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Agrément Certificate

11/4836

Product Sheet 2 Issue 3

KRYPTON CHEMICAL ROOF WATERPROOFING SYSTEMS

IMPERMAX COLD POLYUREA ROOF WATERPROOFING SYSTEMS

This Agrément Certificate Product Sheet(1) relates to Impermax Cold Polyurea Roof Waterproofing Systems, liquid-applied polyurea membranes for use as a waterproofing layer on new or existing flat, including zero fall roofs in protected specifications, blue roofs and pitched roofs with limited access and for waterproofing balconies, terraces and podiums.

(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 systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Third issue: 29 January 2024
Originally certified on 24 April 2019

Hardy Giesler
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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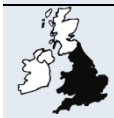
SUMMARY OF ASSESSMENT AND COMPLIANCE

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 Impermax Cold Polyurea Roof Waterproofing Systems, 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:	**B4(2)**	**External fire spread**
Comment:		On a suitable substructure, the systems may enable a roof to be unrestricted under this Requirement. See section 2 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The systems will enable a roof to satisfy this Requirement. See section 3 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The systems are acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
Comment:		Use of the systems on balconies is restricted by this Regulation. See section 2 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Durability, workmanship and fitness of materials**
Comment:		The use of the systems satisfies the requirements of this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	2.2	Separation
Standard:	2.7	Spread on external walls
Comment:		Use of the systems are restricted by these Standards with reference to clauses 2.27(1), 2.7.1(1)(2) and 2.7.2(1)(2) in some circumstances. See section 2 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		On a suitable substructure, the systems may enable a roof to be unrestricted under this Standard, with reference to clause 2.8.1(1)(2). See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The systems will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1(1)(2) and 3.10.7(1)(2). See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The systems can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.

Regulation:	**12**	**Building standards – conversions**
Comment:		Comments in relation to the systems 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(a) (b)(i)**	**Fitness of materials and workmanship**
Comment:		The systems are acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**23(2)**	**Fitness of materials and workmanship**
Comment:		Use of the systems on balconies is restricted under this Regulation. See section 2 of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The systems will enable a roof to satisfy the requirements of this Regulation. See section 3 of this Certificate.
Regulation:	**36(b)**	**External fire spread**
Comment:		On suitable substructures, the systems may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Impermax Cold Polyurea Roof Waterproofing Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 7.1 *Flat Roofs, terraces and balconies*.

In addition, in the opinion of the BBA, the systems, 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 use of the systems in the refurbishment of existing roofs.

Fulfilment of Requirements

The BBA has judged Impermax Cold Polyurea Roof Waterproofing Systems to be satisfactory for use as described in this Certificate. The systems have been assessed as a waterproofing layer on new or existing flat, including zero fall roofs in protected specifications, pitched roofs with limited access, blue roofs and for waterproofing balconies, terraces and podiums.

ASSESSMENT

System description and intended use

The Certificate holder provided the following description for the systems under assessment. Impermax Cold Polyurea Roof Waterproofing Systems consists of:

- Impermax Cold Polyurea — a two-component, polyurea, liquid-applied waterproofing membrane
- Impermax Cold Polyurea ST (<2%) – a two-component thixotropic version of Impermax Cold Polyurea for use on sloped surfaces
- Colodur (pigmented) — a one-component UV-resistant topcoat for application over Impermax Cold Polyurea and Impermax Cold Polyurea ST
- Impertop Fast 2K SF (pigmented) — a two-component UV-resistant topcoat for application over Impermax Cold Polyurea and Impermax Cold Polyurea ST
- Anti-slip additive — a nominal 700 µm particle size high-density polyethylene dust used mixed into Impertop Fast 2K SF when improved slip resistance is required
- Geomax — a 80 $g \cdot m^{-2}$ polyester reinforcement fabric for embedding into Impermax Cold Polyurea and Impermax Cold Polyurea ST over existing cracks, at upstands and other changes of plane in the unreinforced system
- Rayston Fiber 150 — a 150 $g \cdot m^{-2}$ glass fibre mat, for use in the fully reinforced system
- Humidity primer — a two-component water-based primer for use on concrete surfaces where the moisture content of the concrete is greater than 4%
- PU primer — a primer for use when overlapping onto existing coating during repairs
- Rayston Epoxy 100 — a two-part epoxy primer for use on dry concrete surfaces
- Thickening additive — an additive for mixing into Impermax Cold Polyurea when used at upstands and on steep slopes.

