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Agrément Certificate
11/4836
Product Sheet 1 Issue 6

KRYPTON CHEMICAL ROOF WATERPROOFING SYSTEMS

IMPERMAX 25 ROOF WATERPROOFING SYSTEMS

This Agrément Certificate Product Sheet(1) relates to the Impermax 25 Roof Waterproofing Systems, liquid-applied polyurethane membranes for use as a waterproofing layer on new and existing flat roofs with limited and pedestrian access, pitched roofs with limited access, blue roofs 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 Sixth issue: 29 January 2024
Originally certified on 25 May 2011

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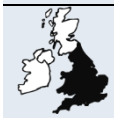
SUMMARY OF ASSESSMENT AND COMPLIANCE

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 25 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(1)**	**External fire spread**
Comment:		The systems are restricted by this Requirement in some circumstances. See section 2 of this Certificate.
Requirement:	**B4(2)**	**External fire spread**
Comment:		On a suitable substructures, 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:	**7(2)**	The systems are acceptable. See sections 8 and 9 of this Certificate.
		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:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		Use of the systems is restricted by these Standards, with reference to clauses 2.2.7(1), 2.6.4(1)(2), 2.7.1(1)(2) and 2.7.2(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 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(1)(a)(i) (ii)(iv)(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(a)**	**External fire spread**
Comment:		The systems are restricted by this Regulation in some circumstances. See section 2 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 25 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*, Chapter 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 do not cover the refurbishment of existing roofs.

Fulfilment of Requirements

The BBA has judged the Impermax 25 Roof Waterproofing Systems to be satisfactory for use as described in this Certificate. The systems have been assessed for use as a waterproofing layer on new and existing flat roofs with limited and pedestrian access, 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. The Impermax 25 Roof Waterproofing Systems consists of:

- Impermax — a single-component, polyurethane, liquid-applied waterproofing membrane available in black, light grey (similar to RAL 7001), dark grey (similar to RAL 7011), dark red and tile red
- Impermax QC — a single-component, polyurethane, liquid-applied 'Quick Cure' variant of Impermax waterproofing membrane, available in black, light grey (similar to RAL 7001), dark grey (similar to RAL 7011), dark red and tile red, and with a typical curing time of 2.5 hours at 14°C >85% RH and 4 hours at 7°C >50% RH
- Impermax A — a single-component, aliphatic polyurethane, liquid-applied waterproofing membrane, available in white and grey (RAL 7001)
- Impermax ST — a single-component, polyurethane, liquid-applied waterproofing membrane with thixotropic adjustments (<2%) added after manufacturing and prior to delivery which allows resin to applied over sloped surfaces. It is available in black, light grey (similar to RAL 7001), dark grey (similar to RAL 7011), dark red and tile red
- PUR Cat Additive — a catalyst for mixing into Impermax or Impermax QC/ST/A to reduce the curing time. The catalyst must not be used at temperatures above 20˚C
- Geomax — a 80 $g \cdot m^{-2}$ polyester reinforcement fabric for embedding into Impermax or Impermax QC/ST/A 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 primer for use on concrete surfaces where the moisture content of the concrete is greater than 4%
- Rayston Epoxy 100 — a two-component epoxy based primer (100% solids, solvent free) for use on concrete and porous surfaces where the moisture content of the concrete is less than 4%
- Porosity Sealer — a moisture-cured single-component polyurethane primer for use over porous, dry and rigid substrates
- Porosity Sealer Flex — a moisture-cured single-component polyurethane primer for use over dry and flexible substrates
- Porosity Sealer Flex 100 — a moisture-cured solvent free single-component polyurethane primer for use over dry and flexible substrates
- Polyurea Primer — a two component fast curing polyurea based primer for use over porous, dry and rigid substrates
- Polyurea Primer Flex — a two component fast curing polyurea based primer for use over dry and flexible substrates
- Thixotropy Additive — an additive mixed into Impermax or Impermax QC/A when used at upstands.

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 PU Solvent — a general-purpose cleaning solvent and diluent viscosity modifier used as a sealer/primer on porous substrates
- Porosity Sealer — a single-component primer for use over porous and dry substrates
- PU Primer — a one-component, non-film forming primer for use on a range of non-porous substrates including glass and steel
- Impertrans (pigmented) — a single-component, decorative and protective aliphatic polyurethane coating for application over Impermax and Impermax QC/ST
- Colodur (pigmented) — a single-component, decorative and protective aliphatic polyurethane coating for application over Impermax and Impermax QC/ST
- Super-accelerant PU — a curing agent mixed into Impermax.

Applications

The systems are suitable for use on the following substrates:

- concrete (including damp concrete) (1)
- mortar
- ceramic
- timber
- metals
- single-ply membranes (polyvinyl chloride (PVC), thermoplastic polyolefin (TPO) and ethylene propylene diene monomer rubber (EPDM))
- liquid, bituminous roof coatings
- polyurethane foam insulation boards.

