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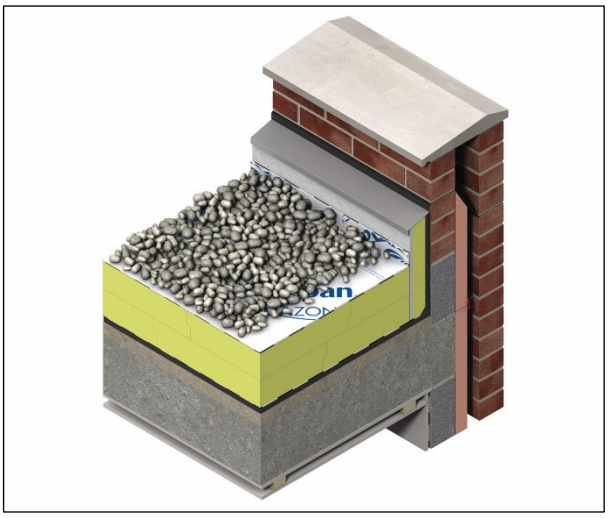
Agrément Certificate
24/7101
Product Sheet 1 Issue 1

IKO ETHERM XPS-C INSULATION

IKO ETHERM XPS-C INVERTED ROOF INSULATION

This Agrément Certificate Product Sheet(1) relates to relates to IKO Etherm XPS-C Inverted Roof Insulation, extruded polystyrene (XPS) boards for use in the inverted roof concept (above the roof waterproofing) on new and existing domestic and non-domestic untrafficked flat roofs, and terraces subject to pedestrian access only, with either zero fall or slopes between 1:80 and 1:6. The product is used in conjunction with the Aquazone filter/water-flow-reducing layer between the insulation and the ballast layer.

(1) Hereinafter referred to as 'Certificate'.



The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

The BBA has awarded this 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

Date of issue: 27 June 2024

Hardy Giesler
Chief Executive Officer

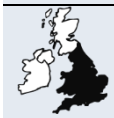
Certificate amended on 24 November 2025 to update section 1.1.2 and NHBC wording.

SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that IKO Etherm XPS-C Inverted Roof Insulation, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



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

Requirement:	**A1**	**Loading**
Comment:		The product can contribute to satisfying this Requirement. See section 1 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The product can contribute to satisfying this Requirement. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**25B**	**Nearly zero-energy requirements for new buildings**
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings (applicable to Wales only)**
Regulation:	**26C**	**Target primary energy rates for new buildings (applicable to England only)**
Regulation:	**26C**	**Energy efficiency rating (applicable to Wales only)**
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Fitness and durability of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	1.1(b)	Structure
Comment:		The product can contribute to satisfying this Standard, with reference to clause 1.1.2[(1)(2)]. See section 1 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1[(1)(2)], 3.15.3[(1)(2)], 3.15.4[(1)(2)], 3.15.5[(1)(2)] and 3.15.6[(1)(2)]. See section 3 of this Certificate.
Standard:	6.1(b)(c)(d)	Energy demand and carbon dioxide emissions
Comment:		The product can contribute to satisfying this Standard with reference to clauses 6.1.1[(1)], 6.1.2[(2)] and 6.1.6[(1)]. See section 6 of this Certificate.

Standard: Comment:	6.2	Building insulation envelope The product can contribute to satisfying this Standard, with reference to clauses 6.2.1(1)(2), 6.2.3(1), 6.2.4(2), 6.2.5(2), 6.2.6(1), 6.2.7(1), 6.2.8(2), 6.2.9(1)(2), 6.2.10(1), 6.2.11(1)(2), 6.2.12(2) and 6.2.13(1)(2). See section 6 of this Certificate.
Standard: Comment:	7.1(a)(b)	Statement of sustainability The product can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting at least a bronze level of sustainability as defined in this Standard. In addition, the product can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4(1)(2) and 7.1.6(1)(2) and 7.1.7(1)(2). See section 6 of this Certificate.
Regulation: Comment:	**12**	**Building standards - conversion** All comments given for the product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2). (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation: Comment:	**23(1)(a)(i) (iii)(b)(i)(ii)**	**Fitness of materials and workmanship** The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation: Comment:	**29**	**Condensation** The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation: Comment:	**30**	**Stability** The product can contribute to satisfying this Regulation. See section 1 of this Certificate.
Regulation: Comment:	**39(a)(i)**	**Conservation measures** The product can contribute to satisfying this Regulation. See section 6 of this Certificate.
Regulation: **Regulation:** **Regulation:** Comment:	**40(2)** **43(1)(2)** **43B**	**Target carbon dioxide emission rate** **Renovation of thermal elements** **Nearly zero-energy requirements for new buildings** The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, IKO Etherm XPS-C Inverted Roof Insulation, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs, terraces and balconies*.

