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Agrément Certificate

18/5484

Product Sheet 1

ICOPAL ROOF WATERPROOFING SYSTEMS

ELASTOFLEX BALCONY AND WALKWAY SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Elastoflex Balcony and Walkway System, a two-part methyl methacrylate resin-based, liquid-applied waterproofing membrane for use in waterproofing balconies, terraces and pedestrian walkways.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Weathertightness — the system will resist the passage of moisture into the building (see section 6).

Properties in relation to fire — the system can enable a roof to be unrestricted under the Building Regulations (see section 7).

Adhesion — the system will resist the effects of any likely wind suction acting on the roof (see section 8).

Resistance to mechanical damage — the system will accept, without damage, the limited foot traffic and loads associated with installation and maintenance (see section 9).

Slip resistance — the system, with anti-skid additive, will reduce the risk of accidental slip in wet conditions (see section 10).

Durability — under normal service conditions, the system will provide a durable roof waterproofing for in excess of 25 years (see section 12).



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 First issue: 26 January 2018

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, the Elastoflex Balcony and Walkway 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 presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



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

Requirement:	B4(2)	External fire spread
Comment:		On a suitable substructure, the use of the system can enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The system will enable a roof to satisfy this Requirement. See section 6.1 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The system is acceptable. See section 12 and the <i>Installation</i> part 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 system satisfies the requirements of this Regulation. See sections 11 and 12 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when applied to a suitable substructure, is regarded as having low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See section 7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system 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 6.1 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The system can contribute to meeting 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 applicable to conversions
Comment:		Comments in relation to 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(a)	Fitness of materials and workmanship
Comment:	(b)(i)	The system is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The system will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation:		External fire spread
Comment:		On a suitable substructure, the use of the system can enable a roof to be unrestricted under the requirements of this Regulation. See section 7 of this 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.

See sections: 3 *Delivery and site handling* (3.2 and 3.3) and 10 *Slip resistance* of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, the Elastoflex Balcony and Walkway 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 and balconies*.

Technical Specification

1 Description

The Elastoflex Balcony and Walkway System comprises:

- Elastoflex Balcony and Walkway Filler (resin) — a two-component, solvent-free methacrylate resin, for filling cracks, gaps and voids less than 10 mm in width
- Elastoflex Balcony and Walkway Levelling Coat — a slurry mix for use as a levelling layer above existing substrates with a rough surface finish. The levelling coat consists of resin, a filler and catalyst powder
- Elastoflex Balcony and Walkway Banding Strip — a resin used to fill cracks in substrates greater than 10 mm wide
- Elastoflex Balcony and Walkway Primer — a two-component, solvent-free methacrylate resin, for use on concrete in the temperature range of 0 to 30°C
- Elastoflex Balcony and Walkway Primer (winter) — a two-component, solvent-based methyl methacrylate resin solution, for use on concrete in the temperature range of -10 to 15°C
- Elastoflex Balcony and Walkway Catalyst Powder — 50% benzoyl peroxide with a solid plasticiser, for use as a hardener with Elastoflex Balcony and Walkway Filler (resin), Elastoflex Balcony and Walkway Primer (standard and winter grades) and Elastoflex Balcony and Walkway Surfacing Resin
- Elastoflex Balcony and Walkway Metal Primer — a two-component, solvent-based, anti-corrosive metal primer
- Elastoflex Balcony and Walkway Waterproof Coating Horizontal Grade — a two-component, solvent-free methyl methacrylate resin, available in summer and winter grades
- Elastoflex Balcony and Walkway Waterproof Coating Vertical Grade — a two-component, solvent-free methyl methacrylate resin, available in summer and winter grades
- Elastoflex Balcony and Walkway Liquid Catalyst — 40% benzoyl peroxide liquid for use in Elastoflex Balcony and Walkway Waterproof Coating Horizontal and Vertical grades
- Elastoflex Balcony and Walkway Reinforcing Fabric — a polyester reinforcing fabric with a compressed mesh
- Elastoflex Balcony and Walkway Surfacing Resin — a two-component, solvent-free methacrylate resin, for use in combination with Elastoflex Balcony and Walkway Surfacing Granules to provide an anti-skid finish. Available in a range of colours and summer and winter grades
- Elastoflex Balcony and Walkway Surfacing Granules — bauxite aggregate granules.