Ancillary Items

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

- Rayston Solvent — a general-purpose cleaning solvent and diluent viscosity modifier for use with Impermax Cold Polyurea and Impermax Cold Polyurea ST as a sealer/primer on dry porous substrates
- specialist primers/porosity sealers — for use on various substrates
- Impertrans (pigmented) — a single-component, aliphatic polyurethane coating for application over Impermax Cold Polyurea and Impermax Cold Polyurea ST waterproofing membranes
- proprietary joint tape — a self-adhesive flexible tape for use over existing cracks, at upstands, over joints and at changes of plane in unreinforced specifications
- proprietary sealants.

Applications

The systems are suitable for use on the following substrates:

- concrete (including damp concrete)(1)

Acceptable adhesion of the systems to other substrates should be confirmed by test.

(1) Concrete with a humidity level ≥4% must be primed with Humidity Primer.

Definitions for products and applications inspected

- 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 subject only to foot traffic and gathering of people greater than required for maintenance
- flat roof — a roof having a minimum finished fall of 1:80
- pitched roof — a roof having a fall in excess of 1:6
- zero fall roofs — a roof having a finished fall of between 0 to 1:80
- blue roofs — a flat roof designed to allow controlled attenuation of rain fall during storm events as part of a sustainable urban drainage system (SUDS)(1).

(1) The storm water attenuation system is outside the scope of this Certificate.

System assessment – key factors

The systems were 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

Not applicable.

2 Safety in case of fire

2.1 External fire spread

2.1.1 When tested to CEN/TS 1187 : 2012, Test 4 and classified to BS EN 13501-5 : 2016, the systems given below in Table 1 achieved B_{ROOF}(t4) for slopes below 10°.

Table 1 External fire spread tests results

Layer	System 1(1)	System 2(2)	System 3(3)	System 4(4)
Substrate	18 mm plywood deck(5)			≥12 mm non-combustible A1 rated calcium silicate board(5)
Primer	–	Humidity Primer applied at 0.3 kg·m^{-2}		
1st Layer	Impermax Cold Polyurea Beige applied at1 kg·m^{-2}	Impermax Cold Polyurea Grey applied at 2 kg·m^{-2}		Impermax Cold Polyurea Grey applied at 2.15 kg·m^{-2}
Top layer	Impermax Cold Polyurea Beige applied at 1 kg·m^{-2}	Colodur Pigmented Grey applied at 0.25 kg·m^{-2}	Impertop Fast 2K SF Grey (anti-skid, contains 20% antislip coarse additive) applied at 0.3 kg·m^{-2}	Colodur Pigmented Dark Grey applied at 0.25 kg·m^{-2}

(1) Classification report reference 19348B, conducted by Warringtonfire Gent. Report available from the Certificate holder. Test report references 19348A and 19348C, conducted by Exova Warringtonfire. Reports available from the Certificate holder.
(2) Classification report reference 19904B and 19904C, conducted by Warringtonfire. Reports available from the Certificate holder. Test report reference 19904A, conducted by Warringtonfire. Report available from the Certificate holder.
(3) Classification report reference 19904E and 19904F, conducted by Warringtonfire. Reports available from the Certificate holder. Test report reference 19904D, conducted by Warringtonfire. Report available from the Certificate holder.
(4) Classification report reference 20341K, conducted by Warringtonfire Gent. Report available from the Certificate holder. Test report reference 20341J, conducted by Warringtonfire Gent. Report available from the Certificate holder.
(5) Component is outside the scope of this Certificate.

2.1.2 On basis of data assessed, the constructions given in Table 1 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 When used in conjunction with one of the inorganic coverings listed in the Annex of Commission Decision 2000/553/EC, the systems will also be unrestricted with respect to proximity from a relevant boundary under by the documents supporting the national Building Regulations.

2.1.4 The designation 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 for Impermax Cold Polyurea Roof Waterproofing Systems.

2.2.2 On the basis of data assessed, the systems will be restricted in use under the documented supporting the national Building Regulations in some cases.