The opinion of the BBA does not amount to any endorsement or approval by NHBC and does not in any way guarantee that NHBC will approve such product / system as compliant with the NHBC Technical Requirements and Standards.

Fulfilment of Requirements

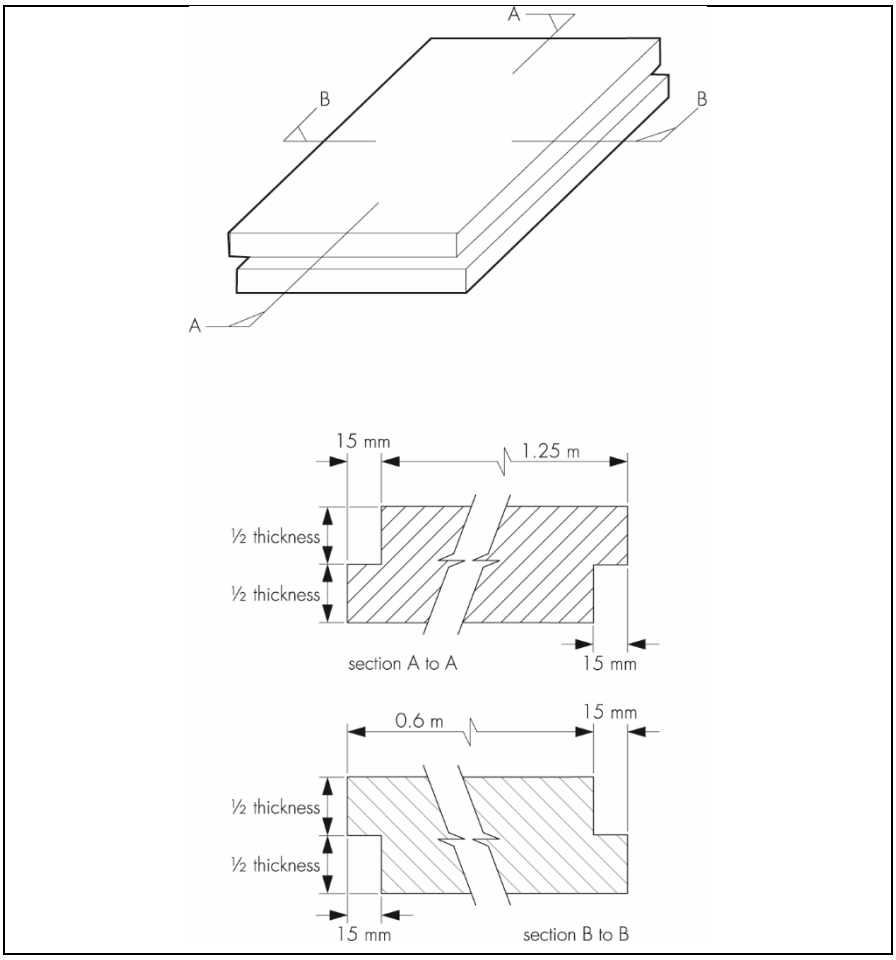
The BBA has judged IKO Etherm XPS-C Inverted Roof Insulation to be satisfactory for use as described in this Certificate. The product has been assessed as for use as thermal insulation in the inverted roof concept (above the roof waterproofing) on new and existing domestic and non-domestic untrafficked flat roofs and terraces subject to pedestrian access only.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. IKO Etherm XPS-C Inverted Roof Insulation consists of extruded polystyrene (XPS) foam boards, rebated for lap jointing (see Figure 1).

Figure 1 IKO Etherm XPS-C Inverted Roof Insulation boards



The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics of IKO Etherm XPS-C Inverted Roof Insulation

Characteristic (unit)	Value
Work size – length x width (mm)	1250 x 600
Overall size – length and width (mm)	1265 x 615
Thickness	30, 40, 50, 60, 80, 100, 120, 150
Edge Detail	Rebated on all 4 sides (15 mm x half board thickness)
Colour	Light green

Ancillary items

The Aquazone filter/water-flow-reducing layer is used as both a filter layer and water-flow-reducing layer between the insulation and the roof ballast layer and is essential to use with the product and has been assessed with the product. The nominal characteristics of the Aquazone filter/water-flow-reducing layer are shown in Table 2.

