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Agrément Certificate
08/4529
Product Sheet 2

SPRINGVALE EPS ROOF INSULATION

SPRINGVALE HYDROSHIELD FOR INVERTED ROOF INSULATION

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the Springvale Hydrosshield For Inverted Roof Insulation, which uses expanded polystyrene, a water reducing layer and ballast or paving protection for inverted flat untrafficked roofs with slopes between 1:80 and 1:6.

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 can contribute towards the thermal performance of roof. The design thermal conductivity of the EPS board is $0.038 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ (including moisture correction factor) (see section 5).

Condensation risk — the product will limit the risk of surface and interstitial condensation adequately (see section 6).

Resistance to foot traffic — the product, in conjunction with the specified ballast layer, can accept limited pedestrian access associated with maintenance operations (see section 7).

Durability — the product will remain effective as an insulant for as long as the water reducing layer membrane is in place (see section 11).

The BBA has awarded this Agrément Certificate to the company named above for the product described herein. This 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

A handwritten signature in black ink, appearing to read 'Simon Wroe'.

Simon Wroe
Head of Approvals — Physics

A handwritten signature in black ink, appearing to read 'Greg Cooper'.

Greg Cooper
Chief Executive

Date of First issue: 16 May 2011

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, the Springvale Hydrosshield For Inverted Roof 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:	C2(c)	Resistance to moisture
Comment:		The product is acceptable. See sections 6.5 and 6.6 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The product will contribute to satisfying this Requirement. See section 5.3 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 11.1 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 product is acceptable. See sections 10.1, 11.1 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.15	Condensation
Comment:		The product is acceptable under this Standard, with reference to clauses 3.15.1 ⁽¹⁾⁽²⁾ and 3.15.3 ⁽¹⁾⁽²⁾ to 3.15.6 ⁽¹⁾⁽²⁾ . See sections 6.5 and 6.7 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 6.1.1 ⁽¹⁾ 6.1.4 ⁽¹⁾⁽²⁾ , 6.1.5 ⁽¹⁾ , 6.1.6 ⁽¹⁾⁽²⁾ , 6.1.7 ⁽²⁾ to 6.1.10 ⁽²⁾ , 6.2.1 ⁽¹⁾⁽²⁾ , 6.2.2 ⁽¹⁾ , 6.2.3 ⁽¹⁾⁽²⁾ , 6.2.4 ⁽¹⁾⁽²⁾ , 6.2.5 ⁽²⁾ , 6.2.6 ⁽¹⁾⁽²⁾ to 6.2.11 ⁽¹⁾⁽²⁾ , 6.2.12 ⁽²⁾ and 6.2.13 ⁽¹⁾⁽²⁾ , of these Standards. See section 5.3 of this Certificate. (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 sections 10.1, and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The product is acceptable. See section 11.1 of this Certificate.
Regulation:	C5	Condensation
Comment:		The product is acceptable under this Regulation. See section 6.5 of this Certificate.
Regulation:	F2(a)(i)	Conservation measures
Regulation:	F3(2)	Target carbon dioxide Emissions Rate
Comment:		The product can contribute to satisfying these Regulations. See section 5.3 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* (2.1) of this Certificate.

