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Agrément Certificate  
No 91/2568

## PRODUCT SHEET 1 — SPRINGVALE FLOORSHIELD AND SPRINGVALE PLATINUM FLOORSHIELD FLOORING INSULATION FOR CONCRETE GROUND FLOORS

### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors, an expanded polystyrene insulation for concrete ground floors.

#### AGRÉMENT CERTIFICATION INCLUDES:

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



#### KEY FACTORS ASSESSED

**Thermal performance** — the products can be used to improve the thermal performance of a floor (see section 4).

**Condensation** — the performance of the products with regard to interstitial and surface condensations has been considered. Floors will adequately limit the risk of interstitial and surface condensation (see section 5).

**Floor loading** — the floor loading aspect has been assessed for these products. The insulation covered with particle board or screed can support this design loading without undue deflection (see section 6).

**Behaviour in relation to fire** — the products can be designed to meet the UK requirements concerning fire performance (see section 7).

**Durability** — the design of the products under typical UK conditions has been considered as part of this assessment and will remain effective for the life of the building (see section 9).

The BBA has awarded this Agrément Certificate for Springvale Floorshield and Springvale Platinum Floorshield Insulation for Concrete Ground Floors as fit for their intended use provided it is installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Head of Approvals  
— Physics

Chief Executive

Date of First issue: 4 January 1991

Date of Fifth issue: 10 March 2008

*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, Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



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

Requirement:	A1	Loading
Comment:		Floors incorporating these products can meet this Requirement. See section 6.3 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		Elements incorporating the products can meet this Requirement. See sections 5.1 and 5.3 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The insulation can enable, or contribute to enabling, a floor to meet its Target Emission Rate. See sections 4.3 to 4.6 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable materials. See section 9 and the <i>Installation</i> part of this Certificate.



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

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The products can contribute to a construction satisfying this Regulation. See section 9 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	1.1(a)(b)	Structure
Comment:		Floors incorporating these products can satisfy this Standard, with reference to clause 1.1.1 <sup>(1)</sup> . See section 6.3 of this Certificate.
Standard:	3.15	Condensation
Comment:		Floors incorporating these products can satisfy this Standard, with reference to clauses 3.15.1 <sup>(1)</sup> , 3.15.4 <sup>(1)</sup> and 3.15.5 <sup>(1)</sup> . See sections 5.1 and 5.4 of this Certificate.
Standard:	6.1(a)(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The products will enable or contribute to enabling a floor to satisfy these Standards, with reference to clauses 6.1.1 <sup>(1)</sup> , 6.1.2 <sup>(1)(2)</sup> , 6.1.3 <sup>(2)</sup> , 6.1.6 <sup>(1)</sup> , 6.2.1 <sup>(1)(2)</sup> , 6.2.3 <sup>(1)</sup> , 6.2.4 <sup>(1)(2)</sup> , 6.2.5 <sup>(1)</sup> , 6.2.9 <sup>(1)</sup> , 6.2.10 <sup>(1)</sup> , 6.2.11 <sup>(1)</sup> and 6.2.12 <sup>(1)</sup> . See the sections 4.3 to 4.6 of this Certificate.
Regulation:	12	Building standards — conversions
Comment:		All comments given for the products under Regulation 9, also apply to this Regulation, with reference to clauses 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</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 products are acceptable materials. See section 9 and the <i>Installation</i> part of of this Certificate.
Regulation:	C5	Condensation
Comment:		Floors incorporating the products can meet this Regulation. See section 5.1 of this Certificate.
Regulation:	D1	Stability
Comment:		Floors incorporating these products can meet this Regulation. See section 6.3 of this Certificate.
Regulation:	F2(a)(i)	Conservation measures
Regulation:	F3	Target carbon dioxide Emissions Rate
Comment:		The products will contribute to a building satisfying its Target Emission Rate. See sections 4.3 to 4.6 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: 1 *Description* (1.3) and 2 *Delivery and site handling* (2.4).

