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Agrément Certificate
07/4409
Product Sheet 4

ICOPAL HIGH PERFORMANCE TORCH-ON ROOF WATERPROOFING MEMBRANES

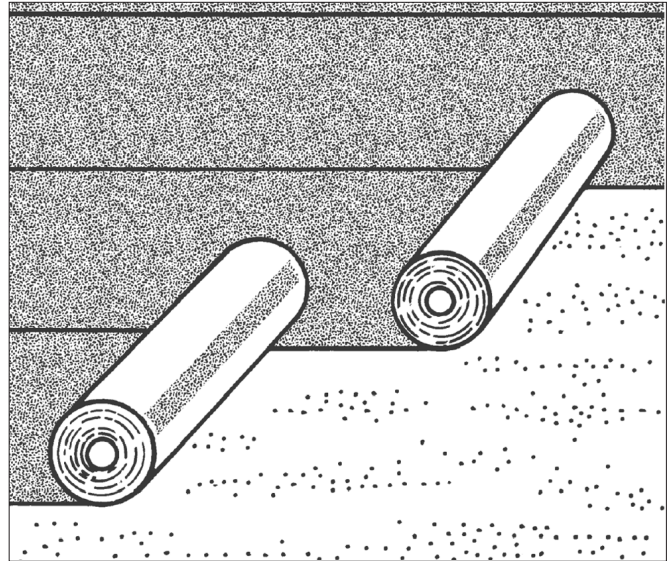
ICOPAL HIGH PERFORMANCE TORCH-ON CAPSHEETS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Icopal High Performance Torch-on Capsheets, a range of polyester-reinforced, SBS modified bitumen membranes for use on flat and pitched 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 products will resist the passage of moisture to the interior of the building (see section 6).

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

Resistance to wind uplift — the products will resist the effects of any likely wind suction acting on the roof (see section 8).

Resistance to mechanical damage — the products will accept the limited foot traffic and loads associated with installation and maintenance (see section 9).

Durability — under normal service conditions, the products will act as part of a durable waterproof system with a service life of at least 35 years (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'.

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

Date of Second issue: 21 September 2018

John Albon — Head of Approvals

Claire Curtis-Thomas

Originally certificated on 23 May 2007

Construction Products

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, Icopal High Performance Torch-on Capsheets, 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 suitable substructures, the products can enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products, including joints, will enable a roof to satisfy this Requirement. See section 6.1 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)(2)	Durability, workmanship and fitness of materials
Comment:		The products satisfy the requirements of this Regulation. See sections 10 and 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		On suitable substructures, the products can be 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 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 6.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards 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:	28(b)	Resistance to moisture and weather
Comment:		The products, including joints, will enable a roof to satisfy this Regulation. See section 6.1 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On suitable substructures, the products can enable a roof to be unrestricted under 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: 1 *Description* (1.3 and 1.4) and 3 *Delivery and site handling* (3.3) of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, Icopal High Performance Torch-on Capsheets, 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*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 13707 : 2013. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Icopal High Performance Torch-on Capsheets include Profiles XL Sand & Mineral, Thermaweld Mineral and Tecnatorch Sand & Mineral. The membranes are polyester-reinforced, styrene-butadiene-styrene (SBS) copolymer modified bitumen torch-on membranes for use as cap sheets in built-up roof waterproofing systems. The upper surface of the Profiles XL and Tecnatorch membranes is either mineral finished or sand finished and the lower surface has a mini-grooved profile finished with a thermofusible film. The upper surface of Thermaweld is a mineral finish and the lower surface has a mini-grooved profile finished with a thermofusible film.

1.2 The mineral finish is available in blue/grey, green, brown and charcoal colours. Tecnatorch is also available in white (made to order only).

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

Characteristic (unit)	Membrane type		
	Profiles XL	Thermaweld	Tecnatorch
Width (m)	1	1	1
Length (m)	7	8	7.5
Mass per unit area* (kg·m ⁻²)			
mineral finished	5.71	5.25	4.97
sand finished	5.71		4.73
Watertightness*	pass	pass	pass
Tensile strength* (N·50 mm ⁻¹)			
longitudinal	900	900	650
transverse	900	900	500
Elongation at break* (%)			
longitudinal	35	35	22
transverse	35	35	30
Dimensional stability* (%)	<0.5	<0.5	<0.5
Low temperature flexibility* (°C)	-20	-20	-15
Straightness* (mm·10 mm ⁻¹)	<20	<20	<20

1.4 Other materials for use with the products include:

- vapour dispersion membranes, vapour control membranes and underlays covered under Product Sheets 2 and 3 of this Certificate
- Siplast Primer and Icopal SF 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
- Thermazone Torch-on PIR Insulation.

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 Limited 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 including the product name, type of surface finish, roll length, colour coding, batch sticker and the 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 Capsheets.

Design Considerations

4 Use

4.1 Icopal High Performance Torch-on Capsheets are satisfactory for use in fully or partially bonded built-up roof waterproofing specifications on flat or pitched roofs with limited access.

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

4.3 When designing flat roofs, twice the minimum finished fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection and direction of falls.