2.2.3 In England, the systems, when used in pitches of greater than 70°, excluding upstands, must not be used less than 1 m from a relevant boundary, or on residential buildings that have a storey at least 11 m above ground level or on other buildings more than 18 m 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 systems, when used in pitches of greater than 70°, excluding upstands, must not be used less than 1 m from a relevant boundary, 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.

2.2.5 In Scotland and Northern Ireland, constructions incorporating the system used in 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.

2.2.6 In England, unless covered with a protection with a reaction to fire of class A1 or A2-s1, d0, for example 40 mm thick cast stone slabs, the system must not be used on balconies of residential buildings with a storey 11 m or more in height or balconies of buildings that have a storey at least 18 m above ground level and contain one or more dwellings, an institution, a room for residential purposes, student accommodation, care homes, sheltered housing, hospitals, dormitories in boarding schools, hotels, hostels or boarding houses.

2.2.7 In Wales, unless covered with a protection with a reaction to fire of class A1 or A2-s1, d0, for example 40 mm thick cast stone slabs, the system must not be used on balconies of buildings that have a storey at least 18 m above ground level and contain one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals, dormitories or boarding schools.

2.2.8 In Northern Ireland, unless covered with a protection with a reaction to fire of class A1 or A2-s1, d0, for example 40 mm thick cast stone slabs, the system must not be used on balconies of buildings that have a storey at least 18 m above ground level and contain one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals, dormitories in boarding schools, nursing homes and places of lawful detention.

2.2.9 In Scotland, the system must not be used on balconies of buildings with a storey at a height of 11 m or more above the ground.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

3.1.1 Results of weathertightness tests are given in Table 2.

Table 2 Results of weathertightness tests

System assessed	Assessment method	Requirement	Result
Impermax Cold Polyurea	Watertightness to EOTA TR 003 : 2004 60 kPa	No evidence of water leakage	Pass
Impermax Cold Polyurea	Water vapour diffusion resistance factor (μ) EN 1931 : 2000	Value achieved	1485

3.1.2 On the basis of data assessed, Impermax Cold Polyurea Roof Waterproofing Systems will adequately resist the passage of moisture into the interior of a building and so satisfy the requirements of the national Building Regulations.

3.1.3 The adhesion of the systems to concrete is sufficient to resist the effects of wind suction, elevated temperatures and thermal shock likely to occur in service.

3.2 Resistance to mechanical damage

3.2.1 Results of resistance to mechanical damage tests are given in Table 3.

Table 3 Mechanical damage tests

System assessed	Assessment method	Requirement	Result
Impermax Cold Polyurea (≥ 2 kg·m^{-2}) on steel substrate	Dynamic indentation to EOTA TR 006 : 2004	Value achieved	
	cured at 0°C tested at 23°C[(1)]		I_3
	cured at 23°C tested at 23°C[(1)]		I_3
	cured at 40°C tested at 23°C[(1)]		I_4
	tested at –20°C		I_4
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber) on steel substrate	tested at –20°C		I_4
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax) on steel substrate	tested at –20°C		I_4
Impermax Cold Polyurea (≥ 2 kg·m^{-2}) on steel substrate	Static indentation to EOTA TR 007 : 2004	Value achieved	
	tested at 23°C		L_4
	tested at 60°C		L_4
	tested at 80°C		L_3
	tested at 90°C		L_2
Impermax Cold Polyurea (≥ 2 kg·m^{-2}) on PU substrate	tested at 23°C		L_3
	tested at 60°C		L_1
	tested at 80°C		L_1
	tested at 90°C		L_1
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber) Steel substrate	tested at 80°C		L_4
	tested at. 90°C		L_3
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)	tested at 60°C		L_4
	tested at 80°C		L_3

Steel substrate	tested at 90°C		L_3
Impermax Polyurea (2 kg·m^{-2} + Rayston Fiber) + Fast SF + Anti-slip (RAL 7011)			Pass
Impermax Cold Polyurea (2 kg·m^{-2})	Fatigue cycling to EOTA TR 008 : 2004 for 1000 cycles	Watertight and less than 75 mm delamination from substrate	Pass
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber)			Pass
Impermax Cold Polyurea (≥ 2 kg·m-^{2})	Tensile strength to BS EN ISO 527-3 : 1997	Value achieved	
	cured at 0°C(1)		6.11 Mpa
	cured at 23°C(1)		5.8 Mpa
	cured at 40°C(1)		7.07 Mpa
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber)			6 Mpa
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)			5.8 Mpa
Impermax Cold Polyurea (≥ 2 kg·m-^{2})	Elongation to BS EN ISO 527-3 : 1997	Value achieved	
	cured at 0°C(1)		565.2 %
	cured at 23°C(1)		457 %
	cured at 40°C(1)		419 %
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber)			6 %
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)			40 %

(1) Cured for 16 days.

