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Agrément Certificate
11/4871
Product Sheet 1

ALSAN LIQUID-APPLIED ROOF WATERPROOFING SYSTEMS

ALSAN 770

This Agrément Certificate Product Sheet(1) relates to Alsan 770, a reinforced polymethyl methacrylate waterproofing kit for use as a liquid-applied roof waterproofing on flat, pitched and protected zero fall roofs with limited access, and on flat and zero fall blue roofs with limited access.

(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 interior of a building (see section 6).
Properties in relation to fire — the system may enable a roof to be unrestricted under the national Building Regulations (see section 7)
Adhesion – the adhesion of the system is sufficient to resist the effects of any likely wind suction and the effects of thermal or other minor movement likely to occur in practice (see section 8).
Resistance to mechanical damage — the system will accept the limited foot traffic and loads associated with installation and maintenance (see section 9).
Durability — under normal service conditions the system will provide a durable roof waterproofing with a service life in excess of 25 years (see section 11).

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 Fourth issue: 11 July 2022

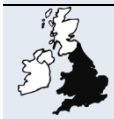
Originally certificated on 18 November 2011

Hardy Giesler
Chief Executive Officer

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 MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

Regulations

In the opinion of the BBA, Alsan 770, 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(1)**	**External fire spread**
Comment:		The system is restricted in some cases by this Requirement. See section 7.4 of this Certificate.
Requirement:	**B4(2)**	**External fire spread**
Comment:		On suitable substructures the use of the system may enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 to 7.3 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The system can satisfy this Requirement. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See section 11 and the *Installation* 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 requirement of this Regulation. See sections 10.1 and 11 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.6	Spread to neighbouring buildings
Comment:		The system is restricted in some cases by this Standard, under clause 2.6.4(1)(2). See section 7.5 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when applied to a suitable substructure, can achieve a low vulnerability rating under clause 2.8.1(1)(2) of this Standard. See sections 7.1 to 7.3 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 of this Certificate.
Standard:	7.1(a)	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 made 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)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The system is acceptable. See section 11 and the *Installation* part of this Certificate.

Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The system can enable a roof to satisfy the requirements of this Regulation. See section 6 of this Certificate.
Regulation:	**36(b)**	**External fire spread**
Comment:		On suitable substructures the use of the system can be unrestricted by the requirements of this Regulation. See sections 7.1 to 7.3 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* and 13 *Site and Surface Preparation* of this Certificate.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, Alsan 770, 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 *Flats roofs, terraces and balconies*.

The NHBC Standards do not cover the use of the products in the refurbishment of existing roofs.

CE marking

The Certificate holder has taken the responsibility of CE marking the system in accordance with European Technical Approval ETA-12/0510 issued under ETAG 005 : 2004 Parts 1 and 4.

Technical Specification

1 Description

1.1 Alsan 770 is a liquid-applied roof waterproofing kit comprising:

- Alsan 770 — a polymethyl methacrylate waterproofing system component
- Alsan 770 TX — a thixotropic version of the standard resin, for use in detailing at upstands, corners, connections and other details
- Alsan RS Fleece — a polyester fleece, for use as a reinforcement in the system
- Alsan RS Fleece P — a perforated polyester fleece, for use as a reinforcement in the system
- Alsan 172 — a primer based on a two-part reactive polymethyl methacrylate, for the preparation of asphaltic and bituminous substrates
- Alsan 170 — a primer based on a two-part reactive polymethyl methacrylate, for the preparation of absorbent substrates such as concrete, screeds and timber.