# Non-regulatory Information

## NHBC Standards 2007

NHBC accepts the use of the Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 5.1 *Substructure and ground bearing floors*.

## Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 3 *Substructure*, Sub-section *Floors*.

## General

This Certificate relates to Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors for use in ground supported or suspended concrete floors and may be installed either on:

- a concrete floor slab with a cement-sand screed overlay, or
- a concrete floor slab with a particle board overlay, or
- hardcore bases of ground floors with a concrete slab overlay

The products are used to reduce the thermal transmittance of new or existing floors.

## Technical Specification

### 1 Description

1.1 Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors comprise expanded polystyrene bead.

1.2 Springvale Platinum Floorshield contains a fire-retardant additive (*Class E or Class F Reaction to fire*) and Springvale Floorshield is available with or without a fire-retardant additive. Springvale Floorshield and Springvale Platinum Floorshield are available with both plain or interlocking tongue-and-groove on all edges.

1.3 The nominal dimensions of the products are given in Table 1.

Table 1 Nominal characteristics

Edge	Board sizes (mm)	Thickness (mm)
Square-edged	1200 x 600	20 <sup>(1)</sup>
	2400 x 1200	
Tongue-and-groove	1200 x 600	35–70 <sup>(1)</sup>

(1) In 5 mm increments.

### 2 Delivery and site handling

2.1 Boards are delivered to site in packs wrapped in polyethylene. Each pack contains a label showing the product name, grade, manufacturer's trade name and the BBA logo incorporating the number of this Certificate.

2.2 The product must be protected from prolonged exposure to sunlight and should be stored either under cover or protected with opaque, light-coloured polyethylene. Care must be taken to avoid contact with solvents and materials containing volatile organic components such as coal tar, pitch, or timber newly treated with creosote.

2.3 Boards should be stored flat, protected from high winds and raised above damp surfaces.

2.4 The boards must not be exposed to naked flame or other ignition sources.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors.

## 3 Use

3.1 Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors is effective in reducing the U value (thermal transmittance) of new or existing ground floors incorporating either a cement-sand screed, particle board overlay or concrete slab overlay.

3.2 Ground-supported concrete floors incorporating the boards must include a suitable damp-proof membrane laid in accordance with CP 102 : 1973, BS 8102 : 1990 and/or BS 8215 : 1990 (see section 8 of this Certificate).

3.3 Suspended concrete ground floors incorporating the boards must include or damp-proof membrane or suitable ventilation of the sub-floor as appropriate (see section 8 of this Certificate).

3.4 The overlay to the boards should be:

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

## 4 Thermal performance

4.1 Calculations of the thermal transmittance (U value) of a floor should be carried out in accordance with BS EN ISO 6946 : 1997, BS EN ISO 13370 : 1998 and BRE report (BR 443 : 2006) *Conventions for U-value calculations* using the declared thermal conductivity ( $\lambda_{90/90}$  value) of the insulation as shown in Table 2.

Table 2 Thermal conductivity ( $\lambda$ )

Grade	Thermal conductivity ( $\text{Wm}^{-1}\text{K}^{-1}$ )
EPS 70	0.038
EPS 100	0.035
EPS 150	0.034
EPS 200	0.033
Platinum EPS 70	0.030
Platinum EPS 100	0.030

4.2 The U value of a floor will depend on the thickness of the board, the perimeter/area ratio and the use of the product. Examples of U values for ground supported, suspended beam and block are given in Table 3.



4.3 Subject to the selection of an appropriate construction, P/A ratio and insulation thickness, a floor construction can contribute to achieving the following design U values:

### England and Wales and Northern Ireland

- $0.25 \text{ Wm}^{-2}\text{K}^{-1}$  required for 'notional' dwellings in SAP 2005
- $0.25 \text{ Wm}^{-2}\text{K}^{-1}$  limit average specified in Approved Documents L1A (Table 2), and Technical Booklet F1 (Table 2.2)
- $0.70 \text{ Wm}^{-2}\text{K}^{-1}$  limit for an individual element specified in Approved Documents L1A (Table 2), and Technical Booklets F1 (Table 2.2).