2 Manufacture

2.1 The system components are manufactured by batch-blending processes.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process

- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out 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.

3 Delivery and site handling

3.1 The resins are delivered to site in cans bearing the Certificate holder's details, product name, hazard labelling, transportation information, batch number and the BBA logo incorporating the number of this Certificate.

3.2 The system components are delivered as detailed in Table 1.

Table 1 Weights and packaging

Component	Weight	Container	Shelf-life ⁽¹⁾ (months)
Elastoflex Balcony and Walkway Filler	5 kg kit	metal containers plastic bags	6
	4.85 kg (filler) 2 x 80 g (hardener powder)		6
Elastoflex Balcony and Walkway Levelling Coat	25 kg kit	metal containers bag plastic bags	6
	4.2 kg (resin)		6
	20 kg (filler) 80 g (hardener powder)		6
Elastoflex Balcony and Walkway Banding Strip	8 kg (resin)	metal containers plastic bags	6
	80 g (hardener powder)		6
Elastoflex Balcony and Walkway Primer	5 kg kit	metal containers plastic bags	6
	4.85 kg (primer) 3 x 80 g g (hardener powder)		6
Elastoflex Balcony and Walkway Primer (winter)	5 kg kit	metal containers plastic bags	6
	4.85 kg (primer) 3 x 80 g (hardener powder)		6
Elastoflex Balcony and Walkway Metal Primer	5 kg	metal containers	6
Elastoflex Balcony and Walkway Waterproof Coating (all grades)	10 kg	metal containers	6
Elastoflex Balcony and Walkway Liquid Catalyst	5 kg	plastic tubs	6
Elastoflex Balcony and Walkway Reinforcing Fabric	1.05 x 100 m	rolls	—
	0.35 x 100 m	rolls	—
Elastoflex Balcony and Walkway Surfacing	25 kg kit	metal containers plastic bags	6
	24.83 kg (resin)		6
	3 x 80 g (hardener powder)		6
Elastoflex Balcony and Walkway Surfacing Granules	2.5 kg	plastic bags	—

(1) When unopened.

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

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Elastoflex Balcony and Walkway System.

4 Use

4.1 The Elastoflex Balcony and Walkway System is satisfactory for use as a liquid-applied roof waterproofing layer on balconies, terraces and covered walkways for pedestrian access, including zero fall applications.

4.2 The system is suitable for use on concrete and metal substrates.

4.3 Pedestrian access roofs are defined for the purposes of this Certificate as those not subjected to vehicular traffic.

4.4 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80. For design purposes, twice the minimum finished fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc. Pitched roofs are defined for the purpose of this Certificate as those having a fall greater than 1:6. Zero fall roofs are defined for the purpose of this Certificate as those having a finished fall of between 0 and 0.7 degrees. Recommendations for the design of roof falls are available in the Liquid Roofing and Waterproofing Association's (LRWA) Note 7 *Specifier guidance for flat roof falls*.

4.5 For drainage systems for zero fall roofs it is particularly important to ensure that the drainage provided is effective. Where applicable, roof drainage should be designed in accordance with BS EN 12056-3 : 2000.

4.6 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2003, BS 8217 : 2005 and, where appropriate, *NHBC Standards 2018*, Chapter 7.1.

4.7 Insulation materials used in conjunction with the system must be in accordance with the manufacturer's instructions and be either:

- as described in the relevant clauses of BS 8217 : 2005, or
- the subject of a current BBA Certificate and used in accordance with, and within the scope of, that Certificate.

5 Practicability of installation

The system must only be installed by contractors who have been trained and authorised by the Certificate holder.

6 Weathertightness



6.1 The system will adequately resist the passage of moisture into the building and enable a roof to comply with the requirements of the national Building Regulations.

6.2 The system is impervious to water and will achieve a weathertight roof capable of accepting minor structural movement.

7 Properties in relation to fire



7.1 When tested to ENV 1187 : 2002, and classified in accordance with BS EN 13501 : 2005, a system comprising a concrete primed with Elastoflex Balcony and Walkway Primer at a rate $250 \text{ g}\cdot\text{m}^{-2}$, a 1.2 mm thick coating of Elastoflex Balcony and Walkway Waterproof Coating, a 1.2 mm thick coating of Elastoflex Balcony and Walkway Waterproof Coating and a 1.0 mm thick coating of Elastoflex Balcony and Walkway Surfacing, achieved a $B_{\text{ROOF}}(t4)$ classification.