Table 2 Nominal characteristics of the Aquazone filter/water-flow-reducing layer

Characteristic (unit)	Value
Material type (vapour permeable membrane)	Non-woven spun-bonded polyethylene (HDPE)
Roll size (m)	100 x 3
Membrane thickness (mm)	0.17
Mass per unit area ($g \cdot m^{-2}$)	60
Lap joints (mm) — unsealed	300

The Certificate holder recommends the following ancillary items for use with the product, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- gravel ballast
- paving ballast of minimum 40 mm thickness
- proprietary paving support/spacer pads
- separating or cushion layers, if required
- rainwater outlet grilles
- dual-level rainwater outlets
- insulation upstand boards
- flashings and skirtings.

Applications

The product is suitable for use as thermal insulation in the inverted roof concept (above the roof waterproofing) on new and existing domestic and non-domestic untrafficked flat roofs and terraces subject to pedestrian access only, with either a zero fall or slopes between 1:80 and 1:6, on a suitably designed timber, concrete or metal structural deck and appropriate fully supported waterproofing system.

The product must always be overlaid with the Aquazone filter/water-flow-reducing layer; a gravel ballast or paving slab finish is then applied on top.

Definitions for products and applications inspected

The following terms are defined for the purpose of this Certificate as:

- flat roof — a roof having a minimum finished fall of 1:80
- zero fall roof — a roof having a minimum finished fall between 0 and 1:80
- pitched roof — a roof having a fall in excess of 1:6
- limited access roof — a roof subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc
- pedestrian access roof — a roof subjected to increased access to that defined for a limited access roof, but not open to vehicular traffic.

Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Data were assessed for the following characteristics.

1.1 Strength and stability

1.1.1 The product was tested for compressive strength and the result is given in Table 3.

Table 3 Compressive stress at 10% deformation

Product assessed	Assessment method	Requirement	Result
IKO Etherm XPS-C Inverted Roof Insulation	BS EN 826 : 2013	Value achieved	≥ 300 kPa

1.1.2 On the basis of data assessed, the product has adequate resistance to the loads associated with light maintenance traffic on roofs, and to pedestrian foot traffic on roof terraces.

1.1.3 If loads in excess of those defined in section 1.1.2 are anticipated, such as the installation of heavy equipment, the ability of the system to sustain such loads must be assessed by a suitably experienced and competent individual. The use of the system under these circumstances is outside the scope of this Certificate.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The product was tested for reaction to fire and the classification is given in Table 4.

Table 4 Reaction to fire classification

Product assessed	Assessment method	Requirement	Result[(1)]
IKO Etherm XPS-C Inverted Roof Insulation	BS EN 13501-1 : 2018	Value achieved	F

(1) Test report no H.E-027e/20 (24 Feb 2020), issued by FIW Munchen, available from the Certificate holder on request.

2.1.2 When ballasted with a minimum 50 mm depth of aggregate or fully supported cast stone or mineral slabs of at least 40 mm thickness, a roof will be unrestricted with regard to proximity to a relevant boundary by the documents supporting the national Building Regulations.

2.1.3 The classification and permissible areas of use of other specifications must be confirmed in accordance with the documents supporting the national Building Regulations.

2.1.4 Restrictions may apply where the product is laid over a compartment wall.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Water vapour permeability

3.1.1 The product was tested for water vapour resistivity and the results are given in Table 5.

Table 5 Water vapour resistivity

Product assessed	Assessment method	Requirement	Result
IKO Etherm XPS-C Inverted Roof Insulation (XPS)	BS EN 12086 : 1997	Value achieved	400 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$

3.1.2 For the purposes of assessing the risk of condensation, the water vapour resistivity value may be taken as stated in Table 5.

3.2 Resistance to moisture

3.2.1 Long term water absorption by diffusion for the XPS insulation is given in Table 6.

Table 6 Long term water absorption by diffusion

Product assessed	Assessment method	Requirement	Result
IKO Etherm XPS-C Inverted Roof Insulation (XPS)	BS EN 13164 : 2012	WD(V)2 ≤ 2 %	Pass

3.2.2 The water absorption result is used to determine the design thermal conductivity value (λ_U) for the XPS insulation as given in Table 8.

