

## Aperture

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Agrément Certificate  
No 08/4560

## PRODUCT SHEET 1 — APERTURE WEATHERING SYSTEM

### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the Aperture Weathering System, used to weatherproof penetrations through roofs and walls, roof junction details and gutters.

#### AGRÉMENT 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 5).

**Properties in relation to fire** — the use of the system can enable a roof to be unrestricted under the current Building Regulations (see the *Regulations* section and section 6). Areas on walls on which the system has been applied should be considered as unprotected (see the *Regulations* section and section 6).

**Adhesion** — the adhesion of the system is sufficient to resist the effects of any likely wind suction acting on the roof (see section 7).

**Resistance to mechanical damage** — the system will accept the limited foot traffic and loads associated with the installation and maintenance of the system and the effects of thermal or other minor movement likely to occur in practice without damage (see section 8).

**Durability** — under normal service conditions the system will provide a durable waterproof covering with a service life of up to 25 years (see section 10).

The BBA has awarded this Agrément Certificate for the Aperture Weathering System to Aperture as fit for its intended use provided it is installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Head of Approvals  
— Materials

Chief Executive

Date of First issue: 19 May 2008

*Certificate amended 12 September 2008 to change front page photograph and correction to company name.*

*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](http://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 Aperture Weathering System, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



## The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	<b>B4(1)</b>	External fire spread
Comment:		The system has not been classified as 'non-combustible'. Areas on walls on which the system has been applied should be considered as unprotected under this Requirement. See sections 6.1 to 6.3 of this Certificate.
Requirement:	<b>B4(2)</b>	External fire spread
Comment:		Test data to BS 476-3 : 2004 indicate that on suitable substructures the use of the system will enable a roof to be unrestricted under this Requirement. See sections 6.1 and 6.2 of this Certificate.
Requirement:	<b>C2(b)</b>	Resistance to moisture
Comment:		Tests for water resistance on the system indicate that the use of a system can enable a roof and wall to satisfy this Requirement. See sections 5.1 and 5.2 of this Certificate.
Requirement:	<b>Regulation 7</b>	Materials and workmanship
Comment:		The system is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.



## The Building (Scotland) Regulations 2004 (as amended)

Regulation:	<b>8(1)(2)</b>	<b>Fitness and durability of materials and workmanship</b>
Comment:		The use of the system satisfies the requirements of this Regulation. See sections 9.1 to 9.3, 10 and the <i>Installation</i> part of this Certificate.
Regulation:	<b>9</b>	<b>Building standards — construction</b>
Standard:	<b>2.6</b>	Spread to neighbouring buildings
Comment:		The system has not been classified as 'non-combustible' and therefore the use will be restricted under clauses 2.6.5 <sup>(1)</sup> and 2.6.6 <sup>(2)</sup> of this Standard. See sections 6.1 to 6.3 of this Certificate. Areas on walls on which the system is applied should be considered as unprotected under clause 2.6.2 <sup>(1)(2)</sup> of this Standard. See sections 6.1 and 6.2 of this Certificate.
Standard:	<b>2.7</b>	Spread on external walls
Comment:		The system has not been classified as 'non-combustible' and therefore, the use will be restricted under clause 2.7.1 <sup>(1)(2)</sup> of this Standard. See sections 6.1 and 6.2 of this Certificate.
Standard:	<b>2.8</b>	Spread from neighbouring buildings
Comment:		Test data to BS 476-3 : 2004 indicate that the system, when applied to a 'non-combustible' substrate, can be regarded as having low vulnerability under clause 2.8.1 <sup>(1)(2)</sup> of this Standard. See sections 6.1 and 6.2 of this Certificate.
Standard:	<b>3.10</b>	Precipitation
Comment:		Tests for water resistance on the system indicate that the use of the system can enable a roof and wall to satisfy the requirements of this Standard, with reference to clause 3.10.1 <sup>(1)(2)</sup> . See sections 5.1 and 5.2 of this Certificate.
Regulation:	<b>12</b>	<b>Building standards — conversions</b>
Comment:		All comments given for this system under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation:	<b>B2</b>	Fitness of materials and workmanship
Comment:		The system is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	<b>B3(2)</b>	Stability of certain materials
Comment:		The system is acceptable. See sections 9.1 to 9.3 of this Certificate.
Regulation:	<b>C4(b)</b>	Resistance to ground moisture and weather
Comment:		Tests for water resistance on the system indicate that the use of the system can enable a roof and wall to satisfy the requirements of this Regulation. See sections 5.1 and 5.2 of this Certificate.
Regulation:	<b>E5</b>	External fire spread
Comment:		Test data to BS 476-3 : 2004 indicate that on suitable substructures the use of the system can enable a roof to be unrestricted under the requirements of this Regulation. See sections 6.1 to 6.3 of this Certificate. The system has not been classified as 'non-combustible'. Areas on walls on which the system is applied should be considered as unprotected under this Regulation. See sections 6.1 and 6.2 of this Certificate.