### Scotland

- $0.20 \text{ Wm}^{-2}\text{K}^{-1}$  required for the 'simplified approach – solid fuel packages 3 and 6' 'notional' dwelling in Mandatory Standard 6.1, clause 6.1.6<sup>(1)</sup>
- $0.22 \text{ Wm}^{-2}\text{K}^{-1}$  required for 'notional' dwellings in SAP 2005 (for Scotland) and the 'simplified approach – packages 1, 2, 4 and 5' in Mandatory Standard 6.1, clauses 6.1.2<sup>(1)(2)</sup> and 6.1.6<sup>(1)</sup>
- $0.25 \text{ Wm}^{-2}\text{K}^{-1}$  required for 'notional' dwellings as described in Mandatory Standard 6.1, clause 6.1.6<sup>(1)</sup>
- $0.22 \text{ Wm}^{-2}\text{K}^{-1}$  for extensions the value described by the Table to Mandatory Standard 6.2, clauses 6.2.9<sup>(1)</sup>, 6.2.10<sup>(2)</sup>, 6.2.11<sup>(1)</sup> and 6.2.12<sup>(2)</sup>
- $0.70 \text{ Wm}^{-2}\text{K}^{-1}$  limit for an individual element specified in Mandatory Standard 6.2, clauses 6.2.1<sup>(1)</sup>, 6.2.9<sup>(1)</sup> and 6.2.10<sup>(2)</sup>.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

4.4 Floors with U values lower than (or the same as for Scottish dwellings) the relevant 'notional' value as specified in section 4.3 will contribute to a building meeting its target overall reduction in carbon dioxide emissions of about 20% (or 18% to 25% in Scotland) for dwellings and 23% to 28% for buildings other than dwellings. Floors with higher U values will require additional energy saving measures in the building envelope and/or services.

4.5 Compliance with the guidance referred to in section 4.6 will allow the use of the default psi values from Table 3 of BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings* and Table K1 of *The Government's Standard Assessment Procedure for Energy rating of Dwellings (SAP 2005)*, in Target Emission Rate calculations to SAP 2005 or the simplified approach in Scotland.

4.6 The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between the external wall and other building elements. Guidance in this respect, and on limiting heat loss by air infiltration, can be found in:

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

**Scotland** — Accredited Construction Details (Scotland)

**Northern Ireland** — Accredited Construction Details (version 1.0).

Table 3 Example U values ( $Wm^{-2}K^{-1}$ )

Floor type	Perimeter/ area ratio	Grade	Insulation thickness (mm)			
			25	50	75	100
Slab on ground	0.25	EPS 70	0.32	0.26	0.22	0.19
			0.50	0.35	0.28	0.23
			0.75	0.39	0.31	0.26
			1.00	0.43	0.33	0.27
	0.50	EPS 100	0.31	0.25	0.21	0.18
			0.45	0.34	0.27	0.22
			0.53	0.38	0.30	0.25
			0.58	0.41	0.32	0.26
	0.75	EPS 150	0.31	0.25	0.21	0.18
			0.44	0.33	0.26	0.22
			0.53	0.37	0.29	0.24
			0.58	0.40	0.31	0.25
	1.00	EPS200	0.30	0.24	0.20	0.18
			0.44	0.33	0.26	0.21
			0.52	0.37	0.29	0.24
			0.57	0.39	0.30	0.25
	1.00	Platinum EPS 70 and EPS 100	0.30	0.23	0.19	0.17
			0.43	0.31	0.24	0.20
			0.50	0.35	0.27	0.22
			0.54	0.37	0.28	0.23
Suspended beam and block	0.25	EPS 70	0.31	0.26	0.22	0.19
			0.41	0.32	0.27	0.23
			0.47	0.36	0.29	0.24
			0.51	0.38	0.30	0.25
	0.50	EPS 100	0.31	0.25	0.21	0.18
			0.40	0.31	0.26	0.22
			0.46	0.34	0.28	0.23
			0.49	0.36	0.29	0.24
	0.75	EPS 150	0.30	0.25	0.21	0.18
			0.40	0.31	0.25	0.21
			0.46	0.34	0.27	0.23
			0.49	0.36	0.28	0.23
	1.00	EPS 200	0.30	0.25	0.21	0.18
			0.40	0.30	0.25	0.21
			0.45	0.33	0.27	0.22
			0.48	0.35	0.28	0.23
	1.00	Platinum EPS 70 and EPS 100	0.30	0.24	0.20	0.17
			0.39	0.29	0.23	0.20
			0.43	0.32	0.25	0.21
			0.46	0.33	0.26	0.21

