

Icopal Limited

Barton Dock Road
Stretford
Manchester M32 0YL

Tel: 0161 865 4444 Fax: 0161 866 9859
e-mail: info.uk@icopal.com
website: www.icopal.co.uk



Agrément Certificate
07/4409
Product Sheet 3

ICOPAL HIGH PERFORMANCE TORCH-ON ROOF WATERPROOFING MEMBRANES

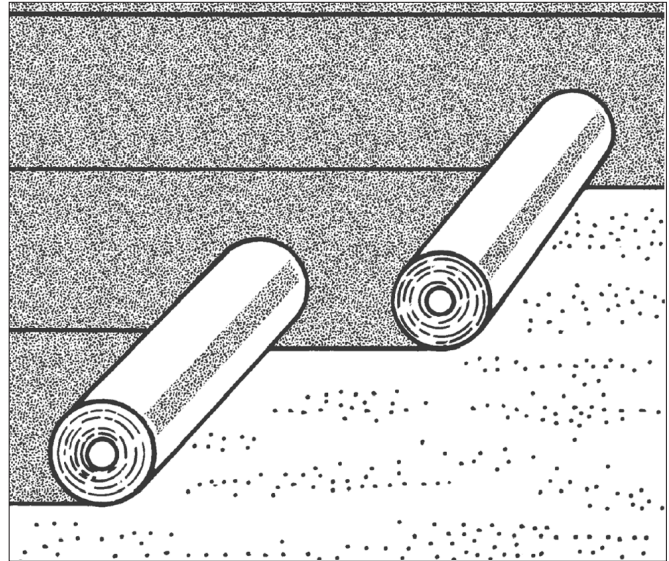
ICOPAL HIGH PERFORMANCE TORCH-ON VAPOUR CONTROL LAYERS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Icopal High Performance Torch-on Vapour Control Layers, a range of reinforced SBS modified bitumen membranes for use on flat and pitched roofs.

(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

Resistance to moisture — the products will provide an effective barrier to the passage of liquid water and water vapour (see section 6).

Resistance to wind uplift — when correctly specified, the products will resist the effects of any wind suction likely to occur in practice (see section 8).

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

Durability — under normal service conditions the products will provide a durable waterproof covering with a service life at least as long as that of the roof waterproofing (see section 11).

The BBA has awarded this Certificate to the company named above for the products described herein. These products 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

A handwritten signature in black ink, appearing to read 'John Albon'.

Date of Second issue: 11 February 2016

John Albon — Head of Approvals

A handwritten signature in black ink, appearing to read 'Claire Curtis-Thomas'.

Originally certificated on 23 May 2007

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.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
fax: 01923 665301
clientservices@bba.star.co.uk
www.bbacerts.co.uk

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Regulations

In the opinion of the BBA, Icopal High Performance Torch-on Vapour Control Layers, 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:	C2(c)	Resistance to moisture
Comment:		The products, including joints, will contribute to a roof meeting this Requirement. See section 6 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The products satisfy the requirements of this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.15	Condensation
Comment:		The products 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 product 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:		All comments given for the products 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)(i)(iii)(b)(i)	Fitness of materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	29	Condensation
Comment:		The products, including joints, will enable a roof to meet this Regulation. See section 6 of this Certificate.

Construction (Design and Management) Regulations 2015

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

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

See sections: 1 *Description* (1.2 and 1.3) and 3 *Delivery and site handling* (3.3) of this Certificate.

Additional Information

NHBC Standards 2016

NHBC accepts the use of Icopal High Performance Torch-on Vapour Control Layers, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards, Chapter 7.1 Flat roofs and balconies*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 13970 : 2004. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

1 Description

1.1 Icopal High Performance Torch-on Vapour Control Layers are reinforced, styrene-butadiene-styrene copolymer (SBS) modified bitumen membranes. The products within the scope of this Certificate are:

- Profiles Vapour-Vent XL — a polyester-reinforced membrane with an aluminised PET core. The upper surface is finished with low-melt bitumen in a striped pattern and a thermofusible film, and the lower surface with a continuous coating of SBS-modified bitumen and a thermofusible film
- Total Torch Vapour Control Layer — a glassfibre-reinforced membrane with a PET core. The upper surface is finished with low-melt bitumen in a striped pattern and a thermofusible film and the lower surface is finished with a continuous coating of SBS-modified bitumen and a thermofusible film.

1.2 The products are manufactured to the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Membrane type	
	Profiles Vapour-Vent XL	Total Torch Vapour Control Layer
Width* (m)	1	1
Length* (m)	7	8
Mass per unit area* (kg·m ⁻²)	4.4	3.87
Watertightness*	pass	pass
Equivalent air thickness* – s _a (m)	>80	>14
Tensile strength* (N·50 mm ⁻¹)		
longitudinal	850	840
transverse	600	550
Elongation at break* (%)		
longitudinal	20	3.5
transverse	30	3.0
Dimensional stability (%)	<0.5	<1.0
Low temperature flexibility* (°C)	-15	-15

1.3 Other materials for use with the products include:

- cap sheets and underlay membranes covered under Product Sheets 1, 2 and 4 of this Certificate
- Icopal QD Bitumen Primer — used, when required, to prepare non-membrane roof substrates prior to the application of the products. The primer is supplied in 25 litre containers.