Non-regulatory Information

NHBC Standards 2011

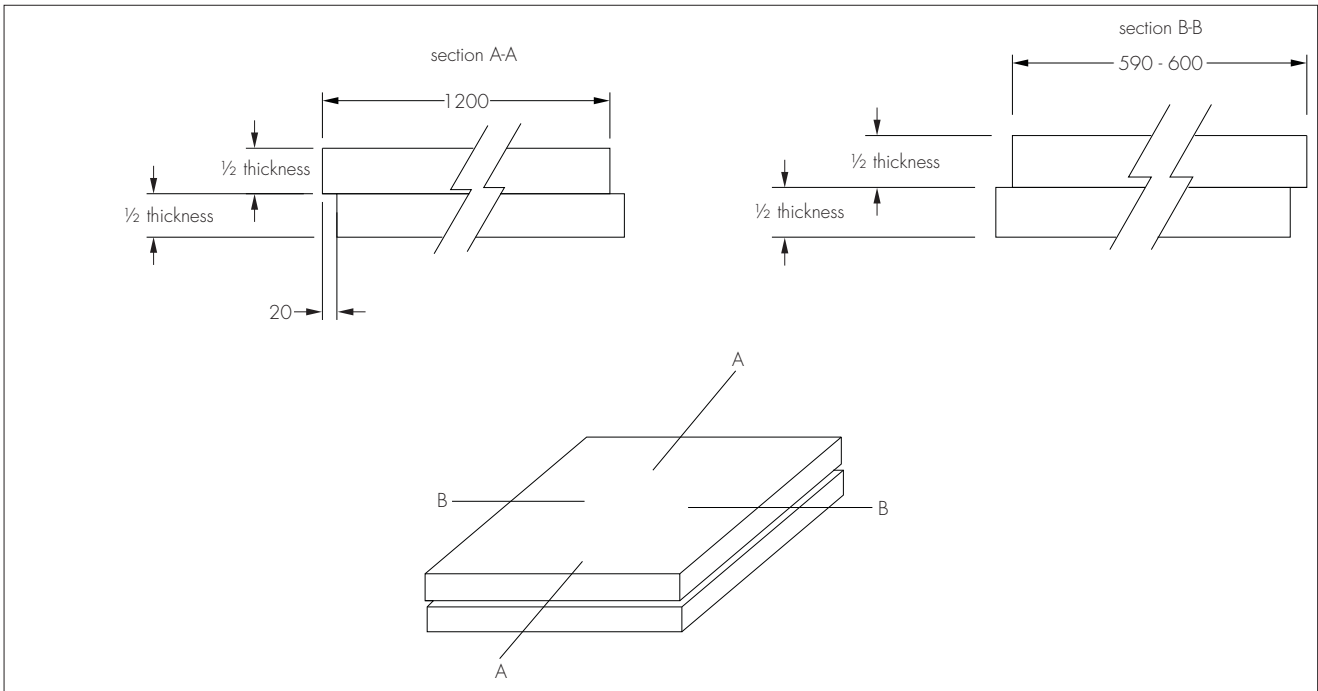
NHBC accepts the use of the Springvale Hydrosshield For Inverted Roof Insulation, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies*.

Technical Specification

1 Description

1.1 The Springvale Hydrosshield For Inverted Roof Insulation consists of lap jointed Hydrosshield EPS 200E expanded polystyrene (EPS) board made from low water absorption polystyrene bead (see Figure 1) and Hydrosshield water reducing layer. Items used with the system include Hydrosshield sealing tape, stickband and gravel ballast or paving. The product is only to be used on roofs decks waterproofed with a membrane system, see section 3.2.

Figure 1 Lap joints



1.2 The EPS 200E board, has an 'E' suffix classification which indicates that it is tested in accordance with BS EN 13501-1 : 2007.

Table 1 Physical properties of EPS component

Nominal characteristics and level	
Grade	EPS 200E
Minimum compressive strength at 10% compression (kPa)	CS (10) 200
Minimum bending strength (kPa)	BS 250
Water vapour resistivity ($MN \cdot s \cdot g^{-1} \cdot m^{-1}$)	514
Density ($kg \cdot m^{-3}$)	30 to 32
Length (mm)	1200 (L1)
Width (mm)	600 (W1)
Flatness	5 mm per 1000 mm
Squareness	3 mm difference between diagonals
Thickness (mm)	120, 150, 190, 200 to 350 ⁽¹⁾ (T2)

(1) In 5 mm increments.

1.3 The Hydrosshield water reducing layer, has the nominal properties shown in Table 2.

Table 2 Physical properties of the water reducing layer component

Nominal characteristics and level	
Mass per unit area ($g \cdot m^{-2}$)	120
Roll Length (m)	50
Roll width (m)	1.0 and 1.5
Water vapour resistance ($MN \cdot s \cdot g^{-1}$)	0.16

1.4 Ancillary items for use with this system include:

- Hydrosshield Sealing tape for joining laps in the water flow reducing layer
- Stickband for sealing around penetrations
- Gravel ballast washed, rounded and be nominal 20 mm to 40 mm in size, laid to a minimum depth of 50 mm, or
- Paving of minimum 40 mm thickness, must be installed without gaps to maintain the resistance to external fire spread.