## 5 Condensation

### Interstitial condensation



5.1 Floors will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2002, Section 8.5 and Appendix D. The products have a water vapour resistivity exceeding  $250 MNsg^{-1}m^{-1}$ .

5.2 When the products are used above the damp-proof course on a ground-supported floor, or on a beam-and block floor, a vapour control layer is installed on the warm side of the insulation to inhibit the risk of interstitial condensation.

## Surface condensation



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



5.4 Floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed  $1.2 \text{ Wm}^{-2}\text{K}^{-1}$  at any point. Guidance may be obtained from Section 8 of BS 5250 : 2002 and BRE report (BR 262 : 2002) *Thermal insulation : avoiding risks*.

## 6 Floor loading

6.1 The boards have compressive strength values as given in Table 4.

Table 4 Compressive stress

Grade	Compressive stress of 10% compression (kPa)
EPS 70/Platinum EPS 70	70
EPS 100/Platinum EPS 100	100
EPS 150	150
EPS 200	200

6.2 The design loadings for self-contained dwelling units as defined in BS 6399-1 : 1996 are:

- intensity of uniformly distributed load 1.5 kPa
- concentrated load 1.4 kN.



6.3 The insulation covered with particle board or screed can support these design loadings without undue deflection.

6.4 A BRE survey of imposed floor loading in domestic buildings (see BRE Current Paper No 2/77 *Floor loadings in domestic buildings — the results of a survey*) indicates that loadings in flats are commonly in the region of 0.6 kPa and loadings of 1.5 kPa are normally associated with fixed items.

6.5 Where the boards are used under a concrete slab, resistance to concentrated and distributed loads is a function of the slab specification.

## 7 Behaviour in relation to fire

7.1 The boards do not prejudice the fire resistance properties of the floor.

7.2 When properly installed, the boards will not add significantly to any existing fire hazard. The boards will be contained within the floor by the overlay until the overlay itself is destroyed. Therefore, the boards will not contribute to the development stages of a fire or present a smoke or toxic hazard. Electrical cables running within the insulation should be separated from it by enclosing them within a suitable conduit.

## 8 Moisture penetration

8.1 The boards are not a water vapour control layer. However, they will not allow moisture to cross the completed floor construction.

8.2 For floors subject to national Building Regulations, construction should be as detailed or designed in accordance with:

**England and Wales** — Approved Document C, Section 4

**Scotland** — Mandatory Standard 3.4, clauses 3.4.2<sup>(1)</sup> to 3.4.4<sup>(1)</sup> and 3.4.6<sup>(1)</sup>

(1) Technical Handbook (Domestic).

**Northern Ireland** — Technical Booklet C, Section 1

## 9 Durability



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

## 10 General

10.1 Typical methods of installation of Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors are shown in Figures 1, 2, 3 and 4. Reference should be made to BRE Report [BR 262 : 2002].