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

- Alsan 870 RS self-levelling mortar — for use in levelling rough substrates of less than 10 mm depth, levelling of gradients, and as additional protection in heavily trafficked areas
- Alsan 072 RS mortar — for use in levelling rough substrates of greater than 10 mm depth and levelling of gradients
- Alsan 970 F — pigmented surface sealant, based on polymethyl methacrylate
- Alsan Deco Chips — stone chips available in black, grey and white, for use as a decorative surface sealant coat
- Alsan 972 F — a surface finish, based on polymethyl methacrylate
- Alsan Joint (sliding) Tape — for use in providing a bond breaker at expansion/construction joints
- Alsan 074 — for use in filling small cracks and areas of joints in the substrates
- Alsan 076 Cleaner — for use in cleaning the substrate prior to the installation of the system
- Alsan 075 — a thixotropic and fibre-filled PMMA-based waterproofing product for sealing minor penetrations, eg screws
- Alsan 171 — a PMMA primer for mixed substrate applications
- Alsan 173 — a single-component specialist TPO primer for PMMA applications
- Alsan 174 — a single-component specialist metal primer for PMMA applications
- Alsan 175 — a single-component specialist glass primer for PMMA applications
- Alsan 176 — a scratch-filling PMMA primer for porous substrates
- Alsan 970 FT — a transparent, UV-stabilised, PMMA resin seal
- Alsan 971 F — a PMMA primer textured coating
- Alsan 973 F — a white reflective layer for the Alsan PMMA Reflect Roof system
- Aquadere — cold applied bitumen emulsion primer (solvent free), used to increase adherence for bitumen-based waterproofing membranes
- Sopraboard – bituminous protection board reinforced with glass mat
- Sopravap Stick A15 — a self-adhesive SBS modified bitumen membrane with a composite aluminium reinforcement (polyester and aluminium).
- Sopravap Stick S16 – a self-adhesive SBS modified bitumen membrane with a composite glass grid polyester / glass fleece reinforcement.
- Sopralene Stick 30 DuO – self-adhesive SBS membrane reinforced with glass fibre
- Soprabond 525 — a single-component polyurethane liquid applied adhesive, for bonding insulation boards to the substrate
- Coltack Evolution CA or Coltack Evolution 750 — a single-component polyurethane spray-applied adhesive, for bonding insulation boards to the substrate
- Sopratherm G – a PU insulation covered with mineral coated glass fibre.

1.3 In accordance with ETAG 005 : 2004 the level of use categories for Alsan 770 are:

working life	W3 (25 years)
climatic zone	S (Severe climate)
imposed load	P4
roof slope	S1 to S4 (<5% to >30%)
surface temperature in use	lowest TL4 (–30°C) highest TH4 (+90°C).

2 Manufacture

2.1 The system components are manufactured by blending raw materials.

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.

2.3 The system components are manufactured by Soprema SAS, Usine de Strasbourg, 14 rue de Saint Nazaire, BP 70215, 67025 Strasbourg Cedex 1, and marketed/distributed in the UK by the Certificate holder.

2.4 The management system of Soprema SAS has been assessed and registered as meeting the requirements of EN ISO 9001 : 2015 by SGS (Certificate FR 18/81842815).

3 Delivery and site handling

3.1 The primer and waterproofing resin components of the system are delivered to site in 10 kg drums bearing the product's name, safety data, batch number, CE mark and the BBA logo incorporating the number of this Certificate. The catalyst for the resin components is supplied in a 100 g plastic bag.

3.2 Resins are stored in ventilated, dry locations, away from heat and oxidising agents and out of direct sunlight, within a storage temperature range of 0°C to 25°C. The resins have a shelf-life of greater than six months if stored correctly and unopened in accordance with the Certificate holder's instructions.

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 Alsan 770.

Design Considerations

4 General

4.1 Alsan 770 is satisfactory for use as waterproofing layer on flat, pitched and protected zero fall roofs with limited access, and on flat and zero fall blue roofs with limited access.

4.2 The system is suitable for use on the following substrates:

- concrete
- roofing screeds
- asphalt
- timber
- existing bitumen coatings
- existing single-ply waterproofing
- existing bitumen waterproofing membranes
- metal
- plastic
- glass.

4.3 Decks to which the membranes are to be applied must comply with the relevant requirements of either BS 6229 : 2018 or BS 8217 : 2005 and, where appropriate, *NHBC Standards* 2022, Chapter 7.1.

4.4 Blue roofs are defined for the purpose of this Certificate as flat and zero fall roofs, designed to allow controlled attenuation of rain fall during heavy and storm events, as part of sustainable urban drainage systems (SUDS). 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.

4.5 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc. Where traffic in excess of this is envisaged, special precautions, such as additional protection must be taken (see section 9).

4.6 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.

4.7 Pitched roofs are defined for the purpose of this Certificate as those having a fall greater than 1:6.

4.8 Zero fall roofs are defined for the purpose of this Certificate as having a finished fall which can vary between 0 and 1:80. Reference should also be made to the appropriate clauses in Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*.

4.9 The structural decks to which the membranes are 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.

4.10 Dead loads, wind loading and imposed load specification are 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.

4.11 The drainage systems for zero fall roofs must be correctly designed, and the following points should be addressed:

- provision made for access for maintenance purposes
- for zero fall roofs, it is particularly important to identify the correct drainage points, to ensure that drainage is sufficient and effective

4.12 Insulation materials to be used in conjunction with the system 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 scope, of that Certificate.

4.13 The NHBC requires that the roof membranes, once installed, are inspected in accordance with *NHBC Standards* 2022, Chapter 7.1, Clause 7.1.12, and undergo an appropriate integrity test, where required. Any damage to the membrane is repaired in accordance with section 15 of this Certificate and reinspected.

5 Practicability of installation

The system should only be installed by installers who have been trained and approved by the Certificate holder.