2 Delivery and site handling

2.1 Springvale Hydrosshield For Inverted Roof Insulation is delivered to site shrink wrapped on wooden pallets, or on disposable polystyrene skids. The product is marked with a coloured stripe to indicate the grade under BS EN 13163 : 2001. A label is attached to each stack of the product, detailing the product name, board size, grade, date of manufacture and QA reference.

2.2 The product must be protected from prolonged exposure to sunlight and should be stored under cover or protected with light-coloured opaque polyethylene sheets.

2.3 Care must be taken to avoid contact with solvents or bitumen.

2.4 The product must be stored flat, off the ground, on a clean, level surface and under cover to protect them from precipitation and high winds. They must not be exposed to open flame or other ignition sources.

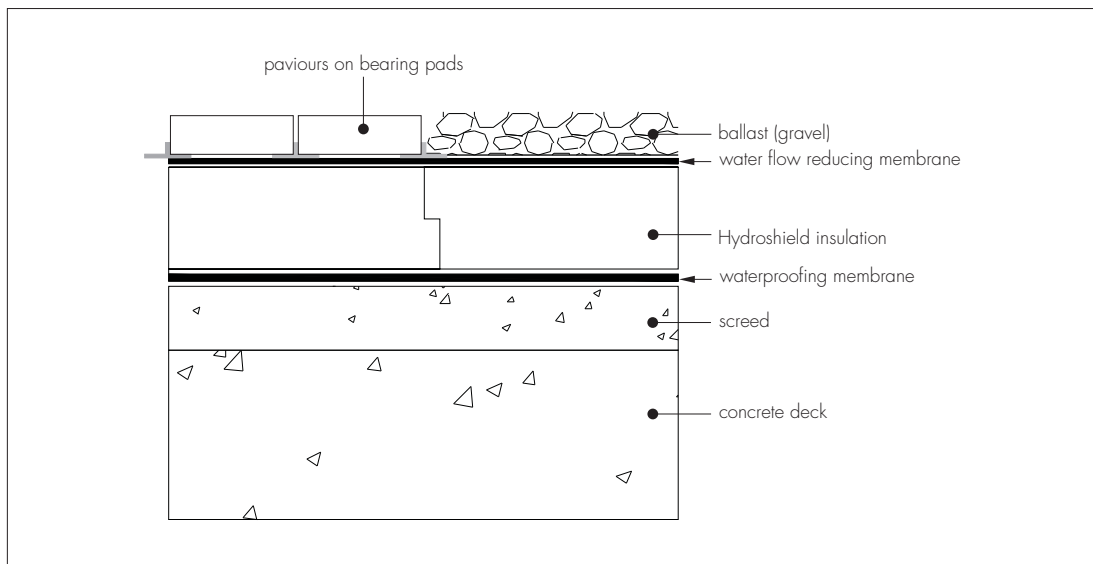
Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Springvale Hydrosshield For Inverted Roof Insulation.

Design Considerations

3.1 The Springvale Hydrosshield For Inverted Roof Insulation is suitable for use on flat roofs with a suitably designed timber, concrete and metal structural deck, in conjunction with an appropriate, fully supported waterproofing system (see Figure 2).

Figure 2 Example of Inverted roof system on concrete decking



3.2 The product is for use with one of the following waterproofing specifications:

- built-up bitumen felt to BS 8747 : 2007 and laid in accordance with BS 8217 : 2005
- mastic asphalt laid in accordance with BS 8218 : 1998
- single-ply roof waterproof coverings laid in accordance with BS 6229 : 2003 and the subject of a current Agrément Certificate, laid in accordance with the Certificate holder's advice, and within the limitations imposed by, that Certificate.