7.2 The designation of other specifications should be confirmed by:

England and Wales — test or assessment in accordance with Approved Document B, Appendix A, clause 1
Scotland — test to conform to Mandatory Standard 2.8, clause 2.8.1⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

Northern Ireland — test or assessment by a UKAS-accredited laboratory, or an independent consultant with appropriate experience.

8 Adhesion

The adhesion of the system to concrete and metal is sufficient to resist the effects of any wind suction, elevated temperatures, thermal shock or minor movement likely to occur in practice.

9 Resistance to mechanical damage

The system can accept, without damage, normal foot traffic and light concentrated loads associated with installation and maintenance operations. However, reasonable care should be taken to avoid puncture by sharp objects or concentrated loads. In cases of doubt, advice is available from the Certificate holder.

10 Slip resistance

The addition of Elastoflex Balcony and Walkway Surfacing Granules in the Elastoflex Balcony and Walkway Surfacing Resin coat will reduce the risk of accidental slipping to pedestrian traffic when the system's surface is wet.

11 Maintenance



The system should be the subject of regular annual inspections and roof drains should be kept clear, as is good practice with all membrane and liquid-applied flat roofing systems.

12 Durability



Under normal service conditions, the system will have a service life in excess of 25 years.

Installation

13 General

13.1 The Elastoflex Balcony and Walkway System must be installed in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, BS 6229 : 2003, the Certificate holder's instructions and this Certificate.

13.2 Installation must not be carried out during inclement weather, eg rain, fog or snow. The ambient air temperature at the time of laying must be between -5 and 30°C and the substrate temperature 3°C above the dew point. The Certificate holder's advice on conditions with regard to selection of summer and winter grades must be followed.

14 Site and surface preparation

14.1 Substrates on which the waterproofing component of the system is to be applied must be properly prepared in accordance with the Certificate holder's instructions.

14.2 Adhesion to substrates will depend on the condition and cleanness of the substrate. Substrates must be visibly dry, sound and free from loose materials or contamination (eg moss or algae).

14.3 Deck surfaces must be free from sharp projections, such as protruding fixing bolts and concrete nibs.

14.4 On uneven surfaces, Elastoflex Balcony and Walkway Levelling Coat is used to provide a smooth application surface.

Concrete

14.5 New concrete must be well compacted and finished, preferably by power floating and power trowelling to a dense, smooth finish, free from defects. The substrate must be prepared by captive blasting, hydroblasting or other methods approved by the Certificate holder. Concrete toppings and screeds must be properly formulated, applied and compacted. They must be bonded to the substrate and have a floated finish with minimum laitance.

14.6 Surfaces must be dry, and free from laitance and other contaminants likely to affect the adhesion of the system. Any existing coatings must be removed. The substrates must be prepared by shot blasting, hydro-blasting or other approved methods. All loose material must be removed by vacuum cleaning or sweeping the surface.

14.7 Cracks, gaps and voids less than 10 mm in width must be repaired using the Elastoflex Balcony and Walkway Filler system. For repairing larger defects in the substrate. To repair cracks greater than 10 mm, Elastoflex Balcony and Walkway Banding Strip is used.

15 Application

Primer

15.1 Concrete surfaces are primed using Elastoflex Balcony and Walkway Primer or Elastoflex Balcony and Walkway Primer (winter) depending on site conditions, and metal substrates are primed with Elastoflex Balcony and Walkway Metal Primer. The primers may be applied by brush or roller.

15.2 Application rates and drying times for the primers are given in Table 2.

Table 2 Application rates and drying times

Primer	Rate (kg·m ⁻²)	Drying time (minutes at 20°C)
Elastoflex Balcony and Walkway Levelling Coat	2.0 per mm coat thickness	45 to 50
Elastoflex Balcony and Walkway Primer	0.15 – 0.25	60
Elastoflex Balcony and Walkway Primer (winter)	0.2 – 0.3	45
Elastoflex Balcony and Walkway Metal Primer	0.2 – 0.25	30

15.3 The primer is overcoated with the first layer of Elastoflex Balcony and Walkway Waterproof Coating within 24 hours of application, provided the primed surface is clean and dry.

