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Agrément Certificate

23/7047

Product Sheet 1 Issue 1

CALTECH UV SYSTEMS

CALTECH UV

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Caltech UV, for use on new and existing flat and pitched roofs with limited access or pedestrian access, including balconies and terraces.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes.

Product factors:

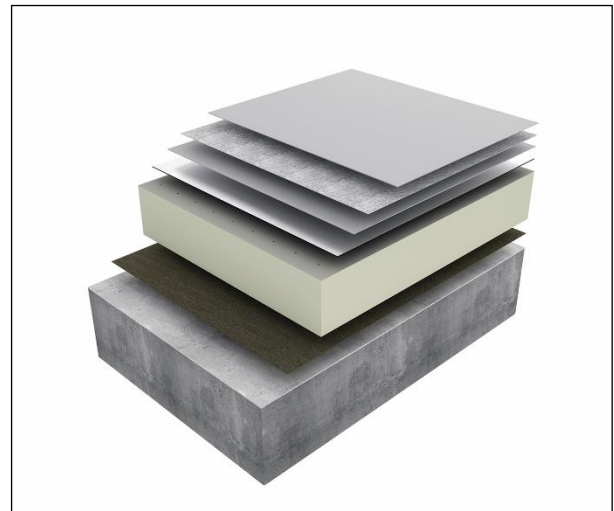
- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



KEY FACTORS ASSESSED

- Section 1. Mechanical resistance and stability
- Section 2. Safety in case of fire
- Section 3. Hygiene, health and the environment
- Section 4. Safety and accessibility in use
- Section 5. Protection against noise
- Section 6. Energy economy and heat retention
- Section 7. Sustainable use of natural resources
- Section 8. Durability

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 issue: 15 December 2023

Hardy Giesler
Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that Caltech UV systems 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 Building Regulations 2010 (England and Wales) (as amended)

Requirement: B4(1)	External fire spread
Comment:	The system is restricted by this Requirement in some circumstances. See sections 2 of this Certificate.
Requirement: B4(2)	External fire spread
Comment:	On suitable substructures, the system may enable a roof to be unrestricted under this Requirement. See sections 2 of this Certificate.
Requirement: C2(b)	Resistance to moisture
Comment:	The system will enable a roof to satisfy this Requirement. See section 3 of this Certificate.
Regulation: 7(1)	Materials and workmanship
Comment:	The system is acceptable. See sections 8 and 9 and Annex A of this Certificate.
Regulation: 7(2)	Materials and workmanship
Comment:	Use of the system on balconies is restricted under this Regulation. See section 2 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)(2)	Fitness and durability of materials and workmanship
Comment:	The system can satisfy the requirements of this Regulation. See sections 8 and 9 of this Certificate.
Regulation: 8(3)	Fitness and durability of materials and workmanship
Comment:	The system is restricted under this Regulation. See section 2 of this Certificate.
Regulation: 9	Building standards applicable to construction
Standard: 2.2	Separation
Comment:	Use of the system on balconies is restricted under clause 2.2.7 ⁽¹⁾ of this Standard. See section 2 of this Certificate.
Standard: 2.6	Spread on neighbouring buildings
Comment:	The system is restricted under clause 2.6.4 ⁽¹⁾⁽²⁾ of this Standard in some circumstances. See section 2 of this Certificate.
Standard: 2.7	Spread to external walls
Comment:	Use of the system is restricted under clauses 2.7.1 ⁽¹⁾⁽²⁾ and 2.7.2 ⁽¹⁾⁽²⁾ of this Standard in some circumstances. See section 2 of this Certificate.

Standard: Comment:	2.8	Spread from neighbouring buildings The system, when applied to a suitable substructure, may enable a roof to be unrestricted by clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See section 3 of this Certificate.
Standard: Comment:	3.10	Precipitation The use of the system will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 6.1 of this Certificate.
Standard: Comment:	7.1(a)	Statement of sustainability 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: Comment:	12	Building standards applicable to conversions Comments in relation to the system under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ .
		(1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation: Comment:	23(1)(a)(i)(ii) (iii)(iv)(b)(i)	Fitness of materials and workmanship The system is acceptable. See sections 8 and 9 and Annex A of this Certificate.
Regulation: Comment:	23(2)	Materials and workmanship Use of the system on balconies is restricted under this Regulation. See section 2 of this Certificate.
Regulation: Comment:	28(b)	The system will enable a roof to satisfy the requirements of this Regulation. See section 3 of this Certificate.
Regulation: Comment:	36(a)	External fire spread The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation: Comment:	36(b)	External fire spread On suitable substructures, the use of the system may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2023

In the opinion of the BBA, Caltech UV, 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, terraces and balconies*.