3.3 Untrafficked roofs are defined for the purpose of this Certificate as those roofs subject only to pedestrian traffic during installation of the inverted roof system and to carry out maintenance of the roof covering and cleaning of gutters. Traffic in excess of this is outside the scope of this Certificate and special precautions, such as the use of higher compressive strength grade insulation and additional protection to the waterproofing membrane, will be necessary.

3.4 Flat roofs are defined for the purpose of this Certificate as those roofs having a minimum finished fall of 1:80. Pitched roofs are defined as those having falls in excess of 1:6.

3.5 For design purposes on flat roofs, twice the minimum finished fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection and direction of falls.

3.6 Where applicable, roof drainage should be designed in accordance with BS EN 12056-3 : 2000.

3.7 The product is for use with gravel ballast or paving only. Green roof and roof garden specifications are outside the scope of this Certificate.

4 Practicability of installation

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

5 Thermal performance

5.1 Calculations of the thermal transmittance (U value) of a specific roof construction should be carried out in accordance with BS EN ISO 6946 : 2007 and BRE Report (BR 443 : 2006) *Conventions for U-value calculations*, using the declared thermal conductivity for the product as given below⁽¹⁾ and examples of U values are given in Table 3.

(1) $0.038 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ ($\lambda_{90/90}$) (including moisture correction factor) for EPS insulation when used in the inverted roof system with gravel or paving finish and 0.001 f_x factor for the Hydroshield water reducing layer and slopes $\geq 1:80$ and $\geq 1:6$.

Table 3 Thermal performance

Deck type	Insulation thickness (mm) for different precipitation					U value ($\text{W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$)
	$p^{(1)} = 1$	$p^{(1)} = 2$	$p^{(1)} = 3$	$p^{(1)} = 8$	$p^{(1)} = 10$	
(2)	300	300	320	320	—	0.13
(3)	300	300	300	320	320	
(2)	—	—	—	—	—	0.15
(3)	250	250	250	—	—	
(2)	250	250	250	250	—	0.16
(3)	—	—	—	250	250	
(2)	—	—	—	—	—	0.18
(3)	200	200	—	—	—	
(2)	190	190	190	200	200	0.20
(3)	—	—	—	190	190	
(2)	150	150	150	150	—	0.25
(3)	—	—	—	—	150	

(1) Values for p taken as examples of best to worst case for all UK locations.

(2) Dense deck with plaster on dabs — a dense concrete roof deck with a minimum thermal resistance of $0.08 \text{ m}^2\cdot\text{K}\cdot\text{W}^{-1}$.

(3) Dense deck with suspended plasterboard ceiling.

5.2 Rainfall reaching the roof water reducing layer will temporarily affect the rate of heat loss from the roof and should be accounted for by adding a correction (ΔU_r) to the calculated roof U value in accordance with Annex D4 of BS EN ISO 6946 : 2007, as follows:

$$\Delta U_r = p f_x (R_1 / R_T)^2 \text{ where:}$$

ΔU_r = correction to the calculated thermal transmittance of the roof element ($\text{W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$).

$p^{(1)}$ = average rate of precipitation during the heating season ($\text{mm}\cdot\text{day}^{-1}$).

f = drainage factor giving the fraction of p reaching the waterproof membrane.

x = factor for increased heat loss caused by rainwater flowing on the membrane ($\text{W}\cdot\text{day}\cdot\text{m}^{-2}\cdot\text{K}^{-1}\cdot\text{mm}^{-1}$).

R_1 = thermal resistance of the layer of the insulation above the waterproofing membrane ($\text{m}^2\cdot\text{K}\cdot\text{W}^{-1}$).

R_T = total thermal resistance of the construction before application of the correction ($\text{m}^2\cdot\text{K}\cdot\text{W}^{-1}$).

$F_x = 0.001$ for the system with ballast protection.

(1) values for average rainfall during the heating season for different UK locations can be found at www.metoffice.gov.uk/climate/uk/averages/19611990/images/RainOctMar6190.gif and divided by 182 days to obtain ' p ' in $\text{mm}\cdot\text{day}^{-1}$.



