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Agrément Certificate

18/5580

Product Sheet 1 Issue 2

IKO TOTAL ROOFING SYSTEMS

IKO ULTRA STICK WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the IKO Ultra Stick Waterproofing System, comprising polymer-modified, self-adhesive bitumen waterproofing membranes, insulation boards and an air and vapour control layer (AVCL), for use on flat and pitched roofs with limited access.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

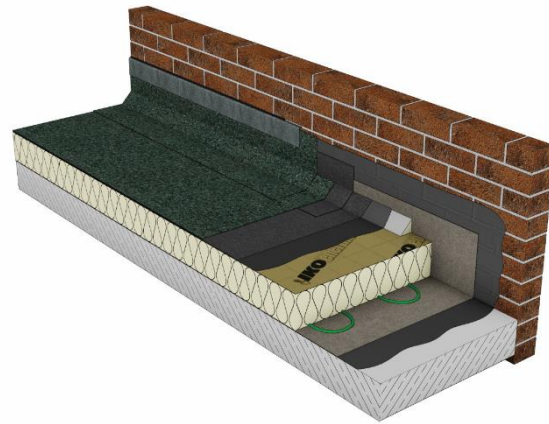
- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

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 system described herein. This system 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 Second issue: 2 October 2024

Hardy Giesler

Originally certified on 29 October 2018

Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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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 the IKO Ultra Stick Waterproofing System, 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 system can contribute to satisfying this Requirement. See section 1 of this Certificate.
Requirement:	B3(2)	Internal fire spread (structure)
Comment:		The system may be restricted by this Requirement in some circumstances. See section 2 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The system is restricted by this Requirement in some circumstances. See section 2 of this Certificate.
Requirement:	B4(2)	External fire spread
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted by this Requirement. See section 2 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The system will enable a roof to satisfy this Requirement. See section 3 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The system can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The system can contribute to satisfying this Requirement; however, compensating fabric measures may be required. See section 6 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	25B	Nearly zero-energy requirements for new buildings
Regulation:	26	CO₂ emission rates for new buildings
Regulation:	26A	Fabric energy efficiency rates for new dwellings (applicable to England only)
Regulation:	26A	Primary energy consumption rates for new buildings (applicable to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (applicable to Wales only)
Regulation:	26C	Target primary energy rates for new buildings (applicable to England only)
Regulation:	26C	Energy efficiency rating (applicable to Wales only)
Comment:		The system can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	8(3)	Fitness and durability of materials and workmanship
Comment:		The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	9	Building standards – construction
Standard:	1.1(b)	Structure
Comment:		The system can contribute to satisfying this Standard, with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See section 1 of this Certificate.
Standard:	2.1	Compartmentation
Standard:	2.2	Separation
Comment:		The system may be restricted under clauses 2.1.15 ⁽²⁾ , 2.2.7 ⁽²⁾ and 2.2.10 ⁽¹⁾ of these Standards. See section 2 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The system is restricted under clauses 2.6.4 ⁽¹⁾⁽²⁾ and 2.7.1 ⁽¹⁾⁽²⁾ of these Standards in some circumstances. See section 2 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted by this Standard, with reference to clause 2.8.1 ⁽¹⁾⁽²⁾ . See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system will enable a roof to satisfy this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.
Standard:	3.15	Condensation
Comment:		The system 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⁾ , 3.15.6 ⁽¹⁾⁽²⁾ and 3.15.7 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.
Standard:	6.1(b)(c)	Energy demand
Comment:		The system can contribute to satisfying this Standard, with reference to clauses 6.1.1 ⁽¹⁾ and 6.1.2 ⁽²⁾ ; however, compensating fabric/service measures may be required. See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The system can contribute to satisfying this Standard, with reference to clauses 6.2.1 ⁽¹⁾⁽²⁾ , 6.2.3 ⁽¹⁾ , 6.2.4 ⁽²⁾ , 6.2.6 ⁽¹⁾ , 6.2.7 ⁽¹⁾⁽²⁾ , 6.2.8 ⁽¹⁾⁽²⁾ , 6.2.9 ⁽¹⁾⁽²⁾ , 6.2.10 ⁽¹⁾⁽²⁾ and 6.2.12 ⁽¹⁾ ; however, compensating fabric measures may be required. See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The system 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 system can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.2 ⁽¹⁾ , 7.1.4 ⁽¹⁾ , 7.1.6 ⁽¹⁾ and 7.1.7 ⁽¹⁾ . See section 6 of this Certificate.