## Construction (Design and Management) Regulations 2007

## Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See sections: 1 *Delivery and site handling* (2.1 and 2.4) and 12 *Precautions* part of this Certificate (12.1 and 12.2).

# Non-regulatory Information

## NHBC Standards 2007

NHBC accepts the use of the Aperture Weathering System, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies*.

## Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, the Aperture Weathering System, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Flat roofs*.

## General

This Certificate relates to the Aperture Weathering System, based on one-component, liquid-applied polyurethane technology and is used for weatherproofing penetrations through roofs and walls, roof junction details and gutters.

The system should only be installed by the Certificate holder's trained employees.

The components of the system are manufactured in the UK.

## Technical Specification

### 1 Description

1.1 The Aperture Weathering System is a cold liquid-applied, polyurethane membrane reinforced with an embedded fibreglass matting.

1.2 The system is applied by brush or roller to weatherproof penetrations through roofs and walls, roof junction details and gutters with a minimum coating thickness of 1.7 mm.

1.3 The system is built up by applying the following components on site:

- Aperture MC binder/sealer — a single-component stabiliser and primer for use on concrete, mastic asphalt and bituminous felt substrates prior to the application of Aperture embedment coating
- Aperture embedment coat — a one-component, liquid-applied polyurethane coating that cures to form an elastomeric waterproofing membrane
- Aperture regular glassfibre mat — a chopped strand glass mat with a nominal weight per unit area of 100 gm<sup>-2</sup> for embedding into the Aperture embedment coating for reinforcement
- Aperture protection coat — a one-component, liquid-applied coating based on polyurethane technology that cures to form an elastomeric waterproofing and UV-resistant coating. It is available in white, dove grey, slate grey, verdigris and rustic red colours.

1.4 Other materials available for use with the system include:

- Aperture MC bonding primer — a one-component primer for use on plastic, eg PVF<sub>2</sub>, polyester/acrylic coatings and GRP
- Aperture MC metallic primer — a one-component anti-corrosive primer for use on steel
- Torkill fungicidal solution W — a biocidal wash for use on masonry against mould, fungi, moss.

### Quality control

1.5 A series of quality control checks are performed by the Certificate holder on incoming raw materials, during production and on the finished components.

### 2 Delivery and site handling

2.1 The liquid components of the system are delivered to site in sealed containers labelled with the manufacturer's name, product description and the appropriate hazard and risk labels. They are available in the pack sizes given in Table 1.

2.2 All containers should be stored under cover in a cool, dry and ventilated place away from other chemicals and protected from frost. Components kept in sealed unopened containers and stored in accordance with the manufacturer's instructions will have a shelf-life as detailed in Table 1.

Table 1 Pack weights and storage lives

Component	Pack size (litres)/weight (kg)	Storage life (months)
Aperture MC binder/sealer	5/5.4	12
Aperture embedment coat	12.5/17.5	6
Aperture protection coat	12.5/19.2	6
Aperture MC bonding primer	5/6.9	6
Aperture metallic primer	5/5.9	12

2.3 The Aperture regular glassfibre mat is delivered to site in rolls with the following nominal dimensions and weight:

Length (m)	200
Width (cm)	100
Roll weight (kg)	21

2.4 The materials are classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP3)* and bear the appropriate hazard warning label. The flashpoints and classification of components are given in Table 2.