5.3 The product can contribute to maintaining continuity of thermal insulation at junctions. 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 risk

6.1 Warm water trapped under the product is likely to be replaced by colder water during rainfall. Therefore, during heavy or continuous rainfall the roof waterproofing and the deck will be cooled. If condensation does occur it will be short-term, disappearing when the rain stops.

6.2 Risk of interstitial condensation will be minimal with concrete decks but metal and timber decks will be subjected to short periods of moisture; therefore timber must be treated with a suitable preservative in accordance with BS 1282 : 1999.

6.3 The product, using gravel ballast have been assessed by the BBA using WUFI 4.2 software to assess the possible amount of moisture in the insulation layer when exposed to natural climatic conditions. The study which complies with BS EN 15026 : 2007 predicts that no appreciable quantity moisture will be in the insulation layer.

6.4 The product, using a paving finish, a condensation risk analysis must to be carried out using dynamic software in accordance with BS EN 15026 : 2007 and the set of climatic conditions according to the location where it is installed.

Interstitial condensation



6.5 Roofs will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2002, Section 8.4 and Appendix D.

Surface condensation



6.6 Roofs will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed $0.35 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ at any point and the junctions with walls are designed in accordance with the relevant requirements of *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings*, TSO 2002, or BRE Information Paper IP 1/06.



6.7 Roofs 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 : 2002, Section 8, and BRE Report (BR 262 : 2002).

7 Resistance to foot traffic

The product has adequate resistance to the loads associated with light maintenance traffic on roofs.

8 Behaviour in relation to fire

8.1 The product used in the inverted roof concept is ballasted with aggregate (minimum depth of 50 mm), therefore the roof may be considered to be of designation AA (low vulnerability in Scotland) and meets or satisfies the requirements of the national Building Regulations, thus:

England and Wales — Requirement B4(2)

Scotland — Mandatory Standard 2.8, clause 2.8.1⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

Northern Ireland — Regulation E5(b).

8.2 The designation of other specifications such as the use of paving should be confirmed by test to ENV 1187 : 2002, Test 4 or assessment.

9 Effect on roof coverings

The protected inverted roof system will provide solar protection and also limit the range of temperature to which the waterproofing membrane will be subjected. Placing the insulation on top of the roof covering will normally lead to an extended life of the waterproof membrane provided the top layer of the membrane is strengthened with a durable reinforcement (a separating layer), for example, glass and/or polyester in order to prevent plasticisation between the insulation and the membrane.

10 Maintenance



10.1 The inverted roof concept should require little or no maintenance, other than annual removal of any plants, cleaning of water outlets and gutters if necessary and checking that the gravel ballast is still in place and not interfering with or blocking gullies or outlets.

10.2 Leaks in the waterproof membrane can be accessed by removal of the ballast, membrane and boards, taking care not to damage the water flow reducing membrane and to reseal all junctions when the components are replaced.

10.3 Protected inverted roofs can be upgraded by the addition of insulation so long as there is sufficient height in the parapets and roof lights. This may also require additional ballast, therefore the structural deck must be adequate to support the extra loading from the increase in weight.

10.4 The Certificate holder must approve any upgrading using a loose layer of insulation on top of the existing insulation.

11 Durability



11.1 The product is rot resistant and will have a life at least 20 years, as long as the water reducing layer remains undamaged, under normal circumstances.

11.2 Care must be taken to ensure that the gravel ballast, once installed provides cover to the membrane at all times to avoid UV degradation of the water reducing layer.

Installation

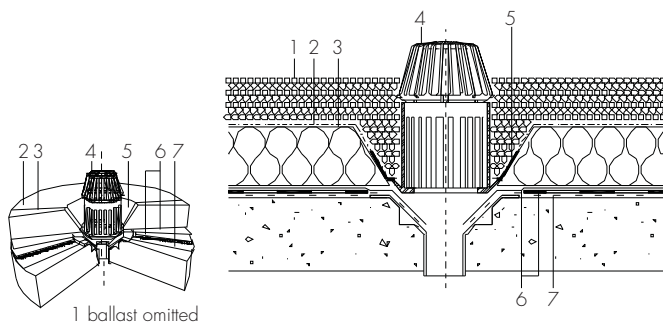
12.1 Springvale Hydrosshield For Inverted Roof Insulation is laid over a compatible and complete waterproofing system, generally starting at the point of access in a brick bond pattern.