Regulation:	12	Building standards – conversion
Comment:		All comments given for the system 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:	23(1)(a)(i)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)(ii)	The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	23(2)	Fitness of materials and workmanship
Comment:		The system is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The system will enable a roof to satisfy this Regulation. See section 3 of this Certificate.
Regulation:	29	Condensation
Comment:		The system can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	30	Stability
Comment:		The system can contribute to satisfying this Regulation. See section 1 of this Certificate.
Regulation:	35(2)	Internal fire spread – structure
Comment:		The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Comment:		The system can contribute to satisfying this Regulation; however, compensating fabric measures may be required. See section 6 of this Certificate
Regulation:	40(2)	Target carbon dioxide emission rate
Regulation:	43(1)(2)	Renovation of thermal elements
Regulation:	43B	Nearly zero-energy requirements for new buildings
Comment:		The system can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, the IKO Ultra Stick Waterproofing System, 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*.

In addition, in the opinion of the BBA, the system, when installed and used in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards for Conversions and Renovations*, taking account of other relevant guidance within the chapter and the suitability of the substrate to receive the systems.

The *NHBC Standards* do not cover the refurbishment of existing roofs.

Fulfilment of Requirements

The BBA has judged the IKO Ultra Stick Waterproofing System to be satisfactory for use as described in this Certificate. The system has been assessed for use as a waterproofing system on flat and pitched roofs with limited access.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. The IKO Ultra Stick Waterproofing System consists of:

- IKO Ultra Stick Cap Sheet — a styrene-butadiene-styrene (SBS)-modified bitumen self-adhesive membrane, with a graphite-treated, non-woven polyester reinforcement ($230 \text{ g}\cdot\text{m}^{-2}$), a slate finish on the upper surface and a release film on both the lower surface and the selvedge area on the upper surface. The slate upper surface is available in black, brown or green
- IKO Ultra T-F Detailing Underlay — an SBS-modified bitumen self-adhesive membrane, with a non-woven polyester reinforcement ($175 \text{ g}\cdot\text{m}^{-2}$), a sand finish on the upper surface and a release film on both the lower surface and the selvedge area on the upper surface
- IKO Ultra T-F Underlay — an SBS-modified bitumen partially bonded self-adhesive membrane, with a non-woven polyester reinforcement ($175 \text{ g}\cdot\text{m}^{-2}$), a sand finish on the upper surface and a release film on both the lower surface and the selvedge area on the upper surface
- IKO Enertherm Gold Insulation Boards — rigid polyisocyanurate (PIR) insulation boards with composite foil-facings on both sides
- IKO Ultra S-A Air and Vapour Control Layer — a self-adhesive membrane reinforced with a non-woven polyester reinforcement ($175 \text{ g}\cdot\text{m}^{-2}$), aluminium foil, selvedge and a release film on the lower surface.

The system membranes have the nominal characteristics given in Table 1

Table 1 Nominal characteristics of the system membranes

Characteristic (unit)	Membrane			
	IKO Ultra Stick Cap Sheet	IKO Ultra T-F Detailing Underlay	IKO Ultra T-F Underlay	IKO Ultra S-A Air & Vapour Control Layer
Length (m)	8	16	16	15
Width (m)	1	1	1	1
Mass per unit area ($\text{kg}\cdot\text{m}^{-2}$)	3.813	2.50	2.50	2.40
Roll weight (kg)	30.504	40.00	40.00	36.00

The insulation boards have the nominal characteristics given in Table 2

Table 2 Nominal characteristics — IKO Enertherm Gold Insulation Boards

Characteristic (unit)	Value
Length (mm)	2400, 1200
Width (mm)	1200
Thickness (mm)	30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 132, 140, 150, 160, 180 and 200

Ancillary Items

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

- IKOpro Bonding Agent — a solvent-based primer for use on synthetic rubber and resins
- IKOpro Sprayfast MPP — a solvent-based primer, in spray form, for use on synthetic rubber and resins
- IKOpro Sprayfast IBA — a single component spray foam for use in bonding PIR and mineral stone wool insulation.