(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
- blue roof — a flat roof designed to allow controlled attenuation of rain fall during heavy and 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

Data were assessed for the following characteristics.

2.1 External fire spread

2.1.1 When tested to ENV 1187 : 2002, Test 4 and CEN/TS 1187 : 2012, Test 4 and classified to BS EN 13501-5 : 2005 and 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)]
Substrate	18 mm plywood deck[(4)]	15mm plywood deck[(4)]	18 mm plywood deck[(4)]
Primer	-	Humidity Primer applied at 0.3 kg·m^{-2}	-
1st Layer	Impermax Dark Grey applied at 1 kg·m^{-2}	Impermax QC Light Grey applied at 1.5 kg·m^{-2}	Impermax ST Dark Red applied at 1 kg·m^{-2}
Reinforcement layer	-	Rayston Fibre 150	-
Top layer	Impermax Red applied at 1 kg·m^{-2}	Impermax A applied at 0.7 kg·m^{-2}	Impermax ST applied at 1 kg·m^{-2}

(1) Classification report reference 381582, conducted by Warringtonfire Gent. Report available from the Certificate holder.
Test report reference 380412, conducted by Exova Warringtonfire. Report available from the Certificate holder.
Classified to BS EN 13501-5 : 2005 + A1 : 2009.
(2) Classification report reference 20276B, conducted by Warringtonfire Gent. Report available from the Certificate holder.
Test report reference 20276A, conducted by Warringtonfire. Report available from the Certificate holder.
(3) Classification report reference P122102-1001, conducted by BRE. Report available from the Certificate holder.
Test report reference P122102-1000, conducted by BRE. Report available from the Certificate holder.
Classified to BS EN 13501-5 : 2016.
(4) 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 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 25 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, for constructions incorporating the systems 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 systems 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 systems 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 systems 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 systems 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 systems 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 based system	Watertightness to BS EN 1928 : 2000	No leakage	Pass
Impermax QC based system	60 kPa for 24 hours		Pass
Impermax 25	Resistance to water vapour diffusion to EN 1931 : 2000	μ >1000	Pass
Impermax 25	Delamination strength to EOTA TR 004 : 2004	> 50 kPa	
- on concrete			Pass
- on ceramic			Pass
- on polyurethane insulation			Pass
- day joint			Pass

3.1.2 On the basis of data assessed, Impermax 25 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 the substrates tested is sufficient to resist the effects of wind suction, elevated temperature and thermal shock likely to occur in service. Acceptable adhesion to the other substrates listed under 'System description and intended use' must be confirmed by test.

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 25 on steel	Dynamic indentation to EOTA TR 006 : 2004		
	tested at 23°C	Value achieved	I_4
	tested at -20°C		I_4
Impermax 25 on polyurethane insulation	tested at 23°C		I_4
	tested at -20°C		I_4
Impermax 25 on steel	Static indentation to EOTA TR 007 : 2004		
	tested at 23°C	Value achieved	L_4
	tested at 60°C		L_3
	tested at 80°C		L_4
Impermax 25 on polyurethane insulation	tested at 23°C		L_1
	tested at 60°C		L_3
	tested at 80°C		L_1
Impermax 25	Fatigue cycling to EOTA TR 008 : 2004 1000 cycles at -10°C	Watertight and less than 75 mm delamination from substrate	Pass
Impermax 25	Tensile strength to EN ISO 527-3 : 2018	Value achieved	2.4 MPa
Impermax 25	Elongation to EN ISO 527-3 : 2018	Value achieved	459%

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

Not applicable.

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 4.

Table 4 Results of durability tests

System assessed	Assessment method	Requirement	Result
Impermax 25 on steel	Dynamic indentation to EOTA TR-006 : 2004 heat aged for 200 days at 80°C to EOTA TR 011 : 2004 tested at -20°C	Value achieved	I_4
Impermax 25 on steel	UV aged for 1000 $MJ.m^{-2}$ at 60°C to EOTA TR-010 : 2004 tested at -10°C		I_4
Impermax 25 on polyurethane insulation			I_4
Impermax 25	Fatigue cycling EOTA TR 008 : 2004 50 cycles at -10°C Heat aged for 200 days at 80°C to EOTA TR -011 : 2004	Watertight and less than 75 mm delamination from substrate	Pass
Impermax 25	Tensile strength to BS EN ISO 527-3 : 2018 Heat aged for 200 days at 80°C to EOTA TR 011 : 2004	Value achieved	3.3 MPa
	UV aged for 1000 $MJ·m^{-2}$ at 60°C to EOTA TR-010 :2004		3.1 MPa
Impermax 25	Elongation to BS EN ISO 527-3 : 2018 Heat aged at 80°C for 200 days at 80°C to EOTA TR 011 : 2004	No significant deterioration	Pass
	UV aged for 1000 $MJ·m^{-2}$ at 60°C to EOTA TR-010 :2004		Pass
Impermax 25 on steel substrate	Static Indentation to EOTA TR-007 : 2004 Water exposure at 60°C for 60 days to EOTA TR-012 : 2004	Value achieved	
	tested at 60°C		L_4
	tested at 80°C		L_3

Service life

8.3 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.