3.2.2 On the basis of data assessed, the systems can accept, without damage, the limited foot traffic and light concentrated loads associated with installation, maintenance and pedestrian traffic(1). However, care must be taken to avoid puncture by sharp objects or concentrated loads.

(1) When used with a suitable paving or tiles on a sand or mortar bed.

3.2.3 The systems are capable of accepting minor structural movement while remaining weathertight.

4 Safety and accessibility in use

Data was assessed for the following characteristics.

4.1 Safety in use

4.1.1 Results of slip resistance tests are given in Table 4.

Table 4 Results of slip resistance tests

System assessed	Assessment method	Requirement	Result
Impertop Fast 2K SF 30% Anti-slip additive	Determination of the Pendulum Test Value (PTV) to BS 7676-2 : 2002 Dry surface Wet surface		 63 36
Impertop Fast 2K SF 30% Anti-slip additive	Dry surface Wet surface	Value achieved	64 41
Impertop Fast 2K SF 20% Anti-slip additive	Dry surface Wet surface		62 38
Impertop Fast 2K SF 20% Anti-slip additive	Dry surface Wet surface		61 40
Impertop Fast 2K SF 30% Anti-slip additive	Surface roughness to National Testing Services Ltd in-house method	Value achieved	36.7 µm
Impertop Fast 2K SF 20% Anti-slip additive			55.4 µm
Impertop Fast 2K SF 20% Anti-slip additive			53.4 µm

4.1.2 On the basis of the data assessed, the slip resistance values and performance in use indicate that in wet and dry conditions, the systems will provide a satisfactory performance and can be classified as having a low slip potential(1).

(1) This classification is based on the pendulum test value (PTV) and the recommendations given in *The Assessment of Floor Slip Resistance : The UK Slip Resistance Group Guidelines : Issue 5 : 2016*.

4.1.3 The slip resistance will be affected by greasy or contaminated conditions, and by the footwear worn.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

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 systems were assessed.

8.2 Specific test data were assessed as given in Table 5.

Table 5 Results of durability tests

System assessed	Assessment method	Requirement	Result
Impermax Cold Polyurea + Colodur & 150 Reinforcement on concrete primed with Epoxy 100 Primer	Delamination strength to EOTA TR 004 : 2004 exposure to water to EOTA TR 012 : 2004	> 50 kPa	Pass

Impermax Cold Polyurea + Fast SF + Anti-slip & 150 reinforcement	for 180 days at 60°C		Pass
Impermax Cold Polyurea (≥ 2 kg·m^{-2}) on steel substrate	Dynamic indentation to EOTA TR 006 : 2004 Heat aged for 200 days at 80°C to EOTA TR 011 : 2004 tested at -20°C		I_4
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber) on steel substrate			I_4
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax) on steel substrate			I_4
Impermax Cold Polyurea (≥ 2 kg·m^{-2}) on steel substrate	UV aged for 5000 light hours at 60°C to EOTA TR-010 : 2004 tested at -20°C		I_4
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax) on steel substrate			I_4
Impermax Cold Polyurea (2 kg·m^{-2}) Steel substrate	Static indentation to EOTA TR 007 : 2004 after exposure to water to EOTA TR 012 : 2004 for 60 days at 60°C tested at 60°C	Value achieved	L_4
	tested at 80°C		L_3
	tested at 90°C		L_2
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax) on steel substrate	tested at 60°C		L_4
	tested at 80°C		L_4
	tested at 90°C		L_3
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber) on steel substrate	for 180 days at 60°C tested at 90°C		L_3
Impermax Cold Polyurea (2 kg·m^{-2})	Fatigue cycling to EOTA TR 008 : 2004 for 50 cycles at –10°C Heat aged to EOTA TR 011 : 2004 for200 days at 70°C	Watertight and less than 75 mm delamination from substrate	Pass
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)			Pass
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber)			Pass
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber) + Fast SF + Anti-slip (RAL 7011)			Pass
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber) + Fast SF			Pass
Impermax Cold Polyurea (2 kg·m^{-2} + Rayston Fiber) + Colodur			Pass
Impermax Cold Polyurea (2 kg·m^{-2})	Tensile strength to BS EN ISO 527-3 : 1997 Heat aged for 200 days at 80°C to EOTA TR 011 : 2004	Value achieved	3.3 MPa
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)			5.6 MPa
Impermax Cold Polyurea (2 kg·m^{-2})			3.1 MPa

Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)	UV aged for 5000 light hours at 60°C to EOTA TR-010 : 2004		6.6 MPa
Impermax Cold Polyurea (2 kg·m^{-2})	Elongation to BS EN ISO 527-3 : 1997		192 %
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)	Heat aged for 200 days at 80°C to EOTA TR 011 : 2004		48 %
Impermax Cold Polyurea (2 kg·m^{-2})	UV aged for 5000 light hours at 60°C to EOTA TR-010 : 2004	Value achieved	193 %
Impermax Cold Polyurea (3 kg·m^{-2} + Geomax)			46 %
Impermax Cold Polyurea + Rayston Fibre 150 + Impertop Fast 2K SF + anti-slip additive	Colour stability UV aged to EOTA TR 010 : 2004 Samples washed	Value achieved	
Impermax Cold Polyurea + Rayston Fibre 150 + colodur + pigment paste PU	UV ageing 400 MJ·m^{-2} at 50°C		0.3 ΔE
	UV ageing 1000 MJ·m^{-2} at 50°C		1.53 ΔE
	UV ageing 400 MJ·m^{-2} at 50°C	Value achieved	0.24 ΔE
	UV ageing 1000 MJ·m^{-2} at 50°C		0.32 ΔE

8.3 Service life

8.3.1 Under normal service conditions, the systems will have a life of at least 25 years, provided they are 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 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 systems are to be applied must comply with the relevant requirements of BS 6229 : 2018 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 analysis of the roof is available, including overall and local deflection, direction of falls, etc.

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 loads, wind loading 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 Balconies and terraces, to which the systems are to be applied, must be designed in accordance with BS 8579 : 2020.

9.1.7 The drainage systems for blue roofs must be correctly designed and provision made for access for maintenance purposes.

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 of the systems must be in accordance with this Certificate, the Certificate holder's instructions and the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, BS 6229 : 2018.

9.2.3 Installation must not be carried out during inclement weather, eg rain, fog or snow, and the ambient temperature at the time of laying must be between 5 and 35°C. Surfaces to be coated must be at least 3°C above the dew-point.

9.2.4 Substrates to which the systems are to be applied must be sound, dry, clean and free from sharp projections such as nail heads and concrete nibs. The Certificate holder's advice must be sought for suitable cleaning procedures and the use of a proprietary surface cleaner/HSE approved fungicidal wash, but such advice and materials are outside the scope of this Certificate.

9.2.5 Previously coated areas must be checked for integrity and adequate adhesion to the substrate. Defects such as cracks and blisters must be repaired prior to application of the systems in accordance with the Certificate holder's instructions.

9.2.6 Defects in the substrate (eg cracks) must be repaired, prior to application, in accordance with the Certificate holder's instructions. Cracks are treated with a reinforced Impermax coating layer consisting of a 300 mm strip of reinforcement fabric embedded in Impermax Cold Polyurea prior to the application of the main waterproofing layer.

9.2.7 Active joints must also be treated with a reinforced Impermax Cold Polyurea coating layer, prior to the application of the main waterproofing layer, to ensure that the designed movement accommodation is maintained. The Certificate holder's advice must be sought for suitable specifications.

9.2.8 Substrates must be prepared and primed in accordance with the Certificate holder's instructions. Adhesion checks must be carried out to ensure that the systems are fully compatible with the existing surfaces and to determine the necessity for a primer.

9.2.9 A check must be made on the cured membrane for the presence of pinholes and missed areas. These are rectified by applying additional coats of membrane as necessary.