Definitions for products and applications inspected

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

- limited access roof — a roof subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc
- flat roof — a roof having a minimum finished fall of 1:80
- pitched roof — a roof having a fall in excess of 1:6.

Product assessment – key factors

The system was assessed for the following key factors, and the outcome of the assessment 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 Wind loading

1.1.1 The result of a wind loading test is given in Table 3.

Table 3 Wind loading

Product assessed	Assessment method	Requirement	Result
Substrate – 18 mm OSB ⁽¹⁾	Wind uplift	Value achieved	5.5 kPa
IKO Pro S-A bonding agent ⁽¹⁾	to MOAT 64 : 4.3.2 : 2001		
IKO Ultra S-A AVCL			
IKO Pro PU insulation adhesive ⁽¹⁾			
IKO Enertherm Gold PIR Insulation			
IKO Ultra T-F Underlay			
IKO Ultra Stick Cap Sheet			

(1) These components are outside the scope of this Certificate.

1.1.2 On the basis of data assessed, the insulation boards, when properly installed on suitable flat roof decks, can adequately transfer negative and positive (suction and pressure) wind loads to the roof deck.

1.2 Behaviour under loading

1.2.1 The result of a compressive strength test is given in Table 4

Table 4 Compressive strength

Product assessed	Assessment method	Requirement	Result
IKO Enertherm Gold Insulation Boards	Compressive strength at 10% deflection to BS EN 826 : 2013	Declared value ≥ 175 kPa	Pass

1.2.2 The mechanical properties of the system membranes were assessed using test data from representative related products.

1.2.3 The insulation boards have not been assessed for use with permanent distributed or concentrated loads, such as air conditioning units, mechanical plants, water tanks, etc. Such loads must be supported directly on the roof construction or design support system.

1.2.4 When profiled decking is used, boards will be needed to span ribs. Maximum permissible spans between ribs for various board thicknesses are shown in Table 5.

Table 5 Maximum clear span

Maximum clear span (mm)	Minimum board thickness (mm)
≤ 75	25
76 – 100	30
101 – 125	35
126 – 150	40
151 – 175	45
176 – 200	50
201 – 225	55
226 – 250	60

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 External fire spread

2.1.1 When tested to DD CEN/TS 1187 : 2012, Test 4 and classified to EN 13501-5 : 2016, the construction given in Table 6 of this Certificate achieved $B_{ROOF}(t4)$ for slopes below 10° .

Table 6 Fire test results

System	System ⁽¹⁾
Substrate	18 mm orientated strand board (OSB)3 substrate ⁽²⁾
Primer	IKOpro Bonding Agent ⁽²⁾
AVCL	IKO Ultra S-A AVCL
Adhesive	IKOpro High Performance polyurethane (PU) insulation adhesive ⁽²⁾
Insulation	IKO Enertherm Gold Insulation (50 to 240 mm) in single and double layers
Primer	IKOpro Bonding Agent ⁽²⁾
Underlay	IKO Ultra T-F Underlay
Cap sheet	IKO Ultra Stick

(1) Fire test/classification reports, reference 22771A, 22771B, 22771C 22771D and 22771E, conducted by Warrington Fire. Reports available from the Certificate holder on request.

(2) These components are outside the scope of this Certificate.

2.1.2 On the basis of data assessed, the constructions listed in Table 6 will be unrestricted by the documents supporting the national Building Regulations with respect to proximity to a relevant boundary. Restrictions may apply at junctions with compartment walls.

2.1.3 A roof incorporating the system will also be unrestricted under the national Building Regulations, with respect to a relevant boundary, when used in protected specifications including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC.