3.3 Weathertightness

3.3.1 The Aquazone filter/water-flow-reducing layer was tested for watertightness and the results is given in Table 7.

Table 7 Watertightness tests

Product assessed	Assessment method	Requirement	Result
Aquazone filter/water-flow-reducing layer	Watertightness to BS EN 1928 : 2000 and BS EN 13859-1 : 2010	Declared value Class W1 No leakage after 2 hours exposure to 200 mm water column	Pass
	Hydrostatic head to BS EN 20811 : 1992	Declared value 1.6 m	Pass

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Data were assessed for the following characteristics.

6.1 Thermal conductivity

6.1.1 The product was tested for thermal conductivity and the result is given in Table 8.

Table 8 Thermal conductivity

Product assessed	Insulation thickness	Assessment method	Requirement	Result
IKO Etherm XPS-C Inverted Roof Insulation	30 to 150 mm	BS EN 13164 : 2012	Design value (moisture corrected) (λ_U)[(1)]	0.036 $W \cdot m^{-1} \cdot K^{-1}$

(1) The design thermal conductivity value (λ_U) for the insulation is calculated using the water absorption result in Table 6.

6.2 Conservation of fuel and power

6.2.1 Calculations of the thermal transmittance (U value) of a specific roof construction must be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2019, using the design thermal conductivity value (λ_U) given in Table 8.

6.2.2 Rainfall reaching the roof waterproofing membrane 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 BS EN ISO 6946 : 2017, Annex F.4, as follows (see also BBA Information Sheet No 4) :

$\Delta U_r = pf\chi (R_1/R_T)^2$ where:

ΔU_r = correction to the calculated thermal transmittance of the roof element ($W \cdot m^{-2} \cdot K^{-1}$)
p = average rate of precipitation during the heating season ($mm \cdot day^{-1}$)
f = drainage factor giving the fraction of p reaching the waterproof membrane
χ = factor for increased heat loss caused by rainwater flowing on the membrane ($0.04\ W \cdot day \cdot m^{-2} \cdot K^{-1} \cdot mm^{-1}$)
R_1 = thermal resistance of the layer of insulation above the waterproofing membrane ($m^2 \cdot K \cdot W^{-1}$)
R_T = total thermal resistance of the construction before application of the correction ($m^2 \cdot K \cdot W^{-1}$)
$f\chi$ = 0.001 (system incorporates the Aquazone filter/water-flow-reducing layer).

6.2.3 The U value of a completed roof will depend on the insulation thickness, type of substrate and internal finish. Example U-values are given in Table 9.

Table 9 Example U values(1)

Required U value ($W \cdot m^{-2} \cdot K^{-1}$)	IKO Etherm XPS-C XPS Inverted Roof Insulation, thickness required(2) (mm)	
	p(3) = 3 ($mm \cdot day^{-1}$)	p(3) = 8 ($mm \cdot day^{-1}$)
0.09	150 + 150 +100	150 + 150 + 120
0.11	150 + 120 + 40	150 + 150 + 30
0.12	150 + 150	150 + 150
0.13	150 + 110	150 + 130
0.15	150 + 80	120 + 120
0.16	150 + 60	150 + 70
0.18	120 + 70	100 + 100
0.20	100 + 70	150 + 30

(1) Deck taken as 200 mm dense reinforced concrete (λ = 2.5 $W \cdot m^{-1} \cdot K^{-1}$) with a 10 mm bitumen ($\lambda$ = 0.23 $W \cdot m^{-1} \cdot K^{-1}$) waterproofing layer.
(2) Thinnest available insulation thickness or thickness combination to achieve the required U value. Thickest board as bottom layer when double/triple layer used.
(3) Values for p taken as examples of best to worst case for all UK locations, with a $f \cdot \chi$ value of 0.001 $W \cdot day \cdot m^{-2} \cdot K^{-1} \cdot mm^{-1}$.

6.2.4 The product can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

7 Sustainable use of natural resources

Not applicable.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the product were assessed.

8.2 Specific test data were assessed as given in Table 10.

Table 10 Durability

Product assessed	Assessment method	Requirement	Declared level/result
IKO Etherm XPS-C Inverted Roof Insulation	Dimensional stability to BS EN 1604 : 1996 (70°C and 90-100% RH for 48 hours)	Declared value	DS (70,90)
	Deformation under specified compressive load and temperature conditions to BS EN 1605 : 2013 (40 kPa at 70°C for 168 hours)	≤ 5%	Pass
	Freeze/thaw resistance to EN 12091 : 2013 after-long term water diffusion test	Reduction in compressive stress at 10% deformation of redried specimens after freeze thaw test ≤ 10%	Pass

8.3 Service life

Under normal service conditions, the product will have a life of at least 25 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Concrete, metal or timber roofs must be designed in accordance with the relevant provisions of BS 6229 : 2018, BS 8217 : 2005 and BS 8218 : 1998, in particular to accommodate the weight of the ballast layer.