Figure 1 Typical installation details — overlay screed

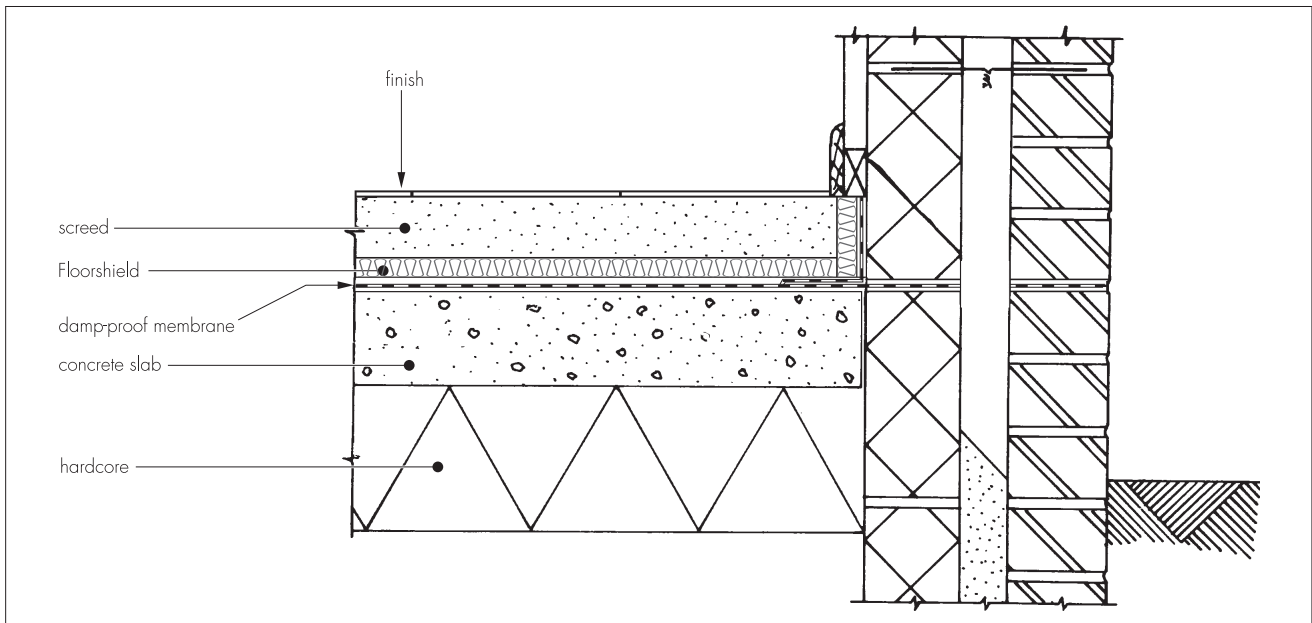
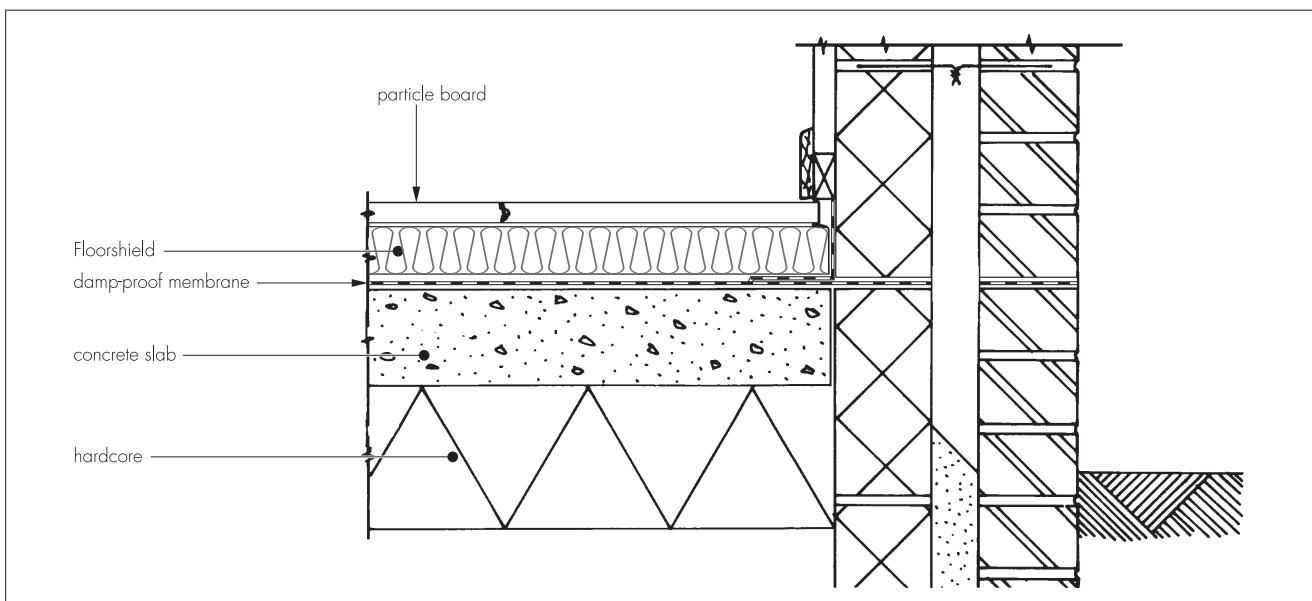