2.1.4 In Wales and Northern Ireland, when used on flat roofs using a substrate designated in the supporting documents with the surface finishes listed below, the roof is also deemed to be unrestricted with respect to a relevant boundary:

- bitumen-bedded stone chippings covering the whole surface to a depth of not less than 12.5 mm
- bitumen-bedded tiles of a non-combustible material
- sand and cement screed
- macadam.

2.1.5 The classification and permissible areas of use of other specifications must be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

2.2 Reaction to fire

2.2.1 The Certificate holder has not declared a reaction to fire classification to EN 13501-1 : 2018 for the system.

2.2.2 The system will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.2.3 In England, the system, when used in pitches greater than 70°, excluding upstands, must not be used less than 1 m from a relevant boundary, or on residential buildings more than 11 m in height or on other buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.4 In Wales, the system, when used in pitches greater than 70°, excluding upstands, must not be used less than 1 m from a relevant boundary, or on buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.5 In Northern Ireland and Scotland, for systems used on walls or on roofs with pitches greater than 70°, excluding upstands, that do not achieve the minimum Class E reaction to fire classification to BS EN 13501-1 : 2018, designers must seek guidance on the proposed use of the system from the relevant Building Control Body.

2.3 Resistance to fire

Where the roof forms a junction with the compartment walls, the junction must maintain the required period of fire resistance.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

3.1.1 Results of a weathertightness test is given in Table 7.

Table 7 Weathertightness

System assessed	Assessment method	Requirement	Result
IKO Ultra S-A Air and Vapour Control Layer on primed concrete	Peel from substrate to MOAT 64 : 4.3.3 : 2001	25 N·(50 mm) ⁻¹	Pass

3.1.2 The weathertightness of the membranes was assessed using test data from representative related products.

3.1.3 On the basis of data assessed, the system, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of a building and so satisfy the requirements of the national Building Regulations.

3.2 Condensation

3.2.1 Water vapour resistivity/resistance values are given in Table 8.

Table 8 Water vapour resistivity/resistance

Product assessed	Assessment method	vapour resistivity/resistance values
IKO Ultra S-A Air and Vapour Control Layer	BS EN ISO 10456 : 2007	12180 MN·s·g ⁻¹
IKO Enertherm Gold foil facing	BS EN ISO 10456 : 2007	1000 MN·s·g ⁻¹
60 mm IKO Enertherm Gold insulation Board (Core)	BS EN 12086 : 2013	183 MN·s·gm ⁻¹
IKO Ultra T-F Underlay	BS EN ISO 10456 : 2007	750 MN·s·g ⁻¹
IKO Ultra Stick Cap Sheet	BS EN ISO 10456 : 2007	1,000 MN·s·g ⁻¹

3.2.2 An assessment of the risk of interstitial condensation for the specific construction must be carried out in accordance with BS EN ISO 13788 : 2012, using the water vapour resistance and water vapour resistivity values as shown in Table 8. If a risk of condensation is identified, then an assessment must also be carried out to BS EN 15026 : 2023.

3.3 Resistance to mechanical damage

3.3.1 The mechanical properties of the system components were assessed using test data from representative related products.

3.3.2 On the basis of data assessed, the system can accept, without damage, the foot traffic and light concentrated loads associated with installation and maintenance and the effects of minor movement likely to occur in practice while remaining weathertight.

3.3.3 Where traffic in excess of the examples given in section 3.2.2 is envisaged, such as for maintenance of lift equipment, a walkway must be provided (for example, using concrete slabs supported on bearing pads). Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads.

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

IKO Enertherm Gold Insulation Boards were tested for thermal conductivity and the results are given in Table 9.

Table 9 Thermal conductivity (λ_D values)

Product assessed	Thickness (mm)	Assessment method	Requirement	Result (W·m ⁻¹ ·K ⁻¹)
IKO Enertherm Gold Insulation Boards	40	to EN 12667 : 2001	Declared value (λ_D)	0.022
	60			0.022
	80			0.022
	140			0.022

6.2 Thermal performance

6.2.1 The U value of a completed roof will depend on the insulation thickness, the number and type of fixings, the roof structure and its internal finish. Example U-values are given in Table 10.