In addition, in the opinion of the BBA, the system, when installed and used in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards for Conversions and Renovations*, taking account of other relevant guidance within the chapter and the suitability of the substrate to receive the system.

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

Fulfilment of Requirements

The BBA has judged Caltech UV to be satisfactory for use as described in this Certificate. Caltech UV has been assessed as a waterproofing system on new and existing flat and pitched roofs with limited or pedestrian access, including balconies and terraces as described in this Certificate.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment Caltech UV consists of:

- Caltech CR — a single component, moisture curing polyurethane membrane installed by brush, roller or airless spray for exposed applications
- Caltech UV — a single component, moisture curing, thixotropic hybrid polyurea membrane installed by brush, roller or airless spray
- Caltech sealer coat — a single component, elastic aliphatic polyurethane, UV resistant top coat, installed by brush, roller or airless spray, for use over the other membranes in exposed uses
- Caltech F-MAT — a 60 g·m⁻² polyester reinforcement for the system
- Caltech G-MAT — a 225 g·m⁻² glass reinforcement for the system
- Eurorof PU Primer — a single component, solvent based, moisture curing polyurethane primer for use on concrete and bituminous membrane substrates
- Caltech WBP — a two-component, water-based, epoxy primer for use on bitumen membranes and porous substrates.

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

- Caltech SA Fleece Preparation Layer — a proprietary self-adhesive carrier membrane, including a glass facing on the top face, used over modular substrates with joints and as separating layer underneath (carrying) Caltech UV. Also suitable for cracked mineral substrates. Contact the Certificate holder's Technical Services for further advice
- Caltech Preparation Layer — a proprietary self-adhesive carrier membrane used over modular substrates with joints and as separating layer underneath (carrying) Caltech UV. Also suitable for cracked mineral substrates. Contact the Certificate holder's Technical Services for further advice
- Caltech self-adhesive joint tape — a self-adhesive reinforcing tape for specific points of weakness such as joints, cracks, protrusions, and junctions and coupling of same or different materials.

Applications

The system is intended for use on new and existing flat and pitched roofs with limited or pedestrian access, including balconies and terraces. The systems are suitable for use on the following substrates:

- concrete
- reinforced bitumen membranes (including sanded and mineral surfaced).

Definitions for systems and applications inspected.

The following terms are defined for the purpose of this Certificate as:

- flat roof — a roof having a minimum finished fall of 1:80
- pitched roof — a roof having a fall in excess of 1:6
- limited access roof — a roof subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc
- pedestrian access roof — a roof that is not subjected to vehicular traffic.

Product assessment – key factors

The system was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Not applicable.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 External fire spread.

2.1.1 When tested to CEN/TS 1187 : 2012, Test 4 and classified to EN 13501-5 : 2016, the constructions given in Table 1 of this Certificate achieved BROOF(t4) for slopes below 10°.

Table 1 Systems given B_{ROOF(t4)} classification

Substrate	Base coat	Reinforcement	Top coat	UV protection coat
Fibre cement board 5 to 20 mm thick	Caltech UV applied at a rate of 1.5 kg·m ⁻²	Caltech G-MAT	Caltech UV applied at a rate of 1.8 kg·m ⁻²	—
Fibre cement board ≥ 8 mm thick	Caltech CR applied at a rate of 2.0 kg·m ⁻²	Caltech F-MAT or Caltech G-MAT	Caltech CR applied at a rate of 3.9 kg·m ⁻²	—
	Caltech UV applied at a rate of 2.0 kg·m ⁻²		Caltech UV applied at a rate of 3.9 kg·m ⁻²	—
	Caltech UV applied at a rate of 1.5 kg·m ⁻²		Caltech UV applied at a rate of 1.0 kg·m ⁻²	Caltech sealer coat applied at a rate of 0.3 kg·m ⁻²

2.1.2 On the basis of data assessed, constructions listed in Table 1 will be unrestricted by the documents supporting the national Building Regulations with respect to proximity to a relevant boundary.

2.1.3 When used in conjunction with one of the inorganic coverings listed in the Annex of Commission Decision 2000/553/EC, the system will be similarly unrestricted.

2.1.4 The designation and permissible areas of use of other specifications should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

2.2 Reaction to fire

2.2.1 The Certificate holder has not declared a reaction to fire classification for the Caltech UV system.

2.2.2 On the basis of data assessed, the Caltech UV system will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.2.3 In England, the system, when used for roof pitches of greater than 70°, excluding upstands, should not be used less than 1 m from a relevant boundary, or on residential buildings more than 11 m in height or on other buildings more than 18 m in height. These constructions should also be included in calculations of unprotected area.