Table 2 Flashpoint and hazard classification of components

Products/components <sup>(1)</sup>	Flashpoint (°C)	Classification
Aperture MC binder/sealer	45	Flammable, Harmful by inhalation, May cause sensitisation by inhalation and skin contact, Irritating to eyes, respiratory system and skin
Aperture embedment coat	43	Flammable, Harmful by inhalation, May cause sensitisation by inhalation and skin contact
Aperture protection coat	43	Flammable, Harmful by inhalation, May cause sensitisation by inhalation and skin contact
Aperture MC bonding primer	35	Flammable, Harmful by inhalation, May cause sensitisation by inhalation and skin contact
Aperture metallic primer	38	Flammable, Harmful by inhalation, May cause sensitisation by inhalation and skin contact, Irritating to eyes, respiratory system and skin
Aperture Fibretex	45	Flammable, Harmful by inhalation, May cause sensitisation by inhalation and skin contact, Irritating to eyes
Aperture solvent	23	Flammable, Harmful by inhalation and in contact with the skin. Irritating to eyes and skin

(1) These components should be stored in accordance with the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations (1972).

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Aperture Weathering System.

## Design Considerations

### 3 General

3.1 The Aperture Weathering System is satisfactory for use as a waterproof system on flat or pitched roofs with limited access and walls for weatherproofing penetrations, eg pipes, rooflights, sunpipes, roof junction details and gutters.

3.2 The system must not be used in contact with hot pipes, flues.

3.3 Flat roofs are defined for the purpose of this Certificate as those roofs having a minimum finished fall of 1:80. Pitched roofs are defined as those having falls in excess of 1:6.

3.4 Decks to which the product is to be applied must comply with the relevant requirements of BS 8218 : 1998, BS 8217 : 2005 or, where appropriate, *NHBC Standards 2007*, Chapter 7.1 or the *Zurich Building Guarantee Technical Manual 2007*, pages 268 to 270.

3.5 Limited access roofs are defined for the purpose of this Certificate as those roofs subjected only to pedestrian traffic for maintenance of the roof covering and cleaning of gutters.

3.6 The system can be used on a range of substrates including concrete, asphalt<sup>(1)</sup> and roofing felt<sup>(1)</sup> using the appropriate primer. Acceptable adhesion to other substrates should be confirmed by test.

(1) Due to the variable nature of these substrates, acceptable adhesion should be confirmed by test.

### 4 Practicability of installation

Installation must be carried out only by trained employees of the Certificate holder.

### 5 Weathertightness



5.1 Tests confirm that the Aperture Weathering System will adequately resist the passage of moisture to the inside of the building and so meet the requirements of national Building Regulations thus:

**England and Wales** — Approved document C, Requirement C2(b), Section 5.1

**Scotland** — Regulation 9, Mandatory Standard 3.10, clause 3.10.1<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Regulation C4(b).

5.2 The system will maintain its integrity as a weathertight coating under normal conditions of exposure and can accept, without damage, minor movements of the substrate (see the *Technical Investigations* section, Table for *Performance tests*).

## 6 Properties in relation to fire



6.1 When tested in accordance with BS 476-3 : 2004 the system applied to a substructure comprising a 6 mm calcium silicate board and two layers of a 2 mm thick bituminous felt achieved an EXT.F.AA rating.

6.2 The designation of other specifications, (eg on combustible substrates and sloping orientation) should be confirmed by:

**England and Wales** — Test or assessment in accordance with Approved Document B, Appendix A, Clause A1

**Scotland** — Test to conform to Mandatory Standard 2.8, clause 2.8.1<sup>(1)(2)</sup>

(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.