Table 10 Example U values

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Insulation thickness (mm) ⁽¹⁾		
	Concrete ⁽²⁾	Timber ⁽³⁾	Metal ⁽⁴⁾
0.09	— ⁽⁵⁾	— ⁽⁵⁾	— ⁽⁵⁾
0.11	— ⁽⁵⁾	— ⁽⁵⁾	— ⁽⁵⁾
0.12	— ⁽⁵⁾	— ⁽⁵⁾	— ⁽⁵⁾
0.13	— ⁽⁵⁾	— ⁽⁵⁾	— ⁽⁵⁾
0.15	140	140	140
0.16	140	140	140
0.18	120	110	120
0.20	110	100	110
0.25	80	75	90

(1) Nearest available thickness.

(2) 150 mm concrete deck ($\lambda = 1.33 W \cdot m^{-1} \cdot K^{-1}$), felt AVCL, insulation ($\lambda_D = 0.022 W \cdot m^{-1} \cdot K^{-1}$) and 10 mm bitumen felt finish ($\lambda = 0.23 W \cdot m^{-1} \cdot K^{-1}$).

(3) 12.5 mm plasterboard ($\lambda = 0.25 W \cdot m^{-1} \cdot K^{-1}$), AVCL, 150 mm timber joists (12.5%)/air cavity (87.5%), 18 mm plywood decking ($\lambda = 0.17 W \cdot m^{-1} \cdot K^{-1}$), felt AVCL, insulation ($\lambda_D = 0.022 W \cdot m^{-1} \cdot K^{-1}$) and 10 mm bitumen felt finish ($\lambda = 0.23 W \cdot m^{-1} \cdot K^{-1}$).

(4) Metal deck 0.7 mm ($\lambda = 50 W \cdot m^{-1} \cdot K^{-1}$), felt AVCL, insulation ($\lambda_D = 0.022 W \cdot m^{-1} \cdot K^{-1}$) and 10 mm bitumen felt finish ($\lambda = 0.23 W \cdot m^{-1} \cdot K^{-1}$).

(5) See section 6.2.3.

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

6.2.3 For improved energy or carbon savings, designers must consider appropriate fabric and/or service measures.

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 system were assessed.

8.2 Specific test data were assessed as given in Table 11.

Table 11 Results of durability tests

System assessed	Assessment method	Requirement	Result
IKO Ultra S-A Air and Vapour Control Layer on primed concrete	Peel from substrate to MOAT 64 : 4.3.3 : 2001 after heat ageing for 28 days at 80°C	25 N·(50 mm) ⁻¹	Pass

8.2.1 The durability of the system was also assessed using test data from representative related products.

8.3 Service life

8.3.1 Under normal service conditions, the system will have a life in excess of 20 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.3.2 After some years, the cap sheet may experience localised loss of the mineral surfacing, especially in areas where complex detailing of the roof design is incorporated.

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 by the BBA, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 and, where appropriate, *NHBC Standards 2024*, Chapter 7.1.

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

9.1.4 Structural decks to which the system is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Allowance needs to be made for loading deflections to ensure that the free drainage of water is maintained.

9.1.5 Imposed loads, dead loading and wind loads must be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003 and BS EN 1991-1-4 : 2005, and their UK National Annexes.

9.1.6 Metal deck profiles must give a bonding area of at least 33% of the total projected surface area. In areas where high wind speeds can be expected, mechanical fixings must be considered, and the advice of the Certificate holder must be sought as to the method of fixing.

9.1.7 At falls in excess of 1:11, the provision for mechanical fixings as required by BS 8217 : 2005 must be observed.

9.1.8 The membranes may also have a surface finish applied in accordance with BS 8217 : 2005, including:

- stone aggregate in dressing compound
- precast concrete paving slabs
- proprietary tiles on bonding compound.

9.1.9 Calculations of thermal transmittance (U value) must be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2019.

9.1.10 To limit the risk of interstitial condensation, roofs must be designed and constructed in accordance with the relevant parts of BS 5250 : 2021.

9.1.11 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.