2.2.4 In Wales, the system, when used for roof pitches greater than 70°, excluding upstands, should not be used less than 1 m from a relevant boundary, or on other buildings more than 18 m in height or in some cases, on assembly and recreation buildings. These constructions should also be included in calculations of unprotected area.

2.2.5 In Scotland and Northern Ireland, the system used in pitches greater than 70°, excluding upstands, that do not achieve the minimum Class E reaction to fire classification to BS EN 13501-1 : 2018, designers should seek guidance on the proposed use of the system from the relevant Building Control Body.

2.2.6 In England, the system should not be used exposed on balconies on residential buildings with a storey 11 m or more in height or on buildings that have a storey more than 18 m above ground level and which contain: one or more dwelling, an institution, a room for residential purposes, a room in a hostel, hotel or boarding house, student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.

2.2.7 In Wales and Northern Ireland, the system should not be used exposed on balconies 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 and additionally, in Northern Ireland, nursing homes and places of lawful detention.

2.2.8 In Scotland, the system should not be used on balconies of buildings with a storey 11 m or more above the ground.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

3.1.1 Results of weathertightness tests are given in Table 2.

<i>Table 2 Weathertightness results</i>			
System assessed	Assessment method	Requirement	Result (Mean)
Caltech UV (Glass mat system)	Watertightness by exposure to 60 kPa BS EN 1928 : 2000 (method B)	No evidence of water leakage	Pass
Caltech UV	Water vapour transmission properties BS EN 1931 : 2000	Value achieved	S _d (equivalent air layer thickness): 0.815 m
Caltech UV (Glass mat system)	Delamination to EOTA TR 004 : 2004 (on concrete)	≥50 kPa	Pass
Caltech UV (Glass mat system)	Delamination to EOTA TR 004 : 2004 (mineral on insulation)	≥50 kPa	Pass
Caltech UV (Glass mat system)	Delamination to EOTA TR 004 : 2004 (mineral on Concrete)	≥50 kPa	Pass
Caltech UV (Polyester mat system)	Crack bridging to EOTA TR 013 : 2004 (on concrete) Control	Water leakage	Pass

3.1.2 The weathertightness of the system was assessed using test data from a representative related system applied at the same application rate and met the requirement of remaining watertight when subjected to a one-metre head of water for 24 hours.

3.1.3 On the basis of data assessed, the system will adequately resist the passage of moisture to the inside of a building and so satisfy the requirements of the national Building Regulations.

3.1.4 On the basis of data assessed, the adhesion of the system is sufficient to resist the effects of wind suction, elevated temperature and thermal shock conditions likely to occur in practice and remain weathertight.

3.1.5 The resistance to wind uplift for warm roofs will be dependent on the cohesive strength of the insulation and the method by which it is secured to the roof deck. This must be taken into account when selecting a suitable insulation material.

3.2 Resistance to mechanical damage

3.2.1 Results of resistance to mechanical damage tests are given in Table 3.

Table 3 Mechanical resistance results

System assessed	Assessment method	Requirement	Result
Caltech UV	Tensile strength and Elongation to BS EN ISO 527-1 : 2019 and BS EN ISO 527-4 : 1997 Control Control cured for 21 days at 5°C Control cured for 21 days at 35°C	Value achieved	979 N per 50 mm/2.97 % 945 N per 50 mm/3.50 % 1317 N per 50 mm/2.97 %
Caltech UV (Glass mat system)	Dynamic indentation to EOTA TR 006 (on steel) Control tested at 21°C Control tested at -30°C Control cured for 21 days at 5°C Tested at 21°C Control cured for 21 days at 35°C Tested at 21°C	Value achieved	 I ₄ I ₄ I ₄ I ₄
Caltech UV (Glass mat system)	Dynamic indentation to EOTA TR 006: 2004 ((on mineral and insulation) Tested at 20°C	Value achieved	 I ₄
Caltech UV (Polyester mat system)	Dynamic indentation to EOTA TR 006: 2004 ((on mineral and insulation) Tested at 20°C	Value achieved	 I ₄
Caltech UV (Glass mat system)	Static indentation to EOTA TR 007 : 2004 (on steel) Control tested at 20°C Control tested at 90°C	Value achieved	 L ₄ L ₄
Caltech UV (Glass mat system)	Static indentation to EOTA TR 007 : 2004 (on mineral and insulation) Tested at 20°C	Value achieved	 L ₄
Caltech UV (Polyester mat system)	Static indentation to EOTA TR 007 : 2004 (on mineral and insulation) Tested at 20°C	Value achieved	 L ₄
Caltech UV (Glass mat system)	Fatigue to EOTA TR 008 : 2004 (on concrete) (1000 cycles at -10°C)	No evidence of leakage after 24 hours exposure to 100 mm head of water. No debonding, or if any not exceeding 75 mm in total or 50 mm on one side of the gap	Pass

3.2.2 The mechanical damaged testing of the system was assessed using test data from a representative related system applied at the same application rate and met all testing requirements.