Figure 2 Typical installation details — particle board (dpm over slab)



10.2 The concrete floor slab over which the boards are laid should be left for as long as possible to maximise drying out, in accordance with BS 8203 : 2001, Section 3.1.2.

10.3 The floor slab surface should be smooth 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.

10.4 The boards can be used on a beam-and-block suspended concrete floor that is the subject of a current Agrément Certificate and installed in accordance with, and within the limitations imposed by, that Certificate. Where the boards are laid over a suspended block-and-beam floor a levelling screed or compound may be required.

10.5 Where the boards are used over ground-supported concrete floor slabs a suitable damp-proof membrane, eg in accordance with BS 8102 : 1990 and BS 8215 : 1991, should be incorporated to resist moisture from the ground. If a liquid-type damp-proof membrane is applied over the slabs, it should be of a type compatible with expanded polystyrene and be completely dry before laying the boards.

Figure 3 Typical installation details — particle board (dpm under slab)

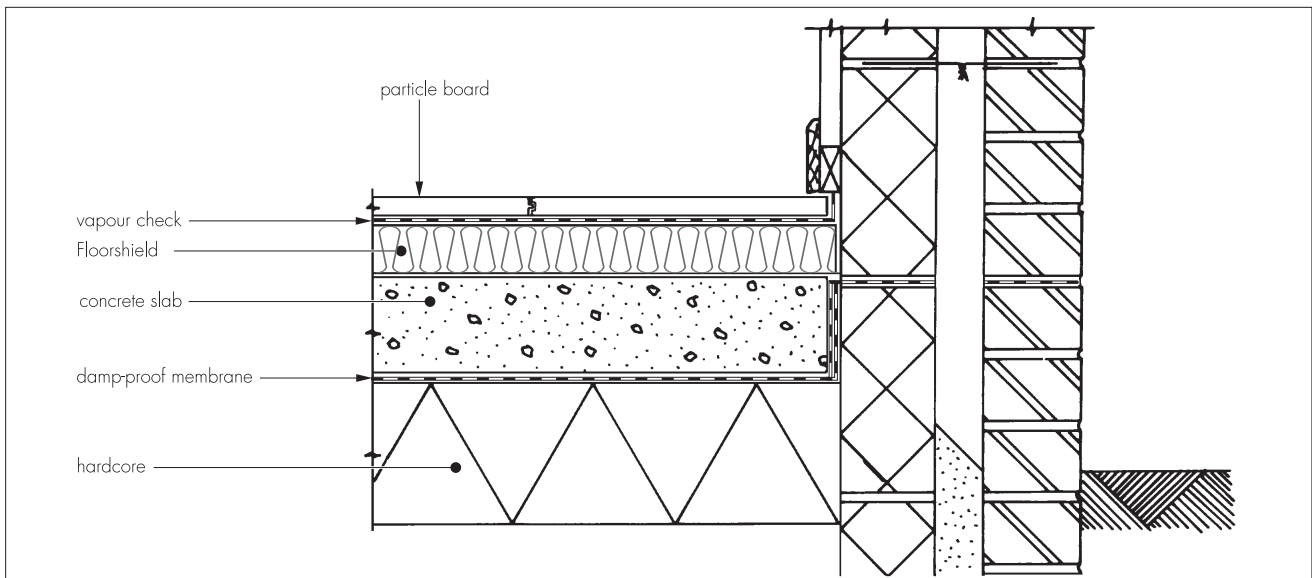
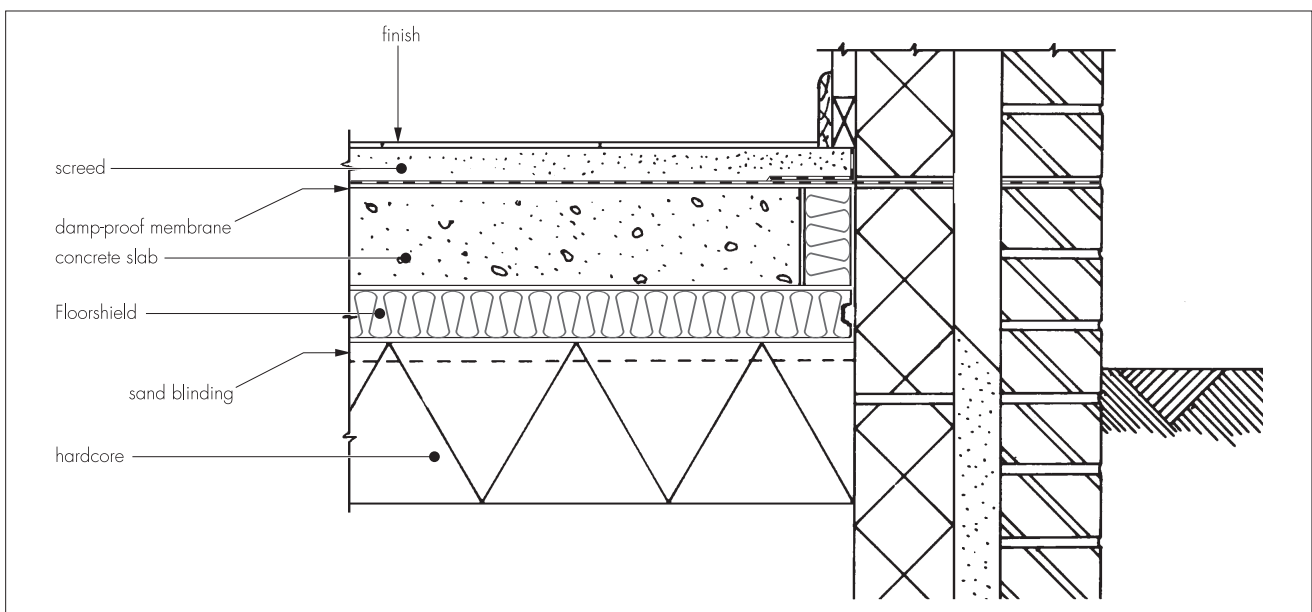


Figure 4 Typical installation details — under concrete slab



10.6 Where the boards are laid on blinded hardcore bases with a concrete slab overlay, a dpm must be provided either; under the boards, over the boards, or over the slab.

10.7 Where a screed or concrete slab is laid over the boards, vertical upstands of insulation should be provided and be of sufficient depth to fully separate the screed or slab from the wall. Alternatively, if used, a suitable cavity wall insulation material can be extended below the damp-proof course level to provide edge insulation to the floor. In this case vertical upstands of insulation may not be necessary.

10.8 During construction, the boards and overlays must be protected from damage by water spillage, plaster droppings, traffic. Before laying boards above a slab, care should be taken to ensure sufficient time for the dissipation of constructional moisture.