9.1.12 In England and Wales, 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 section 9.1.11.

9.1.13 For buildings in Scotland, constructions will adequately limit the risk of surface condensation where the thermal transmittance (U value) does not exceed $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002.

9.1.14 Adequate ventilation must be provided, particularly in rooms expected to experience high humidity, and to ensure the integrity of AVCLs against vapour ingress.

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, the Certificate holder's instructions, and the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989 and BS 8217 : 2005.

9.2.3 Deck surfaces must be sound, dry and clean, and free from sharp projections such as nail heads and concrete nibs. Wet insulation boards must not be used. Any hollows, depressions or backfalls found in the roof deck must be rectified prior to laying the insulation.

9.2.4 The system must be laid in conditions normal to roofing work and must not be laid in rain, snow or heavy fog. If the temperature is below 5°C, suitable precautions must be taken against the formation of condensation on the substrate.

9.2.5 The Certificate holder recommends that the membranes, including the AVCL, are installed at temperatures above 10°C. When site ambient temperatures are below 10°C, it is recommended that the membranes are stored in a warm environment for 24 hours prior to use. If it is necessary to carry out installation at lower temperatures, the Certificate holder recommends that a hot-air gun is used to warm the adhesive surface.

9.2.6 Detailing must be formed in accordance with the Certificate holder's instructions.

9.2.7 The insulation boards can be cut to fit around projections through the roof, using either a sharp knife or a fine-toothed saw.

9.2.8 Prior to the installation of the AVCL, the substrate surface must be primed in line with the Certificate holder's instructions. The AVCL must be fully bonded to the primed deck using the Certificate holder's recommended bonding method. For metal decks, the upper profile of the decking must be primed and the AVCL bonded to the primed upper profile of the metal deck using the Certificate holder's recommended bonding method.

9.2.9 For plywood, OSB particle board and wool decks, joints in the boards must be taped with loose-laid strips of polyester-reinforced membranes. The AVCL is then bonded to the substrate using the appropriate bonding method recommended by the Certificate holder.

9.2.10 The insulation boards must be installed in a close-butted break-bonded pattern.

9.2.11 On metal decks, the insulation boards must be laid either with the long axis at right angles to the corrugations of the metal deck or diagonally across the corrugations of the deck, ensuring that all end joints and corners are sufficiently supported on the crown flats of the decking. The thickness of the board to be used is dependent on the width of the trough openings of the metal deck, as indicated in Table 5.

9.2.12 The insulation boards must be bonded to the AVCL using either IKOpro Insulation Adhesive or IKOpro Sprayfast MPP. A bead of adhesive must be applied in a snaking pattern, using a 30 mm bead width at 200 to 300 mm centres.

9.2.13 The top surface of the insulation must be primed using the IKOpro Bonding Agent and allowed to dry. The IKO Ultra T-F Underlay must be applied once the primer is dry and on the same working day.

9.2.14 The first strip of IKO Ultra T-F Underlay must be laid out in the correct position on the roof deck. The underlay must be rolled back towards the centre to reveal the release paper underneath. At a point close to the centre of the roll, the release paper must be carefully cut across the width of the roll without cutting through the underlay.

9.2.15 The IKO Ultra T-F Underlay must be bonded to the substrate in accordance with the Certificate holder's instructions.

9.2.16 Overlaps for the IKO Ultra T-F Underlay must be a minimum of 75 mm, both for side laps and end laps.

9.2.17 IKO Ultra Stick Cap Sheet is installed in the same way as the IKO Ultra T-F Underlay, ensuring that the end laps and side joints do not coincide with those of the underlay.

9.3 Workmanship

Practicability of installation was assessed on the basis of the Certificate holder's information and BS 8217 : 2005. To achieve the performance described in this Certificate, the system must only be installed by contractors/installers who have been trained and approved by the Certificate holder.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the system in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA 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 system must be the subject of six-monthly inspections and maintenance in accordance with the recommendations in BS 6229 : 2018, Chapter 7, and the manufacturer's own maintenance requirements, where relevant, to ensure continued satisfactory performance.