6.3 The system has not been classified as 'non-combustible'. Areas on walls on which the system is applied should be considered as unprotected. Guidance on the limitations of use of the system in relation to the height of the building and boundary positions is given in the national Building Regulations.

## 7 Adhesion

The adhesion of the system to the substrates listed under section 3.6 is sufficient to resist the effects of any wind suction, elevated temperature, thermal shock or structural movement likely to occur in practice. Acceptable adhesion to other substrates should be confirmed by test, (see the *Technical Investigations* section Table for *Performance tests*).

## 8 Resistance to mechanical damage

8.1 Tests indicate that the system can accept, without damage, the limited foot traffic, light concentrated loads associated with installation and maintenance operations and minor movement of the substrate. Reasonable care is required, however, to avoid puncture by sharp objects, (see the *Technical Investigations* section Table for *Performance tests*).

8.2 Persons on the roof should wear suitable footwear and any equipment carried onto the roof should be placed on suitable protection to prevent damage to the system.

## 9 Maintenance



9.1 Roofs should be inspected annually in autumn after leaf fall and in the spring to ensure vegetation and other debris are cleared from the roof and drainage outlets cleared.

9.2 Washing of the system may be carried out using a mild detergent, water and soft brush. Strong alkali solutions eg caustic soda or bleach must not be used.

9.3 In the event that the system is contaminated by chemicals, oils and greases then the advice of the Certificate holder should be sought.

## 10 Durability



Accelerated weathering tests confirm that satisfactory retention of physical properties is achieved and with adequate maintenance and repair the system would be expected to have a service life of up to 25 years.

# Installation

## 11 General

11.1 The Aperture Weathering System must be applied in accordance with the Certificate holder's instructions. Work must not be carried out if rain is imminent and the ambient temperature at the time of laying must lie between 3°C and 35°C. If the rainfall occurs shortly after installation (ie before a reasonable skin has formed), the coating should be inspected for damage and, if necessary, remedial action taken in accordance with the Certificate holder's instructions.

11.2 Substrates to which the system is to be applied must be dry, clean and free from loose particles, fungal growth, paint, grease, oil or other contaminants which may affect the adhesion. The Certificate holder's advice should be sought for suitable cleaning procedures and the use of Torkill fungicidal solution W.

11.3 Previously coated areas must be checked for integrity and adequate adhesion to the substrate.

11.4 Defects in the substrate, eg cracks should be suitably repaired prior to application, in accordance with the Certificate holder's instructions.

11.5 A bond breaking tape should be used either side of active cracks or joints. The Certificate holder should be consulted for details.

11.6 The substrate should be prepared and primed in accordance with the Certificate holder's instructions. Where necessary adhesion checks should be carried out to ensure that the system is fully compatible with the existing surfaces and to determine the necessity for a primer.

11.7 All equipment should be cleaned after use with a proprietary cleaner. The Certificate holder's advice should be sought on a suitable cleaning product.

## 12 Precautions

12.1 Vapours from components of the system may cause sensitisation and irritation to the respiratory system, eyes and skin. The system should be used only in areas with sufficient ventilation to prevent the build-up of vapours. Contact with the skin, eyes and clothes must be avoided. The Certificate holder's material safety data sheets must be consulted for detailed information on the safe handling and use of these components.

12.2 The system components must not be allowed to get into the waste drainage system.

## 13 Procedure

13.1 To all upstands, plinths, hard edges or any other vulnerable details one coat of Aperture Fibretex should be applied at a coverage rate of 1 m<sup>2</sup> per litre and allowed to dry firm.

13.2 A coat of Aperture embedment coat is then applied by brush or roller to the clean prepared substrate at a minimum application rate of 0.75 lm<sup>-2</sup>.

13.3 Whilst wet, Aperture regular glassfibre mat is laid and embedded into the wet coating using a brush or roller until fully saturated allowing at least a 50 mm overlap over adjacent areas and ensuring sufficient embedment material is applied to these areas.

13.4 At this point a check should be made to ensure that sufficient embedment material has been applied by noting areas of exposed matting or pinholing. If necessary, additional coating material may be applied to correct any visible faults and to ensure that there are no tented areas.