12.2 In some constructions such as with pre single ply membranes, the product should not come into contact with the waterproofing membrane. A suitable separation layer should be used to avoid transmigration of plasticiser.

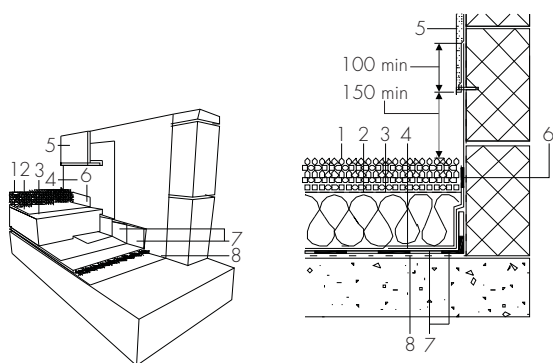
12.3 The product must be laid flat and tightly interlocked to prevent gaps in the insulation layer. Where necessary the product is cut accurately with a fine tooth saw or with a hot wire cutter around any penetrations.

12.4 The water reducing layer must be laid and sealed with Hydrosshield tape immediately after positioning the product. Carefully seal around all upstands with Hydrosshield tape and penetrations with Stickband tape (see Figure 3).

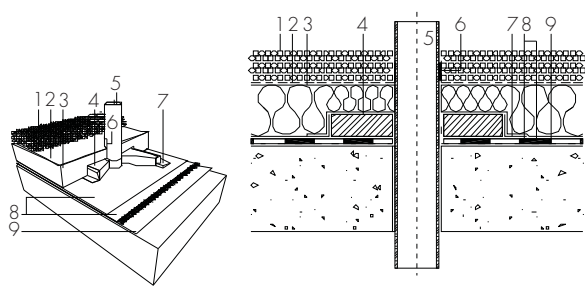
Figure 3 Installation of the hydroshield system (all dimensions in mm)



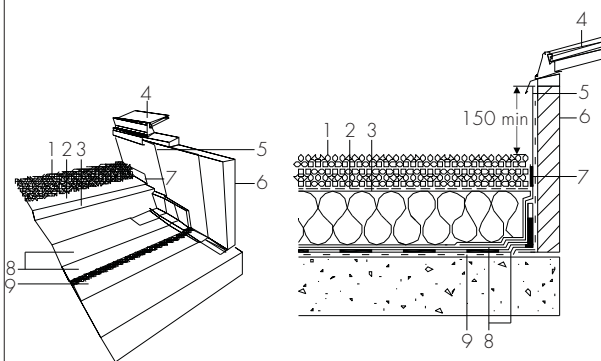
- 1 20 - 40 mm rounded aggregate ballast with no-fines installed to a minimum depth of 50 mm
- 2 water reducing layer
- 3 Hydroshield EPS insulation to achieve design U value
- 4 rainwater outlet
- 5 Hydroshield tape
- 6 structural waterproofing system
- 7 primer



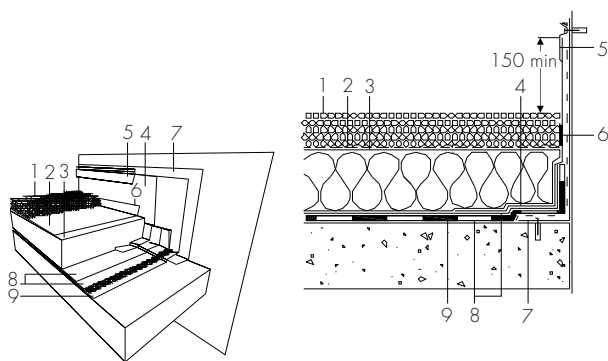
- 1 20 - 40 mm rounded aggregate ballast with no-fines installed to a minimum depth of 50 mm
- 2 water reducing layer
- 3 Hydroshield EPS insulation to achieve design U value
- 4 waterproofing detail membrane
- 5 render
- 6 Hydroshield tape
- 7 structural waterproofing system
- 8 primer