9.4.2.2 Where damage has occurred to the waterproof layer, it can be repaired by cleaning the area around the damage and applying a patch of the appropriate membrane, as described in the Certificate holder's instructions.

9.4.3 The other system components, once installed, do not require any regular maintenance and have suitable durability, provided the roof waterproofing layers are maintained as described in section 9.4.2.

10 Manufacture

10.1 The production processes for the system 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 system membranes are delivered to site in rolls within paper wrappings bearing the Certificate holder's name and the BBA logo incorporating the number of this Certificate.

11.2 The insulation boards are delivered to site in packs, wrapped in polythene. Each pack contains a label with the Certificate holder's name, product description, board dimensions and the BBA logo incorporating the number of this Certificate.

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

11.3.1 Rolls must be stored on end on a clean, level surface and not exposed to excessive heat.

11.3.2 The insulation boards must be protected from prolonged exposure to sunlight and must be stored under cover or protected with opaque polythene sheeting. Where possible, packs must be stored inside. If stored outside, the boards must be stacked flat, raised above ground level and away from contact with ground moisture.

11.3.3 Care must be exercised to avoid crushing the edges or corners of the insulation boards. If damaged, the boards must be discarded.

11.3.4 The insulation boards must not be exposed to open flame or other ignition sources, or to solvents or other chemicals.

Supporting information in this Annex is relevant to the system 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.

CLP Regulations

The Certificate holder has taken the responsibility of classifying and labelling the system components under the *GB CLP Regulation* and *CLP Regulation (EC) No 1272/2008 - classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

CE marking

The Certificate holder has taken the responsibility of CE marking the system in accordance with harmonised European Standards EN 13165 : 2012, EN 13707 : 2013 and EN 13970 : 2004.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate Q 05233).

Bibliography

- BRE Report BR 262 : 2002 *Thermal insulation: avoiding risks*
- BRE Report BR 443 : 2019 *Conventions for U-value calculations*
- BS 5250 : 2021 *Management of moisture in buildings — Code of practice*
- BS 6229 : 2018 *Flat roofs with continuously supported flexible waterproof coverings — Code of practice*
- BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*
- BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*
- BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*
- BS EN 826 : 2013 *Thermal insulating products for building applications— Determination of compressive behaviour*
- BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- NA to BS EN 1991-1-1 : 2002 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 : Actions on structures — General actions — Snow loads*
- NA + A2 : 18 to BS EN 1991-1-3 + A1 : 2015 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Snow loads*
- BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 : Actions on structures — General actions — Wind actions*
- NA to BS EN 1991-1-4 : 2005 + A1 : 2010 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 12086 : 2013 *Thermal insulating products for building applications— Determination of water vapour transmission properties*
- BS EN 13165 : 2012 + A2 : 2016 *Thermal insulating products for buildings — Factory made rigid polyurethane foam (PU) products — Specification*
- BS EN 13707 : 2013 *Flexible sheets for waterproofing — Reinforced bitumen sheets for roof waterproofing. Definitions and characteristics*
- BS EN 13970 : 2004 *Flexible sheets for waterproofing — Bitumen water vapour control layers — Definitions and characteristics*
- BS EN 15026 : 2023 *Hygrothermal performance of building components and building elements — Assessment of moisture transfer by numerical simulation*
- BS EN ISO 6946 : 2017 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation methods*
- BS EN ISO 9001 : 2015 *Quality management systems — Requirements*
- BS EN ISO 10456 : 2007 *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*
- BS EN ISO 13788 : 2012 *Hygrothermal performance of building components and building elements — Internal surface temperature to avoid critical surface humidity and interstitial condensation — Calculation methods*
- CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*
- EN 12667 : 2001 *Thermal performance of building materials and products — Determination of thermal resistance by means of guarded hot plate and heat flow meter methods — Products of high and medium thermal resistance*
- EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*
- EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*
- MOAT 64 : 2001 *UEAtc Technical guide for the assessment of roof waterproofing systems made of reinforced APP or SBS Polymer Modified Bitumen Sheets*

Conditions of Certificate

Conditions

1 This Certificate:

- relates only to the product that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

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

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

5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

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