9.1.3 Separation or cushion layers between the insulation boards and the roof waterproofing may be needed in some circumstances (see section 9.1.10).

9.1.4 Care must be taken to ensure that upgraded roofs are capable of carrying the increased load and depth of the installed product. The structural strength and deformation of both the roof structure and the inverted roof insulation panels must be assessed by a suitably experienced and competent individual, to resist actions due to the combination of the dead load imposed by the paving and gravel ballast finish, and the imposed load from foot traffic, snow and the possible weight of rainwater (should the roof outlet[s] become blocked).

9.1.5 Decks must be covered with one or more of the following roof waterproofing specifications:

- built-up specifications using reinforced bitumen membranes to BS 8747 : 2007 installed in accordance with BS 8217 : 2005
- mastic asphalt laid in accordance with BS 8218 : 1998
- other waterproofing systems which are the subject of a current BBA Certificate, and laid in accordance with, and within the limitations imposed by, that Certificate.

9.1.6 It is essential that roof falls and drainage paths are correctly designed to avoid ponding (and the subsequent risk of silt build-up) and stresses in freezing conditions, and to reduce water entry in the event of a failure in the waterproofing layer.

9.1.7 The roof must be designed with adequate falls unless the roof waterproofing system has been specifically designed and covered by a valid BBA Certificate for use in a zero fall roof application. For zero fall roofs it is particularly important to identify the correct drainage points, to ensure that drainage is sufficient and effective. Reference must be made to the appropriate clauses of the LRWA Guidance Note No. 7 : 2012 *Specifier Guidance for Flat Roof Falls*, which generally requires surface drainage falls in most situations.

9.1.8 Dual-level roof drainage must be provided in accordance with BS 6229 : 2018 and BS EN 12056-3 : 2000 to drain water off at the level of the Aquazone filter/water-flow-reducing layer and also at the level of the roof waterproofing.

9.1.9 Drainage points must be located at the lowest point of the roof, to facilitate the effective removal of rainwater. Care is needed to identify these locations. For example, precast concrete decks will deflect between spans, and mid-span may be the lowest point of the roof rather than roof edges or column supports.

9.1.10 Where there is a risk from plasticiser migration or other contaminants from the roof waterproofing (such as PVC single-ply membranes), a suitable plastic fibre or similar isolating sheet must be interposed between the roof waterproofing and the insulation boards. For loose laid single-layer roof waterproofing membranes, a cushion layer must be interposed.

9.1.11 Aquazone filter/water-flow-reducing layer must be installed above the product, with minimum 300 mm laps and covered with a gravel ballast or paving finish.

9.1.12 The ballasted roof finish may be either gravel ballast or paving, which must be assessed by a suitably experienced and competent individual according to region exposure and building height. In addition, the dead load imposed by the finish must be allowed for in calculating the total acceptable load on the deck. Care must be taken to ensure that upgraded roofs are capable of carrying the increased load and depth of the installed product. Ballast must not be stacked in one place on the roof unless the roof is capable of supporting it.

9.1.13 Gravel ballast must be washed, rounded and 16 to 32 mm in size (nominal), and laid to a minimum thickness of 50 mm. The minimum size of ballast depends on the wind loads and parapet height to prevent wind scour of the ballast. The ballast must be installed in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex.

9.1.14 Paving finish ballast must comprise a minimum 40 mm thickness of cast stone, mineral or pressed concrete paving slabs. Paving slabs can be either laid fully supported, or may be supported using proprietary support/spacer pads, in accordance with the Certificate holder's recommendations.

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

9.1.16 Roofs will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002.

9.1.17 In England and Wales, roofs will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.35 $W \cdot m^{-2} \cdot K^{-1}$ at any point and the junctions with walls are designed in accordance with section 9.1.15.

9.1.18 In Scotland, roofs will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point. Guidance may be obtained from BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.15 of this Certificate.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A of this Certificate.

9.2.3 It is essential to establish that the roof waterproofing has been installed correctly and that it is weathertight, clean and free from any extraneous matter. Every joint between sheets, flashing and other details must be checked to ensure that the roof covering is suitable for an inverted roof specification.