9.1.8 Insulation materials to be used in conjunction with the membranes must be in accordance with the Certificate holder's instructions and be either:

- as described in the relevant Clauses of BS 6229 : 2018, or
- the subject of a current BBA Certificate and used in accordance with, and within the limitations of, that 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 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 and 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 or Impermax QC/ST/A prior to the application of the main waterproofing layer.

9.2.7 Active joints must also be treated with a reinforced Impermax or Impermax QC/ST/A 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 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 or Impermax QC/ST/A is 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 or Impermax QC/ST/A coating layer in accordance with the Certificate holder's instructions.

9.2.13 Where application to upstands or other steep slopes is required, Impermax ST may be used. Alternatively, Thixotropy Additive can be mixed into Impermax or Impermax QC/A at a rate of 1 kg of additive to 25 kg of coating.

9.2.14 Impermax 25 Roof Waterproofing Systems can be applied via two different application methods. The aromatic base coat (reinforced or non-reinforced)/aromatic topcoat described in section 9.2.15 and 9.2.16 and the aromatic base coat (reinforced)/aliphatic topcoat described in section 9.2.17 and 9.2.18.

9.2.15 Base coats of Impermax or Impermax QC/ST is applied by roller, squeegee or suitable airless spray machine in two coats each at a rate of 1 $kg \cdot m^{-2}$ to achieve a minimum total application rate of 2 $kg \cdot m^{-2}$ and a minimum total coating thickness of 1.6 mm.

9.2.16 For the reinforced system, Rayston Fiber 150 is embedded in the wet base coat. At least 24 hours must be allowed between coats of Impermax/ST and 1 to 4 hours between coats of Impermax QC, depending on environmental conditions.

9.2.17 A base coat of Impermax or Impermax QC/ST is applied by roller, squeegee or suitable spray airless machine at a rate of 1.5 $kg \cdot m^{-2}$. Rayston Fiber 150 is embedded in the wet resin.

9.2.18 A topcoat of Impermax A is applied by roller, squeegee or suitable spray airless machine at a rate of 0.7 $kg \cdot m^{-2}$. The objective is to achieve a minimum total rate of 2.2 $kg \cdot m^{-2}$ and a minimum total coating thickness of 1.8 mm.

9.2.19 When applied by roller, it is recommended that the membrane application is carried out in two or three coats to achieve the required application rate.

9.2.20 Following application, a spiked roller is used to eliminate air bubbles that form in the wet membrane.

9.2.21 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 is 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 the systems must be repaired as soon as possible to ensure that waterproofing integrity is maintained. The Certificate holder's advice must be sought for suitable repair materials, but such advice and materials are outside the scope of this Certificate.

9.4.2.5 The systems must 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 are available in the pack sizes detailed in Table 5.

Table 5 Pack sizes

Component	Pack sizes (kg)
Impermax	6 and 25
Impermax QC	5 and 25
Impermax ST	6 and 25
Impermax A	6 and 25
PUR Cat Additive	1
Humidity Primer (Parts A + B)	5 and 18
Thixotropy Additive	1
Rayston PU solvent	4 and 20
PU Primer	4 and 20
Impertrans	4 and 20
Colodur	4 and 20
Super Accelerant PU	1.5
Reinforcement Fabric 80 (0.3 x 100 m)	2.4
Reinforcement Fabric 80 (1.0 x 150 m)	8
Rayston Fiber 150 (1.0 x 150 m)	22.5
Rayston Epoxy 100	Component A: 10, Component B: 15
Porosity Sealer	4 and 20
Porosity Sealer Flex	4 and 20
Porosity Sealer Flex 100	20
Polyurea Primer	Component A: 20, 4, Component B: 2, 0.4 kg
Polyurea Primer Flex	Component A: 20, 4, Component B: 2, 0.4 kg

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 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 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*.

A.2 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.3 After use, all equipment must be cleaned with Rayston PU Solvent. The Certificate holder's advice can be sought on the use of other cleaning products.

A.4 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, the Certificate holder's instructions and this certificate.*

Bibliography

BS 6229 : 2018 *Flat roofs with continuously supported flexible waterproof coverings — 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 8579 : 2020 *Guide to the design of balconies and terraces*

BS EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*

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 to BS EN 1991-1-3 : 2003 + 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 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*
BS EN 13501-5 : 2005 + A1 : 2009 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*
BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

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*

EN ISO 527-3 : 2018 *Plastics — Determination of tensile properties — Test conditions for films and sheets*

ENV 1187 : 2002 *Test methods for external fire exposure to roofs*

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