9.2.10 When used on public access roofs, the fully cured systems (especially unreinforced) must be covered with suitable paving or tiles on a sand or mortar bed. The Certificate holder must be consulted for details.

9.2.11 Impermax Cold Polyurea and Impermax Cold Polyurea ST, Parts A and B, must be mixed for at least two minutes using a slow-speed drill fitted with a suitable paddle stirrer, taking care to avoid excessive air entrainment and ensuring that any settlement occurring during storage is re-dispersed and the components are homogeneous.

9.2.12 Cracks and upstands must be treated with a reinforced Impermax Cold Polyurea or Impermax Cold Polyurea ST coating layer in accordance with the Certificate holder's instructions.

9.1.13 Where application to upstands or other steep slopes is required, thickening additive is mixed into Impermax Cold Polyurea at an addition rate of between 1-3%. Alternatively, Impermax Cold Polyurea ST can be used.

9.1.14 Impermax Cold Polyurea and Impermax Cold Polyurea ST are applied by roller, squeegee or suitable airless spray equipment to achieve a minimum total application rate of 2 $kg \cdot m^{-2}$ and a minimum total coating thickness of 1.6 mm.

9.1.15 On sloped surfaces or when application is by airless spray, the required application rate can be achieved by applying the coating in two or more coats.

9.1.16 For the reinforced system, Rayston Fiber 150 is embedded in the wet base coat. A second coat of Impermax Cold Polyurea is then applied over the top of the base coat to fully encapsulate the reinforcement.

9.1.17 Following application, a spiked roller is used to eliminate air bubbles that form in the wet non-reinforced membrane.

9.1.18 Special precautions must be taken in pedestrian access areas, to protect the membrane and appropriate precautions against slip taken when used in these areas. If required, Colodur (coloured) or Impertop Fast 2K SF (coloured) topcoat is applied in accordance with the Certificate holder's instructions.

9.1.19 Where improved slip resistance is required, this can be achieved by the addition of 20% anti-slip additive mixed into Impertop Fast 2K SF (coloured) topcoat prior to application.

9.2.20 The NHBC requires that the roof membranes, once installed, be inspected in accordance with of *NHBC Standards* 2024, Chapter 7.1, Clause 7.1.11, including the use of an appropriate integrity test, where required. Any damage to the membrane must be repaired in accordance with section 9.4 of this Certificate and reinspected.

9.3 Workmanship

9.3.1 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 systems must be carried out by installers who have been trained and approved by the Certificate holder.

9.3.2 Details of approved installers are available from the Certificate holder.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the systems 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 roof system must be the subject of six-monthly inspections and maintenance in accordance with the recommendations of BS 6229 : 2018, Chapter 7 and the manufacturers own maintenance requirements, where relevant, to ensure continued satisfactory performance.

9.4.2.2 Maintenance must include checks and operations to ensure that the membrane and drainage outlets are free from the build-up of silt and other debris.

9.4.2.3 In the event of the systems being contaminated by oil, grease or other chemicals, the advice of the Certificate holder must be sought, but such advice is outside the scope of this Certificate.

9.4.2.4 Damage to systems must be repaired as soon as possible to ensure that the waterproofing integrity is maintained.

9.4.2.5 The systems can be repaired by cutting back the damaged or de-bonded coating to sound, well-bonded material and reinstating it to the original specification ensuring an overlap of at least 30 mm onto the existing coating.

9.4.2.6 Areas of existing coating to be overlapped must be cleaned, dried and primed with PU Primer and allowed to fully dry for at least one hour prior to overcoating in accordance with the Certificate holder's instructions.

9.4.2.7 On completion, and when the coating has fully cured, the repair must be inspected to ensure it is sound and well bonded to the existing coating.

10 Manufacture

10.1 The production processes for the systems 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 components are delivered to site in sealed containers with labels bearing the Certificate holder's name, system description and the appropriate hazard and risk labels. They have a storage life of 12 months and are available in the pack sizes detailed in Table 6.