6 Weathertightness

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

7 Properties in relation to fire

7.1 When tested in accordance with CEN/TS 1187 : 2012, Test 4, the products as included in Fire Annex 1 of this Certificate, are classified(1) as B_{ROOF}(t4) in accordance with EN 13501-5 : 2016 and so are unrestricted with respect to proximity to a boundary by the national Building Regulations.

(1) Individual reports are available from the Certificate holder.

7.2 When protected by an inorganic covering (eg gravel or paving slabs) listed in the Annex of Commission Decision 2000/553/EC, the membrane is considered to achieve a B_{ROOF}(t4) classification and so is also unrestricted by the national Building Regulations with respect to proximity to a boundary.

7.3 The designation of other specifications should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

7.4 In England Wales, the system, when used in pitches of greater than 70°, excluding upstands, should not be used on buildings that have a storey at least 18 m above ground level and which 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 or dormitories in boarding schools.

7.5 In Scotland, the system, when used in pitches of greater than 70°, excluding upstands, should not be used on buildings that have a storey at least 11 m above ground level.

8 Adhesion

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

8.2 Where the system is installed over carrier membranes or separation layers on insulation, the resistance to wind uplift is dependent on the cohesive strength of the insulation.

9 Resistance to mechanical damage

9.1 The system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. However, reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

9.2 Where traffic in excess of this is envisaged, such as for maintenance of lift equipment, additional protection to the system in accordance with the Certificate holder's instructions must be provided.

9.3 In areas of heavy pedestrian traffic an additional coat of Alsan 870 RS is applied with a coat of RS 970 F in accordance with the Certificate holder's instructions.

9.4 The system is capable of accepting minor structural movement while remaining weathertight.

10 Maintenance

10.1 The system must be the subject of six-monthly inspections and maintenance in accordance with BS 6229 : 2018, Chapter 7, and the manufacturer's own maintenance requirements, where relevant, to ensure continued satisfactory performance.

10.2 Where damage has occurred it should be repaired in accordance with section 15 and the Certificate holder's instructions.

11 Durability

Under normal service conditions, the system will provide a durable waterproof covering with a service life of at least 25 years.

Installation

12 General

12.1 Installation of the Alsan 770 system must be carried out only by specialist roofing contractors trained and approved by the Certificate holder, in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*, the Certificate holder's instructions and this Certificate.

12.2 Substrates to which the system is to be applied must be sound, dry, clean and free from sharp projections such as nail heads and concrete nibs. Rough substrates are made good using the appropriate levelling compound in accordance with the Certificate holder's instructions.

12.3 Where necessary, substrate priming is carried out in accordance with the Certificate holder's instructions using a lambswool roller.

12.4 Installation should not be carried out during inclement weather (eg rain, fog or snow). When the temperature is below 5°C suitable precautions against surface condensation on the substrate must be taken. The substrate and ambient air temperature for the application of Alsan 770 standard formulation and Alsan 770 TX is between 0°C and 35°C.

12.5 Detailing (eg upstands), should be carried out in accordance with the Certificate holder's instructions.

12.6 Expansion or construction joints are additionally reinforced prior to the application of the main waterproofing layer in accordance with the Certificate holder's instructions.

13 Site and surface preparation

13.1 Vapours from 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 skin, eyes and clothing must be avoided. The manufacturer's instructions and the relevant safety regulations for working procedures must be adhered to at all times.

13.2 The system components must not be allowed to get into the waste drainage system. Care must also be taken to prevent vapours entering the inside of the building, eg by closing doors and windows.

14 Procedures

14.1 Once the substrate has been primed and joint treatments have cured, Alsan 770(1) resin is roll applied at an approximate application rate of 1.7 $kg \cdot m^{-2}$.

14.2 Alsan RS Fleece is applied into the wet resin and embedded using lambswool rollers, ensuring any trapped air pockets are removed.

14.3 A further layer of Alsan 770(1) resin is roll applied to the substrate at an approximate application rate of 1.3 $kg \cdot m^{-2}$, ensuring that the fleece is saturated.

(1) Use Alsan 770 TX when applying over upstands.

15 Repair

The repair of minor damage to the system can be achieved effectively by cleaning back to unweathered material and recoating the damaged area with the membrane at the total application rate stated in section 14.

Technical Investigations

16 Tests

The results of tests were assessed by the BBA to determine:

- tensile strength and elongation
- water vapour diffusion resistance coefficient μ
- watertightness
- tensile bond strength on concrete, steel, bitumen sheet, timber and plastic
- dynamic indentation
- static indentation
- resistance to fatigue cycling
- resistance to low temperatures
- resistance to high temperatures
- heat ageing
- resistance to UV ageing
- resistance to water exposure
- effect of application temperatures
- effect of day joints
- external fire performance
- reaction to fire.