9.2.4 IKO Etherm XPS-C Inverted Roof Insulation can be installed as a single layer, or multi-layer (double or triple layers) as required. When using multiple layers the insulation board joints must be staggered/offset. The Certificate holder must be contacted for further advice on multi-layering, but such advice is outside the scope of this Certificate.

9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the product must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the product in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed, and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.2.1 The product is confined and has suitable durability and so does not require maintenance.

9.4.2.2 The other components of the roofing system should be maintained in accordance with conventional good practice.

10 Manufacture

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

11 Delivery and site handling

11.1 The Certificate holder stated that the product is delivered to site in polythene shrink-wrapped packs incorporating a label with the Certificate holder's name, product description and characteristics, and the BBA logo incorporating the number of this Certificate.

11.2 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 The product must be stored flat, off the ground on a clean, level surface, and under cover or protected with opaque polythene, to protect it from high winds and prolonged exposure to sunlight. Where possible, packs should be stored inside. If outside, the boards must be raised above ground level.

11.2.2 Care must be exercised to avoid crushing the edges or corners. If damaged, the product must be discarded.

11.2.3 The product must not be exposed to open flame or other ignition sources, or to solvents or other chemicals.

† ANNEX A – SUPPLEMENTARY INFORMATION

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

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

UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the product in accordance with Designated Standard EN 13164 : 2012.

Management Systems Certification for production

The management system of the insulation manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by CIBSE Certification Ltd (Certificate 0001QMS-1).

Additional information on installation

Installation must be in accordance with the Certificate holder's instructions and this Certificate.

A.1 The product can be cut using a fine-toothed saw, sharp knife or a hot wire cutter.

A.2 IKO Etherm XPS-C Inverted Roof Insulation is laid in a brick bond pattern; it is essential that all joints between the boards are tight and that no gaps exist where they meet rooflights, edge details and other services which perforate the roof deck.

A.3 When the product is to be placed over a loose-laid roof covering, it must be installed and ballasted as soon as possible to protect the covering from the effects of wind uplift (see sections 9.1.11 to 9.1.14) and installers must take care not to damage the existing roof waterproofing.

A.4 IKO Etherm XPS-C Inverted Roof Insulation may be installed in any weather but, due to its size, care is required in high winds. Installers must not carry it near to parapets or apertures in the deck and once placed, the product must be covered with the Aquazone filter/water-flow-reducing layer and ballasted as soon as possible.

A.5 The ballast loading layer should be installed in accordance with BS 6399-2 : 1997, BS EN 1991-1-4 : 2005, BRE Digest 295 : 1985 and BRE Digest 311 : 1986.

A.6 The ballast loading layer must be applied as work progresses to protect the insulation and the filter/water-control layer from the effects of wind uplift, solar degradation and foot traffic.

Upgrading roofs

A.7 In existing roofs , the requirements of sections A.1 to A.6 also apply. In addition, the existing roofing and substructure must be examined for degradation and, where necessary, repairs effected. Particular consideration should be given to the condensation risk that the existing roof structure may present.

A.8 Where, for example, parapets, details and services have insufficient height to accommodate the increased depth of insulation/protection, a minimum of 150 mm from the top of the gravel to the top of the skirtings must be provided).

A.9 If upgrading involves laying the product on existing inverted roof insulation, the advice of the Certificate holder should be sought, but such advice is outside of the scope of this Certificate.

A.10 Rainwater outlets may need to be modified or replaced to suit, eg by the installation of gravel guards.

Procedure

A.11 Single-layer roofing must be the subject of very close scrutiny, and the inspection must include an examination for perforation and for the likelihood of subsequent perforation from beneath (by, for example, uneven decks and protruding nail heads).

A.12 The Aquazone filter/water-flow-reducing layer should be loose-laid over the insulation, at right angles to the slope, with 300 mm unsealed lap joints overlapping in the downward direction of the flat roof slope. At upstands and penetrations, the Aquazone filter/water-flow-reducing layer must be turned up to finish level with the top surface of the ballast layer (either gravel ballast or paving slabs) and turned down into drainage outlets.

A.13 The ballast layer (comprising either a gravel ballast or paving slabs) must then be laid over the Aquazone filter/water-flow-reducing layer as soon as possible, to prevent flotation, wind uplift, UV degradation and damage from foot traffic.

Gravel ballast finish

A.14 The gravel ballast layer must be carefully placed directly over the Aquazone filter/water-flow-reducing layer to ensure complete depth and cover is achieved over the entire surface of the product.