Table 6 Pack sizes

Component	Pack sizes (kg)
Impermax Cold Polyurea (Part A)	25
Impermax Cold Polyurea (Part B)	1.5
Colodur (clear)	4 and 20
Colodur (pigmented)	6 and 25
Impertop Fast 2K SF (Part A) clear	2.1 and 5.8
Impertop Fast 2K SF (Part B) clear	1.9 and 5.2
Impertop Fast 2K SF (Part A) pigmented	2.2 and 6.1
Impertop Fast 2K SF (Part B) pigmented	1.8 and 4.9
Anti-slip additive	2.5
Humidity primer (Parts A + B)	5 and 18
Thickening additive	10
Geomax reinforcement fabric 80 (0.3 x 100 m)	2.4
Geomax reinforcement fabric 80 (1.0 x 100 m)	8
Rayston Fiber 150 (1.0 x 150 m)	22.5

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

11.2.1 Components must be stored under cover in a cool, dry, ventilated location preferably below 20°C and above freezing.

11.2.2 Components must not be exposed to other chemicals or any source of ignition.

11.2.3 Rolls of reinforcement fabric must be stored flat in a dry, clean environment and protected from moisture.

ANNEX A – SUPPLEMENTARY INFORMATION †

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 systems and/or 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 systems in accordance with ETAG 005 : 2004, Parts 1 and 6 used as an EAD.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of ISO 9001 : 2015 by Bureau Veritas Certification (Certificate no. ES135709-1).

Additional Guidance

The systems components are manufactured by the Certificate holder in Spain and marketed in the UK by Krypton Chemicals UK Ltd, 960 Capability Green, Luton, LU1 3PE, tel: 07970 455050, e-mail: enquiries@kryptonchemicals.co.uk, website: www.kryptonchemicals.co.uk.

Additional information on installation

A.1 Guidance on the design of blue roofs is available in *NFRC Technical Guidance Note for the construction and design of Blue Roofs – Roofs and podiums with controlled temporary water attenuation*.

A2 When designing a zero fall roof Reference should also be made to the appropriate clauses in Liquid Roofing and Waterproofing Association (LRWA) Note 7 — *Specifier Guidance for Flat Roof Falls*.

A.3 The Certificate holder should be consulted on specifications for detailing around drains and other penetrations, but such advice is outside the scope of this Certificate.

A.4 After use, all equipment must be cleaned with Rayston Solvent. The Certificate holder's advice can be sought on the use of other cleaning products.

A.5 Installation should also be in accordance with the relevant clauses of Liquid Roofing and Waterproofing Association (LRWA) Note 7 - *Specifier Guidance for Flat Roof Falls*.

Bibliography

BS 6229 : 2018 *Flat roofs with continuously supported flexible waterproof coverings — Code of practice*

BS 7676-2 : 2002 + A1 : 2013 *Pendulum testers. Method of operation.*

BS 8579 : 2020 *Guide to the design of balconies and terraces*

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 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 *Eurocode 1 — Actions on structures — General actions — Snow loads*
NA to BS EN 1991-1-3 : 2003 UK National Annex to Eurocode 1 — *Actions on structures — General actions — Snow loads*
BS EN 1991-1-4 : 2005 *Eurocode 1 — Actions on structures — General actions — Wind actions*
NA to BS EN 1991-1-4 : 2005 UK National Annex to Eurocode 1 — *Actions on structures — General actions — Wind actions*

BS EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*
BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

BS EN ISO 527-3 : 1997 *Plastics. Determination of tensile properties. Test conditions for films and sheets*

CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*

EN 1931 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*

EOTA Technical Report TR 003 : 2004 *Determination of watertightness*
EOTA Technical Report TR 004 : 2004 *Determination of resistance to delamination*
EOTA Technical Report TR 006 : 2004 *Determination of the resistance to dynamic indentation*
EOTA Technical Report TR 007 : 2004 *Determination of resistance to static indentation*
EOTA Technical Report TR 008 : 2004 *Determination of the resistance to fatigue movement*
EOTA Technical Report TR 010 : 2004 *Exposure procedure for artificial weathering*
EOTA Technical Report TR 011 : 2004 *Exposure procedure for accelerated ageing by heat*
EOTA Technical Report TR 012 : 2004 *Exposure procedure for accelerated ageing by hot water*

ETAG 005 : 2000, Rev 2004 Part 1 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits – General*
ETAG 005 : 2000, Rev 2004 Part 6 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits – Specific Stipulations for Kits Based on Polyurethanes*

ISO 9001 : 2015 *Quality management systems — Requirements*

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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