17 Investigations

17.1 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.

17.2 Data on fire performance were assessed.

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 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*

BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*

BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 : Actions on structures — General actions — Snow loads*
NA + A2 : 2018 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*

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 ISO 9001 : 2015 *Quality management systems — Requirements*

ETAG 005 : 2004 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits — Part 1: General;*
ETAG 005 : 2004 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits — Part 4: Specific stipulations for kits on flexible unsaturated polyester*

18 Conditions

18.1 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 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.

18.2 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.

18.3 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.

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

18.5 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.

18.6 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.

SUBSTRATE	PRIMER (optional)	VAPOUR BARRIER (optional)	INSULATION[1] LAYER 1	INSULATION[1] LAYER 2 (Optional)	SEPARATION LAYER	PRIMER	TOP LAYER	SYSTEMS[2]	FIRE REPORTS ASSESSED
Wood Particle Board (Density: 680 kg·m^3 ; thickness ≥ 16 mm) Or non-combustible (A1) substrate with a density of 1850 g·m^2 or more	• Aquadere (Bituminous primer) 200-350 g·m^2 Surface mass	SOPRAVAP STICK S16 SELF ADHERED or Sopravap Stick Alu KSD or other bituminous vapour barriers with a reaction to fire classification E or better	• Sopratherm G 40-140 mm thickness Glued using Coltackk CA (Cold Applied PU adhesive) or Soprabond 525	• Sopratherm G 40-140 mm thickness Glued using Coltackk CA (Cold Applied PU adhesive) or Soprabond 525	• SOPRABOARD 3.2 mm thickness MECHANICALLY FASTENED	• Alsan 172 Roll Applied Application rate of 500 g·m^2	• Alsan 770 Roll Applied Application rate of 2000 g·m^2 2.2 mm thickness	Systems A-1	20388C/D
		SOPRAVAP STICK S16 SELF ADHERED	• Sopratherm G 40-140 mm thickness Coltackk CA (Cold Applied PU adhesive) or Soprabond 525	• Sopratherm G 40-140 mm thickness Glued using Coltackk CA (Cold Applied PU adhesive) or Soprabond 525	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE			Systems A-2	
			• Sopratherm G 140 mm thickness Coltackk CA (Cold Applied PU adhesive) or Soprabond 525	-	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE			Systems A-3	
			• Sopratherm G 40 mm thickness Coltackk CA (Cold Applied PU adhesive)	• Sopratherm G 140 mm thickness Coltackk CA (Cold Applied PU adhesive)	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE			Systems A-4	
			• Sopratherm G 140 mm thickness Coltackk CA (Cold Applied PU adhesive)	• Sopratherm G 140 mm thickness Coltackk CA (Cold Applied PU adhesive)	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE			Systems A-5	

SUBSTRATE	PRIMER (optional)	VAPOUR BARRIER (optional)	INSULATION[1] LAYER 1	INSULATION[1] LAYER 2 (Optional)	SEPARATION LAYER	PRIMER	TOP LAYER	SYSTEMS[2]	FIRE REPORTS ASSESSED
Wood Particle Board (Density: 680 kg·m^3 ; thickness ≥ 16 mm) or non-combustible (A1) substrate with a density of 1850 g·m^2 or more	• Aquadere (Bituminous primer) 200-350 g·m^2 Surface mass		• Sopratherm G 40 mm thickness Coltackk CA (Cold Applied PU adhesive)	-	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE	• Alsan 172 Roll Applied Application rate of 500 g·m^2	• Alsan 770 Roll Applied Application rate of 2000 g·m^2 (each layer) 2.2 mm thickness	Systems A-6	20388C
			• Sopratherm G 40 mm thickness Coltackk CA (Cold Applied PU adhesive)	-	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE			Systems A-7	
			• Sopratherm G 40 mm thickness Soprabond 525 (Liquid PU adhesive)	-	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE			Systems A-8	
Fibre cement board (Density: 1850 kg·m^3 ; thickness ≥ 8 mm)			• Sopratherm G 40 mm thickness Soprabond 525 (Liquid PU adhesive)	-	• Sopralene Stick 30 DuO 2.9 mm thickness SELF ADHESIVE			Systems A-9	

(1) Insulation is outside the scope of this Certificate.

(2) The "SYSTEMS" column refers to the summary of parameters and tested systems listed in the classification report 20388C. Each row within the fire annex represents an independently tested system within the classification report 20388C.

Some products within the fire report 20388C have not been tested by the BBA and are outside the scope of the Certificate. For more information, please refer to Section 1.