3.2.3 On the basis of data assessed, the system can accept, without damage, the foot traffic and light concentrated loads associated with installation, maintenance and pedestrian traffic on defined walkways and the effects of minor movement likely to occur in practice while remaining weathertight.

3.2.4 Where traffic in excess of the examples given in section 3.2.2 is envisaged, such as for maintenance of lift equipment, a suitable walkway must be provided (for example, using concrete slabs supported on bearing pads). Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

Not applicable.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the system were assessed.

8.2 Specific test data were assessed as given in Table 4.

Table 4 Results of durability tests

System assessed	Assessment method	Requirement	Result
Caltech UV (Glass mat system)	Tensile strength/Elongation to BS EN ISO 527-1 : 2019 and BS EN ISO 527-4 : 1997	Value achieved	
	Heat aged for 240 days at 80°C		1389 N per 50 mm/2.63 %
	UV aged for 1200 MJm ² (60°C) as defined in EOTA TR 010 : 2014		1345 N per 50 mm/2.61 %
	21 days cure at 5°C and then stored at 23°C/50 % humidity		945 N per 50 mm/3.5%
Caltech UV (Glass mat system)	21 days cure at 35°C and then stored at 23°C/50 % humidity		1317 N per 50 mm/2.97%
	Delamination to EOTA TR 004 : 2004 (On concrete)	≥50 kPa	Pass
Caltech UV (Glass mat system)	Water exposure 96 days (Dried at ambient for 59 days prior to testing)		
	Delamination to EOTA TR 004 : 2004 (Mineral on insulation)	≥50 kPa	Pass
Caltech UV (Glass mat system)	Water exposure 96 days (Dried at ambient for 59 days prior to testing)		
	Delamination to EOTA TR 004 : 2004 (Mineral on insulation)	≥50 kPa	Pass
Caltech UV (Glass mat system)	Water exposure 60 days		
	Dynamic indentation to EOTA TR 006 : 2004 (on steel)	Value achieved	
Caltech UV (Glass mat system)	UV aged (Exposure condition `S` (60°C) as defined in EOTA TR 010 : 2014) tested at -10°C		I ₄
	Heat aged at 80°C for 240 days tested at -10°C		I ₄
Caltech UV (Glass mat system)	Static indentation to EOTA TR 007 : 2004 (on steel)	Value achieved	
	Water exposure at 60°C for 96 days tested at 90°C		L ₄
Caltech UV (Glass mat system)	Fatigue to EOTA TR 008 : 2004 (on concrete)	No evidence of leakage after	Pass
	Heat aged at 80°C for 240 days (50 cycles)	24 hours exposure to 100 mm head of water. No debonding, or if any not exceeding 75 mm in total or 50 mm on one side of the gap	
Caltech UV (Polyester mat system)	Crack bridging to EOTA TR 013 : 2004 (on concrete)	Water leakage	Pass
	Heat aged at 70°C for 91 days		

8.2.1 The durability testing of the system was assessed using test data from a representative system applied at the same application rate and met all testing requirements.

8.3 Service life

Under normal service conditions, the system will have a life of at least 30 Years, provided they are designed, installed and maintained in accordance with this Certificate and the Certificate holder’s instructions.

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018 and, where appropriate, *NHBC Standards 2023*, Chapter 7.1.

9.1.3 For design purposes of flat roofs, twice the minimum finished fall must be assumed, unless a detailed analysis of the roof is available, including overall and local deflection, and direction of falls.

9.1.4 Balconies and terraces, to which the system is to be applied, must be designed in accordance with BS 8579 : 2020.

9.1.5 In areas of pedestrian access, appropriate precautions against slip, such as the installation of paviours, must be taken.

9.1.6 Dead loads, wind loads and imposed loads must be 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.

9.1.7 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 be used in accordance with, and within the limitations of, that Certificate.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation of Caltech UV systems must be carried out in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, the Certificate holder's instructions and this Certificate. Additional instructions and guidance are provided in Annex A of this Certificate.