## 11 Procedure

11.1 The boards are cut to size, as necessary, and laid with closely butted and staggered cross joints with all joints taped. Two layers with offset joints can be laid if required.

### Cement-sand screed overlay

11.2 Vertical edge pieces are cut and placed around the perimeter edges. A properly-compacted screed of at least 65 mm is laid. The relevant clauses of BS 8204-1 : 2003 should be followed and BRE Digest 104 : 1973 *Floor screeds* and BRE Digest 224 : 1981 *Cellular Plastics for Buildings. Floors* should be consulted.

## Particle board or oriented strand board (OSB) overlay

11.3 Before laying the boards, preservative-treated battens, in accordance with BS 1282 : 1999 are fixed to the floor at doorways to support partitions (adequate time should be allowed for CCA-based preservatives to become fixed, and the solvents from solvent-based preservatives to evaporate).

11.4 Where insulation boards are laid on a dpm, a vapour check, consisting of a minimum 0.25 mm thick (1 000 gauge) polyethylene sheet is laid between the boards and the particle board. The polyethylene sheet has 150 mm overlaps taped at the joints and is turned up 100 mm at the walls.

11.5 Tongue-and-groove particle board Grade P5 or P7 minimum thickness 18 mm to BS EN 312 : 2003 is laid with staggered cross joints.

11.6 An expansion gap between the particle 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 greater.

11.7 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 particle board.

11.8 Before the particle board panels are interlocked, a waterproof PVA adhesive is applied to the joints.

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

11.10 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 and cove skirting.

## Concrete slab overlay (ground bearing only)

11.11 Vertical edge pieces are cut and placed around the floor perimeter and all board joints taped to prevent the ingress of concrete. The concrete slab is laid to the required thickness.

## Suspended concrete floor

11.12 When the boards are being laid on a suspended floor of concrete beams with block infill, lay as detailed above for cement-sand screed or particle board overlay.

## 12 Incorporation of services

12.1 The boards must not be used in direct contact with electrical heating cables or hot water pipes.

12.2 Where possible, electrical conduits and water pipes or other services should be contained in 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 (see section 7.2). Electrical cables should be enclosed in a suitable conduit. With hot pipes, the insulation must be cut back to maintain an air space.

12.3 Floorings incorporating gas pipes should be designed and installed in accordance with the requirements of the Gas Safety (Installation and Use) Regulations 1998.

12.4 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.

12.5 Where the boards are installed on a floor of a suspended beam-and-block design, all services must be installed so as not to impair the floor performance in accordance with the Agrément Certificate (where appropriate) for that floor.

12.6 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 possible 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 ENV 12872 : 2000 without intermediate support. Services should be suitably fixed to the floor base and not to the insulation boards (see section 4.6 with regard to limiting heat loss).

12.7 In timber intermediate floors, all the services should be incorporated beneath the existing floor.

The following is a summary of the technical investigations carried out on Springvale Floorshield and Springvale Platinum Floorshield Flooring Insulation for Concrete Ground Floors.

### 13 Investigations

An examination was made of data relating to:

- compressive strength at 10% compression
- density
- dimensional accuracy
- moisture vapour transmission.
- dimensional stability at 80°C
- thermal conductivity at 10°C
- cross-breaking strength failure
- maximum water vapour permeability at 38°C
- extent of burn

### 14 Other investigations

Existing data relating to the risk of interstitial condensation were examined.

## 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 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 312 : 2003 *Particleboards — Specifications*
- BS EN ISO 6946 : 1997 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- BS EN ISO 13370 : 1998 *Thermal performance of buildings — Heat transfer via the ground — Calculation methods*
- CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*
- ENV 12872 : 2000 *Wood-based panels — Guidance on the use of load-bearing boards in floors, walls and roofs*

## 15 Conditions

15.1 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.

15.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

15.3 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.

15.4 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.

15.5 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.