4.4 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof waterproofing, cleaning of gutters, etc. Where traffic in excess of this is envisaged, special precautions such as additional protection to the membrane must be taken.

4.5 Decks to which the products are 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.


4.6 Insulation systems or materials used in conjunction with the products must be approved by the Certificate holder and must be:

- Thermazone Torch-on Insulation, or
- 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 limitations of, that Certificate.

5 Practicability of installation


The products are designed to be installed only by competent roofing contractors experienced with these types of products.

6 Weathertightness

 6.1 The products, including joints when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of the building and so satisfy the requirements of the national Building Regulations.

6.2 The products are impervious to water and, when used as described, will provide a weathertight roofing capable of accepting minor structural movements without damage.

7 Properties in relation to fire

 7.1 The following systems incorporating the products, when tested, were designated as unrestricted under the national Building Regulations:

- a system comprising 18 mm thick plywood primed with Anderson Quick Dry Primer, a fully bonded layer of Total Torch Vapour Control Layer, 50 mm thick polyisocyanurate insulation board, a partially bonded layer of Total Torch Vapour Dispersion Layer and fully-bonded layer of Tecnatorch mineral surfaced cap sheet
- a system comprising 18 mm thick plywood primed with Anderson Quick Dry Primer, a fully bonded layer of Profiles Vapour Vent XL vapour control layer, 50 mm thick polyisocyanurate insulation board, a partially bonded layer of Profiles Vent XL and fully bonded layer of Profiles XL mineral surfaced cap sheet
- a system comprising 18 mm thick plywood primed with Anderson Quick Dry Primer, a fully bonded layer of Total Torch Vapour Control Layer, 50 mm thick polyisocyanurate insulation board, a partially bonded layer of Total Torch Vapour Dispersion layer and fully bonded layer of Olympic Thermaweld mineral surfaced cap sheet.

7.2 When used for flat roofs with one of the surface finishes defined in Part iii of Table A5 of Appendix A of the Building Regulations (England and Wales), or Technical Booklet E, Table 4.6, Part IV of the Building Regulations (Northern Ireland), and listed below, the roof is deemed to be unrestricted:

surface finishes

- bitumen-bedded stone chippings covering the whole surface to a depth of not less than 12.5 mm

- bitumen-bedded tiles of a non-combustible material
- sand and cement screed
- macadam.

7.3 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 — tests to confirm compliance with Mandatory Standard 2.8, with reference to 2.8.1⁽¹⁾⁽²⁾

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

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

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 mechanical damage

The membranes can accept the limited foot traffic associated with installation and maintenance. Reasonable care should be taken to avoid sharp objects or concentrated loads. Where regular traffic is envisaged, eg for maintenance of lift equipment, a walkway should be provided using concrete slabs supported on bearing pads.

10 Maintenance



The membranes should be subjected to regular annual inspections and roof drains kept clear as is good practice with all roofing membranes.

11 Durability



11.1 The membranes, when subjected to normal conditions of use in a roof, will retain their integrity for a period of at least 35 years.

11.2 It is possible that some localised loss of the mineral surfacing may occur, after some years, in areas where complex detailing of the roof design is incorporated.

Installation

12 General

12.1 Installation of Icopal High Performance Torch-on Capsheets is carried out using traditional methods for laying reinforced bitumen membranes in accordance with the Certificate holder's instructions and the relevant clauses of BS 8000-0 : 2014, 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 Vapour control layers, venting layers and underlays, as specified, must be installed in accordance with the manufacturer's instructions.

12.4 Where required, non-membrane substrates should be primed with Siplast Primer or Icopal SF Bitumen Primer.

12.5 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.

12.6 At falls in excess of 5° (1:11) precautions against slippage, and requirements for mechanical fixing as required by BS 8217 : 2005, should be observed.

12.7 If the roof is likely to be subjected to uncontrolled pedestrian access or if the sand finished membranes are used, additional surface protection must be used in accordance with BS 8217 : 2005, clauses 6.12 and 6.13, applied as described in the relevant parts of clause 8.19 of the code and the manufacturer's instructions.

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 pressing the membrane 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 follow the manufactured mineral-free 75 mm wide selvedge and end laps must be a minimum of 150 mm.

13.4 The membrane edges, including end laps, must be offset by at least 300 mm from the underlay edges to avoid a build-up of overlaps.

14 Repair

In the event of damage, the membranes can be effectively repaired, after cleaning, using traditional methods for bonding bituminous felts. The Certificate holder should be consulted for 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
- low temperature flexibility
- water vapour transmission
- dimensional stability
- watertightness
- resistance to static indentation
- resistance to dynamic impact
- peel adhesion.

16 Investigations

16.1 An examination was made of existing test data on roof fire exposure.

16.2 The manufacturer's installation instructions were evaluated.

16.3 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.

16.4 An evaluation of durability was made using data for existing sites for products using the same coating mass formulation.

Bibliography

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

BS 8000-0 : 1914 *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 13707 : 2013 *Flexible sheets for waterproofing — Reinforced bitumen sheets for roof waterproofing — 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.