15.4 If more than 24 hours elapse or the primed surface becomes wet owing to rain or condensation, the primer must be abraded and the area re-primed.

Waterproofing membrane

15.5 Elastoflex Balcony and Walkway Liquid Catalyst is added to the Elastoflex Balcony and Walkway Waterproof Coating in the ratio recommended in the Certificate holder's installation instructions for the prevailing site conditions and mixed.

15.6 Elastoflex Balcony and Walkway Waterproof Coating is applied to the primed substrate, as a base layer, at an application rate of 1.5 kg·m⁻² using a squeegee and medium pile roller.

15.7 Elastoflex Balcony and Walkway Reinforcing Fabric is placed in the wet layer and the surface rolled with a dry roller, eliminating trapped air and saturating the reinforcement. Overlaps in the reinforcement must be a minimum of 50 mm.

15.8 The first layer is allowed to cure before a second layer of Elastoflex Balcony and Walkway Waterproof Coating is applied at an application rate of 1.5 kg·m⁻². The finished thickness of the two layers must be a minimum of 2 mm.

Anti-slip finish

15.9 Elastoflex Balcony and Walkway Surfacing Resin is mixed thoroughly using a mechanical paddle mixer with Elastoflex Balcony and Walkway Granules, ensuring the aggregate is fully wetted out. When used vertically, the granules are omitted.

15.10 Elastoflex Balcony and Walkway Catalyst Powder is added to the Elastoflex Balcony and Walkway Waterproof Surfacing by the weight recommended in the Certificate holder's installation instructions for the prevailing site conditions, and mixed. Mix only enough material that can be applied within the working life.

15.11 The material is poured on the cured Elastoflex Balcony and Walkway Coating and spread evenly over the substrate with a 4 mm serrated squeegee blade or trowel. To remove any rake marks and create an even texture the surface is rolled with a medium pile roller. The application rate for horizontal application is $1.7 \text{ kg}\cdot\text{m}^{-2}$.

15.12 Elastoflex Balcony and Walkway Surfacing must be fully cured before trafficking is allowed. To prevent unnecessary contamination, it should be protected from other trades working on the site.

Lapping

15.13 Where new waterproofing membrane is to be joined to an existing Elastoflex Balcony and Walkway, and at day joints, the new application must be lapped onto the existing membrane by a minimum of 50 mm.

15.14 Where the existing membrane is clean, no additional preparation is necessary.

15.15 Where the existing membrane is dirty or contaminated, the surface should be cleaned using a suitable solvent. The Certificate holder can advise on suitable materials.

16 Repair

16.1 After application of each coat, any identified pin/blow holes must be over-coated with the system at an additional minimum application rate of $1.5 \text{ kg}\cdot\text{m}^{-2}$ per coat.

16.2 Repair of blisters or damage must be made good by cutting back to sound material, preparing the periphery if necessary and applying a repair coat of the system in accordance with the Certificate holder's instructions, ensuring a minimum peripheral lap of 50 mm around the repair.

16.3 Where the damage is through to the substrate, the exposed surface must be cleaned before re-priming.

Technical Investigations

17 Tests

Tests were carried out and the results assessed to determine:

- water vapour permeability
- tensile strength and elongation
- low temperature flexibility
- dimensional stability
- resistance to chisel impact
- resistance to static indentation
- resistance to dynamic indentation
- resistance to fatigue movement
- resistance to cracking
- tensile bond strength
- effects of heat ageing
- effects of exposure to water
- effects of exposure to UV radiation
- effects of low temperature cure
- effects of high temperature cure.

18 Investigations

18.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

18.2 Existing fire data for external spread of flame were assessed.

18.3 A visit was made to existing site to assess the system's performance in use.

Bibliography

BS 6229 : 2003 *Flat roofs with continuously supported 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 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*

BS EN 12056-3 : 2000 *Gravity drainage systems inside buildings — Roof drainage, layout and calculation*

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*

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

19 Conditions

19.1 This Certificate:

- relates only to the product/system 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 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.

19.2 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.

19.3 This Certificate will remain valid for an unlimited period provided that the product/system 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.

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

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

19.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, 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.