- λ value.

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

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

## Bibliography

- BS 1282 : 1999 *Wood preservatives — Guidance on choice, use and application*
- BS 5250 : 2002 *Code of practice for control of condensation in buildings*
- BS 6399-1 : 1996 *Loading for buildings — Code of practice for dead and imposed loads*
- BS 8000-9 : 2003 *Workmanship on building sites — Cementitious levelling screeds and wearing screeds — Code of practice*
- BS 8102 : 1990 *Code of practice for protection of structures against water from the ground*
- BS 8203 : 2001 *Code of practice for installation of resilient floor coverings*
- BS 8204-1 : 2003 *Screeds, bases and in-situ floorings — Concrete bases and cement sand levelling screeds to receive floorings — Code of practice*
- BS 8204-2 : 2003 *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 EN 300 : 2006 *Oriented Strand Boards (OSB) — Definitions, classification and specifications*
- BS EN 312 : 2003 *Particleboards — Specifications*
- BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures — General actions— Densities, self-weight, imposed loads for buildings*
- NA to BS EN 1991-1-1 : 2002 *UK National Annex to Eurocode 1 : Actions on structures — General actions— Densities, self-weight, imposed loads for buildings*
- BS EN 13166 : 2008 *Thermal insulation products for buildings — Factory made products of phenolic foam (PF) — Specification*
- BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- BS EN 13810-1 : 2002 *Wood-based panels — Floating floors — Performance specifications and requirements*
- BS EN ISO 13370 : 2007 *Thermal performance of buildings — Heat transfer via the ground — Calculation methods*
- CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*
- DD 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*

## 16 Conditions

16.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English law.

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

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

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

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

16.5 Any information relating to the manufacture, supply, installation, use and maintenance of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.