A.15 Gravel must not contain excessive fines in order to prevent clogging of gullies and outlets and to discourage organic growth.

Paving slab finish

A.16 Standard pressed concrete, cast stone or mineral paving slabs of at least 40 mm thickness (see sections 2.1.3 and 9.1.14) must be carefully placed directly over the Aquazone filter/water-flow-reducing layer to ensure complete cover is achieved over the entire surface of the product. Paving slabs can either be laid fully supported, or may be supported using proprietary support/spacer pads.

A.17 Typical construction details are given in Figures 2 to 4.

Figure 2 Typical installation/parapet detail — gravel ballast finish

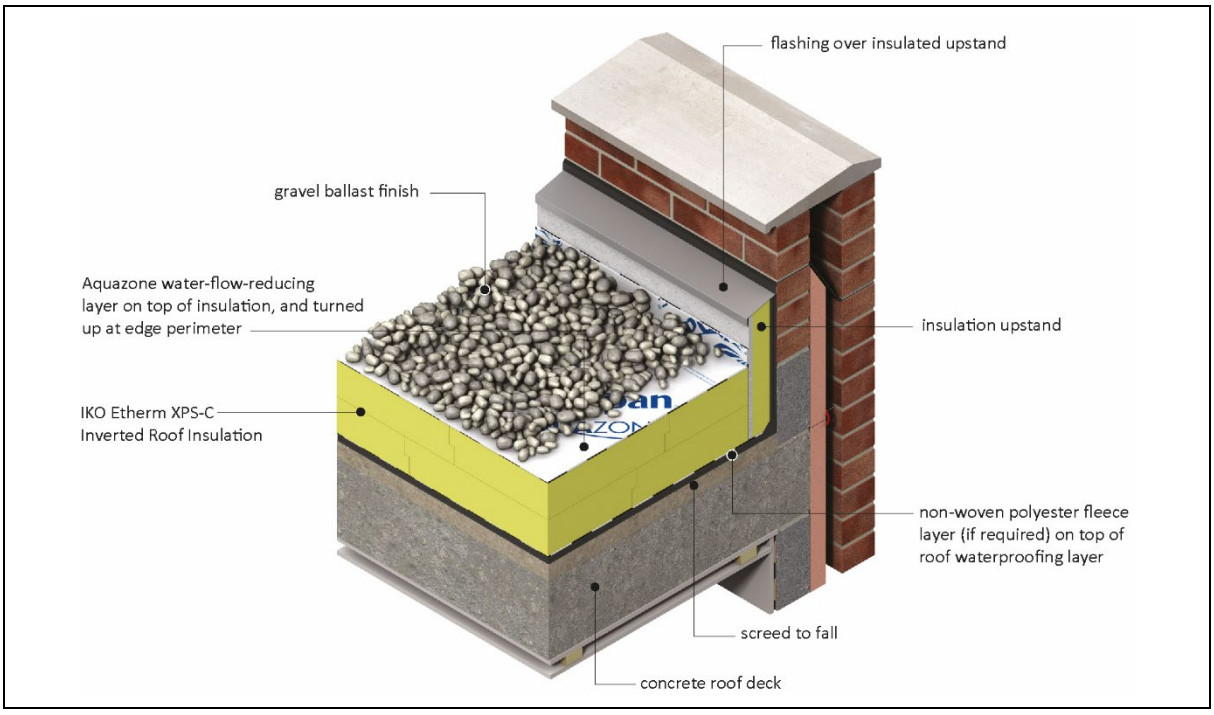


Figure 3 Parapet detail — paving finish

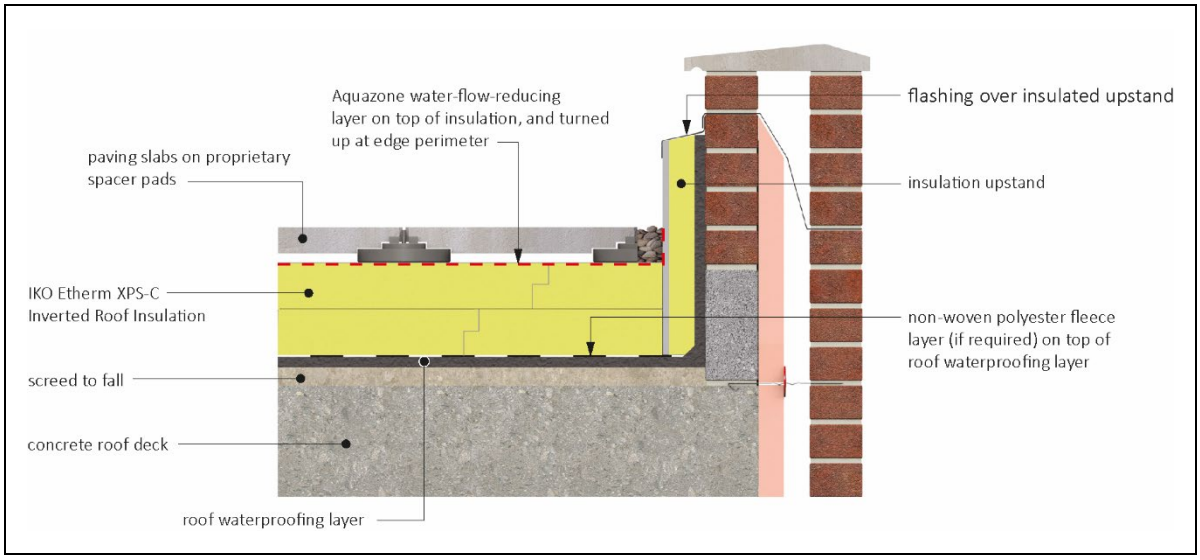
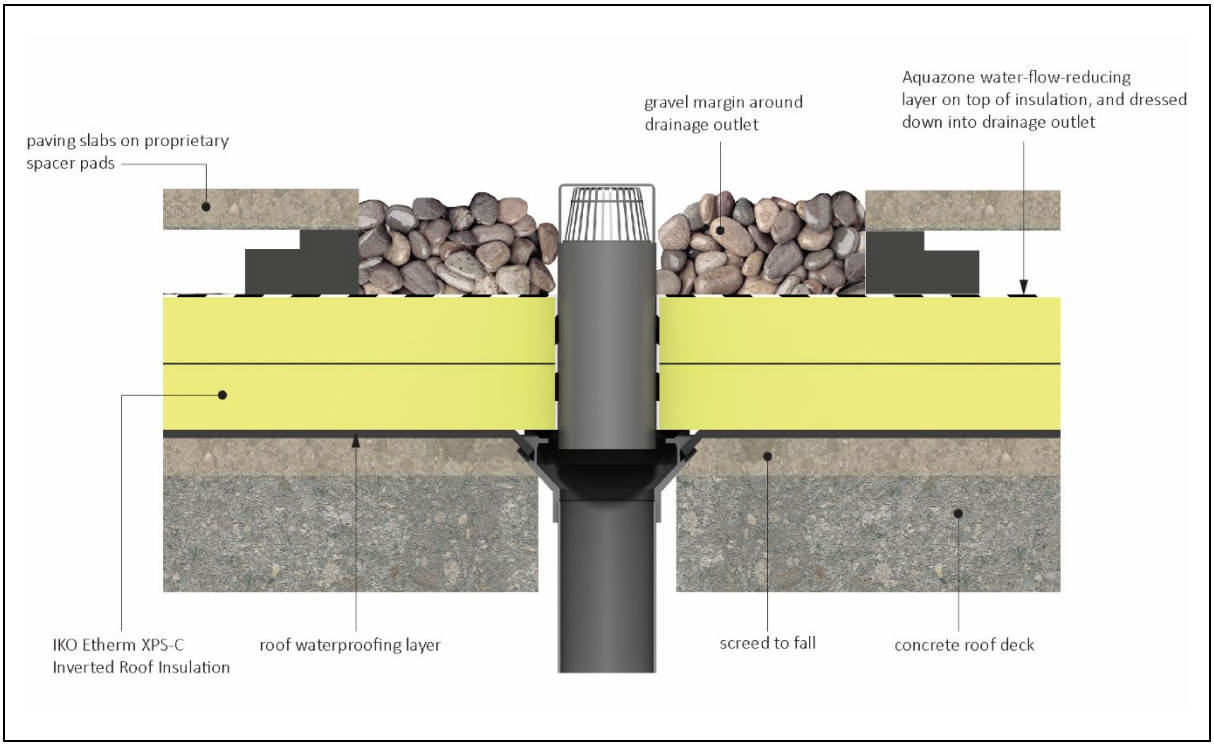


Figure 4 Water outlet detail — paving finish



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- are reviewed by the BBA as and when it considers appropriate.

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