2 Manufacture

2.1 The products are manufactured using conventional continuous bitumen coating techniques.

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 management system of Icopal Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 and BS EN ISO 14001 : 2004 by BSI (Certificates Q05556 and EMS 535978 respectively).

3 Delivery and site handling

3.1 The products are delivered to site in rolls secured with three printed banding tapes bearing the product name, roll length, batch sticker and BBA logo incorporating the number of this Certificate.

3.2 Rolls must be stored upright on a clean, dry, level surface, under cover and protected from excessive heat and mechanical damage.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the products 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 Icopal High Performance Torch-on Vapour Control Layers.

Design Considerations

4 General

4.1 Icopal High Performance Torch-on Vapour Control Layers are satisfactory for use in roof systems where a high resistance to water vapour is required, as defined in the relevant recommendations of BS 6229 : 2003, in either of the following waterproofing insulation specifications:

- built-up felt roofing to the relevant recommendations of BS 8217 : 2005, or
- roof waterproofing or insulation systems covered by a current BBA Certificate when laid in accordance with, and within the limitations imposed by, that Certificate.

4.2 Suitable decks must be designed in accordance with the relevant recommendations of BS 8217 : 2005, the relevant British Standards listed in BS 6229 : 2003, clause 5.3, and, where appropriate, *NHBC Standards 2016, Chapter 7.1 Flat roofs and balconies*.

5 Practicability of installation

The products are designed to be installed only by competent roofing contractors experienced with this type of product.

6 Resistance to moisture



The products, including joints, when completely sealed and consolidated, provide effective control to the passage of moisture and will contribute to limiting the risk of interstitial condensation.

7 Properties in relation to fire

The fire rating of a roof containing the products will depend on the insulation and/or roof waterproofing and is unlikely to be adversely affected by the presence of the vapour control layer.

8 Resistance to wind uplift

The adhesion of the bonded membranes is sufficient to resist the effects of wind suction, elevated temperature and thermal shock conditions likely to occur in practice.

9 Resistance to foot traffic

The membranes can accept, without damage, the limited foot traffic associated with installation and maintenance. Reasonable care should be taken to avoid sharp objects or concentrated loads.

10 Maintenance

As the products are part of a built-up roof specification and have suitable durability (see section 11), maintenance is not required. However, it must be ensured that any damage occurring before enclosure is repaired (see section 14).

11 Durability



When used in conjunction with the other products covered by this Certificate, the products will have a life at least as long as that of the roof waterproofing.

Installation

12 General

12.1 Installation of Icopal Performance Torch-on Vapour Control Layers is carried out in accordance with the Certificate holder's instructions and the relevant clauses of BS 8000-4 : 1989 and BS 8217 : 2005.

12.2 Deck surfaces must be dry, clean and free from sharp projections such as nail heads and concrete nibs.

12.3 Where required, substrates should be primed with Xtra-Seal QD Bitumen Primer.

12.4 The membranes may be laid in conditions normal to roofing work and must not be laid in rain, snow or heavy fog, nor if the temperature falls below 5°C. At low temperatures precautions must be taken against the formation of condensation on the substrate.

12.5 When torching the membranes adjacent to insulation boards, guards must be used and the flame directed away from the boards to avoid damage to the installation.

13 Procedure

13.1 Bonding is achieved by melting the lower surface of the membrane using a standard roofer's torch.

13.2 The membrane must be heated carefully, ensuring that the thermofusible film is completely removed as work proceeds, and the membrane pressed down onto the prepared substrate, ensuring that a continuous 5 mm bead of bitumen is extruded from all edges and fully bonded.

13.3 Side laps must be a minimum of 75 mm following the manufactured selvedge and end laps a minimum of 100 mm.

13.4 At features such as roof perimeters and upstands, the membrane must be dressed up to ensure a minimum 100 mm overlap with the waterproofing to envelope the insulation.

14 Repair

In the event of damage, the membranes can be effectively repaired, prior to the installation of the upper layers of the system, using traditional methods for bonding bituminous felts. The Certificate holder should be consulted for specific details.

Technical Investigations

15 Tests

Tests were carried out on samples of the membranes to determine:

- thickness
- width
- mass per unit area
- tensile strength and elongation (unaged and heat aged)
- resistance to nail tear
- water vapour transmission
- dimensional stability.

16 Investigations

16.1 The manufacturer's installation instructions were evaluated.

16.2 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.

Bibliography

BS 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*

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 13970 : 2004 *Flexible sheets for waterproofing — Bitumen water vapour control layers — Definitions and characteristics*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

BS EN ISO 14001 : 2004 *Environmental management systems — Requirements*

17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.