13.5 When dry a check should be made for any upstanding glassfibre strands. These should be cut flush with the surface using a sharp knife and overcoated with Aperture embedment coat and allowed to dry.

13.6 Two coats of Aperture protection coat are then applied by brush, roller or airless spray at a minimum application rate of 0.63 lm<sup>-2</sup> allowing the first coat to dry before applying the second coat. It is recommended that different coloured top coats are applied to enable easier monitoring of the application of the second coat.

13.7 A check should be made for the presence of pinholes and missed areas. These should be rectified by applying additional coating as necessary.

13.8 If additional slip resistance is required, an extra coat of Aperture protection coat should be applied at a minimum coverage rate of 0.25 lm<sup>-2</sup> and whilst wet broadcast with a suitable anti-slip grit. The Certificate holder should be consulted for suitable grit and broadcast rates.

## 14 Repair

14.1 Any damage to the system must be repaired as soon as possible to ensure that the waterproofing integrity of the system is maintained.

14.2 The system 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 50 mm onto the existing coating.

# Technical Investigations

## 15 Tests

Specimens of the system were prepared by the manufacturer and tested by the BBA. The results of the tests are summarised in Table 3 to 5.

Test (units)	Mean result	Method <sup>(1)</sup>
Density (g cm <sup>-3</sup> )		BS 3900-A19
Aperture MC binder/sealer	0.99	
Aperture embedment coat	1.30	
Aperture protection coat	1.45	
Ash content (%)		BS EN ISO 3451-1
Aperture embedment coat	31.9	
Aperture protection coat	45.1	
Volatile content (%)		BBA <i>ad-hoc</i> method <sup>(2)</sup>
Aperture MC binder/sealer	48.3	

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) 1 g of material dried at 105°C for 48 hours.

Table 4 Physical properties — general

Test (units)	Mean result	Method <sup>(1)</sup>
Weight per unit area (gm <sup>-2</sup> )		BBA <i>ad-hoc</i> method
Aperture regular glassfibre mat	102	
Aperture Weathering System <sup>(2)</sup>	2146	
Water absorption (%)	6.9	BS EN ISO 62
Water vapour permeability (gm <sup>-2</sup> day <sup>-1</sup> )	4.8	BS 3177 <sup>(3)</sup>
Water vapour resistance (MNsg <sup>-1</sup> )	42.6	BS 3177 <sup>(3)</sup>
Tensile strength/elongation (Nmm <sup>-2</sup> /%)		EN ISO 527-1 and 3
control	9.9/3.1	
after heat ageing <sup>(4)</sup>	5.0/13.3	
after UV ageing <sup>(5)</sup>	6.4/5.9	
exposure to surface water <sup>(6)</sup>	5.3/11.5	
Low temperature flexibility	Satisfactory at -15°C	MOAT 27 (5.4.2)

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) Including Aperture regular glassfibre mat.

(3) 25°C/0–75% RH.

(4) 100 days at 80°C.

(5) 1000 MJ m<sup>-2</sup>(UV-A)

(6) 60 days at 60°C.