- 1 20 - 40 mm rounded aggregate ballast with no-fines installed to a minimum depth of 50 mm
- 2 water reducing layer
- 3 Hydroshield EPS insulation to achieve design U value
- 4 compund to form pitch pocket
- 5 cold pipe
- 6 Hydroshield tape
- 7 bonded retaining angle
- 8 strutral waterproofing system
- 9 primer



- 1 20 - 40 mm rounded aggregate ballast with no-fines installed to a minimum depth of 50 mm
- 2 water reducing layer
- 3 Hydroshield EPS insulation to achieve design U value
- 4 access hatch/rooflight
- 5 waterproofing detail membrane
- 6 insulated access hatch curb
- 7 Hydroshield tape
- 8 structural waterproofing system
- 9 primer



- 1 20 - 40 mm rounded aggregate ballast with no-fines installed to a minimum depth of 50 mm
- 2 water reducing layer
- 3 Hydroshield EPS insulation to achieve design U value
- 4 waterproofing detail membrane
- 5 termination bar to suit building construction
- 6 Hydroshield tape
- 7 bonded aluminium upstand
- 8 structural waterproofing system
- 9 primer

12.5 The Product is laid in an advancing front together with the water reducing layer to ensure that the ballast is adequately distributed as soon as possible to protect the system.

Procedure

12.6 In order to prevent flotation, wind uplift and UV degradation, the system must be covered with gravel ballast to a minimum thickness of 50 mm. The gravel must be washed, rounded and be nominal 20 mm to 40 mm in size.

12.7 It is essential that the ballast is placed carefully and that complete depth and cover is achieved over the entire surface of the system.

12.8 Gravel must not contain excessive fines in order to prevent clogging of gullies and outlets and to discourage organic growth.

12.9 The dead load imposed by the gravel is nominally $80 \text{ kg}\cdot\text{m}^{-2}$, therefore this must be allowed for in calculating the total acceptable load on the deck.

12.10 The ballast specification is suitable in sheltered regions, or low to medium rise building up to 10 storeys. On buildings up to 15 storeys, this specification may be used, but the perimeter must be loaded with paving. For areas of severe exposure, specialist advice should be sought to determine suitable ballast.

12.11 Paving must meet the requirements of sections 6.4 and 8.2 of this Certificate and be installed with no gaps in between.

Technical Investigations

13 Tests

A water reducing layer flow rate test was carried out in accordance with ETAG 031 : 2010 and a WUFI simulation was used to carry out an assessment of condensation risk analysis (BS EN 15026 : 2007) for the Springvale Hydroshield For Inverted Roof Insulation.

14 Investigations

Independent data relating to factory production control were examined:

- thermal conductivity
- moisture correction
- compressive strength
- bending strength.

Additional information

Springvale EPS Ltd operate a Quality Management System complying with the requirements of BS EN ISO 9001 : 2008 by the British Standards Institution Quality Assurance (Certificate No FM13871).

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 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*
- BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*
- BS 8218 : 1998 *Code of practice for mastic asphalt roofing*
- BS 8747 : 2007 *Reinforced bitumen membranes (RBMs) for roofing — Guide to selection and specification*
- BS EN 12056-3 : 2000 *Gravity Drainage Systems inside Buildings — Roof drainage, layout and calculation*
- BS EN 13163 : 2001 *Thermal insulation products for buildings — Factory made products of expanded polystyrene (EPS) — Specification*
- BS EN 13501-1 : 2007 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
- BS EN 15026 : 2007 *Hygrothermal performance of building components and building elements — Assessment of moisture transfer by numerical simulation*
- 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*
- ENV 1187 : 2002 *Test methods for external fire exposure to roofs*
- ETAG 031 : 2010 *Guideline for European Technical Approval of Inverted Roof Insulation Kits*

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 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.

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.