Table 5 Performance tests

Test (units)	Mean result	Method <sup>(1)</sup>
Watertightness <sup>(2)</sup>	Watertight	EOTA TR 003
Tensile bond strength (Nmm <sup>-2</sup> )		EOTA TR 004
Concrete substrate		
control	1.58 (mainly membrane cohesive failure)	
exposure to surface water <sup>(3)</sup>	1.38 (mainly membrane cohesive failure)	
heat aged <sup>(4)</sup>	1.74 (substrate failure)	
embedment coat day joints	1.59 (substrate failure)	
embedment coat day joints after exposure to surface water <sup>(3)</sup>	1.35 (mainly membrane cohesive failure)	
embedment coat day joints after heat ageing <sup>(4)</sup>	1.69 (substrate failure)	
Felt substrate		
control	0.35 (mainly failure between felt/primer)	
exposure to surface water <sup>(3)</sup>	0.38 (mainly failure between felt/primer)	
heat aged <sup>(4)</sup>	1.44 (failure of felt)	
Asphalt substrate		
control	0.47 (asphalt/membrane cohesive failure)	
exposure to surface water <sup>(3)</sup>	0.42 (asphalt/membrane cohesive failure)	
heat aged <sup>(4)</sup>	1.01 (asphalt/membrane cohesive failure)	
Resistance to fatigue <sup>(5)</sup>		EOTA TR 008
control	Watertight after 1000 cycles	
after heat ageing <sup>(4)</sup>	Watertight after 50 cycles	
Resistance to cracking at -10°C (mm)	2.2 <sup>(6)</sup>	BBA method T1/12
Resistance to dynamic impact		EOTA TR 006
control on hard substrate	I <sub>4</sub>	
control on soft substrate	I <sub>3</sub>	
-20°C on hard substrate	I <sub>4</sub>	
-20°C on hard substrate after heat ageing <sup>(4)</sup>	I <sub>3</sub>	
-10°C on hard substrate after UV ageing <sup>(7)</sup>	I <sub>4</sub>	
Resistance to static indentation		EOTA TR 007
control on hard substrate	L <sub>4</sub>	
control on soft substrate	L <sub>4</sub>	
80°C on hard substrate	L <sub>1</sub>	
80°C on hard substrate after exposure to surface water <sup>(3)</sup>	L <sub>1</sub>	
Slip resistance (coefficient of friction)		BBA T1/10
dry	0.77	
wet	0.25	
Colour change after exposure to UV-A <sup>(7)</sup> (ΔE*) <sup>(8)</sup>		CIELAB colour space measurements
white	8.05	
verdigris	1.23	
rustic red	4.57	
slate grey	1.10	
dove grey	3.33	

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) Water pressure of 10 kPa applied for 24 hours.

(3) 60 days at 60°C.

(4) 200 days at 70°C.

(5) 50 mm bond breaking tape applied centrally along the 1 mm initial crack.

(6) 26 mm crack length in the membrane at 2.2 mm substrate crack width.

(7) 1000 MJm<sup>-2</sup> (UV-A).

(8) Measured total colour difference (ΔE\*) between control and exposed specimens after washing.

## **16 Investigations**

16.1 An assessment was made of independent fire test reports relating to the system's performance in respect of spread of flame and fire penetration to BS 476-3 : 2004.

16.2 An assessment was made of existing sites in the UK to assess the in-service performance of the system.

16.3 The manufacture and production control procedures at the manufacturing location were assessed and details were obtained on the quality and composition of the materials used.



## Bibliography

- BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*
- BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*
- BS 3900-A19 : 1998 *Methods of test for paints — Determination of density by the pyknometer method*
- BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*
- BS 8218 : 1998 *Code of practice for mastic asphalt roofing*
- BS EN ISO 62 : 1999 *Plastics — Determination of water absorption*
- BS EN ISO 3451-1 : 1997 *Plastics — Determination of ash — General methods*
- EN ISO 527-1 : 1996 *Methods of testing plastics — Mechanical properties — Determination of tensile properties — General principles*
- EN ISO 527-3 : 1996 *Plastics — Determination of tensile properties — Test conditions for films and sheets*
- MOAT No 27 : 1983 *General Directive for the Assessment of Roof Waterproofing Systems*
- EOTA Technical Report TR 003 (May 2004), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the watertightness*
- EOTA Technical Report TR 004 (May 2004), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the resistance to delamination*
- EOTA Technical Report TR 005 (May 2004), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the resistance to wind loads of partially bonded roof waterproofing membranes*
- EOTA Technical Report TR 006 (May 2004), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the resistance to dynamic indentation*
- EOTA Technical Report TR 007 (May 2004), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the resistance to static indentation*
- EOTA Technical Report TR 008 (May 2004), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the resistance to fatigue movement*

## 17 Conditions

17.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

17.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

17.4 In granting this Certificate, the BBA is not responsible for:

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

17.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.

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