9.2.3 The system components must be applied when the air and substrate temperatures are greater than 5°C, rising to a maximum air temperature of 35°C. The system must not be installed in rain, snow, fog or misty conditions.

9.2.4 Detailing (eg upstands) must be carried out in accordance with the Certificate holder's instructions.

9.2.5 Substrates on which the system are to be applied must be properly prepared in accordance with the Certificate holder's instructions.

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

9.2.7 Damaged areas of the substrate (eg blistered membrane) must be removed, replaced or repaired. Substrate defects (eg shallow-bottomed cracks and indentations) are filled in accordance with the Certificate holder's instructions.

9.2.8 Deck surfaces must be free from sharp projections such as concrete nibs.

9.2.9 The primers are applied at the coverage rates given in Table 5.

Primer	Application rate (g·m ⁻²)
Eurorof PU Primer	150
Caltech WBP	100 to 150 ⁽¹⁾

(1) Eurorof PU Primer diluted at a ratio of 1:1 with water.

9.2.10 When using an airless spray, the wind speed must be such that it does not interfere with the application or cause overspray. No attempt to spray should be made if the wind speed exceeds 6.7 m·s⁻¹ (15 mph), unless precautions such as the use of wind barriers are taken.

9.2.11 The system is applied at the application rates given in Table 6.

Layer	System	
	Caltech UV ⁽¹⁾	Caltech UV / Caltech sealer coat
Base coat	Caltech UV at 1.50 kg·m ⁻² (1.00 ℓ·m ⁻²) minimum	Caltech UV at 1.50 kg·m ⁻² (1.00 ℓ·m ⁻²) minimum
Reinforcement	Caltech G-MAT or Caltech F-MAT	Caltech G-MAT or Caltech F-MAT
Top coat	Caltech UV at 1.80 kg·m ⁻² (1.20 ℓ·m ⁻²) minimum	Caltech UV at 1.00 kg·m ⁻² (0.65 ℓ·m ⁻²) minimum
Protection coat	—	Caltech sealer coat at 0.30 kg·m ⁻² (0.25 ℓ·m ⁻²)
Finished thickness (mm)	2.2 ⁽²⁾	1.9

(1) When the 5.9 kg·m⁻² application rate is used the top coat (3.9 kg·m⁻²) can be applied either in one coat or two coats.

(2) Finished thickness of the 5.9 kg·m⁻² application rate is 3.5 mm.

9.2.12 The NHBC requires that the Caltech UV system, once installed, be inspected in accordance with *NHBC Standards 2023*, Chapter 7, Clause 7.1.11, including the use of appropriate integrity, where required. Any damage to the system assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain system performance.

9.2.13 The Certificate holder's Technical Services can provide further advice, but such advice is outside of the scope of this Certificate.

9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, the system must only be installed by contractors who have been trained and approved by the Certificate holder.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the system in use requires that they it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

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

9.4.2.2 Should minor damage occur, it must be rectified by cleaning back to unweathered material and an appropriate remedial product applied in accordance with the Certificate holder's instructions to the damaged area.

10 Manufacture

10.1 The production processes for the system have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the system's components are delivered to site in packaging bearing the Certificate holder's name, logo, product name, batch number and health and safety data.

11.2 The packaging of the system is given in Table 7.

Table 7 Packaging

Component/item	Package type	Size	Shelf life
Caltech UV	metal cans	25 kg	12 months
Caltech CR	metal cans	25 kg	12 months
Caltech sealer coat	tins	9 kg	12 months
Eurorof PU Primer	tins	4 Kg	12 months
Caltech WBP	plastic cans	3 and 16 kg	12 months
Caltech F-MAT	rolls	20 and 100 m ²	—
Caltech G-MAT	rolls	140 m ²	—
Caltech SA Fleece	rolls	—	—
Caltech Preparation Layer	rolls	43 m ²	—
Caltech self-adhesive joint tape	rolls	150 mm x 20 m 100 mm x 10 m	—

Supporting information in this Annex is relevant to the system but has not formed part of the material assessed for the 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.

CLP Regulations

The Certificate holder has taken the responsibility of classifying and labelling the system or system components under the *GB CLG Regulation* and 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).

Additional information on installation

General

A.1 Installation should also be in accordance with the relevant clauses of Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*

A.2 Existing bituminous membranes may not require the application of primer. In such cases the advice of the Certificate holder's technical office should be sought, but such advice is outside of the scope of this Certificate.

A.3 Application can be by brush, roller or airless spray. Brush application is normally used for small roof areas and for embedding the reinforcement into the waterproofing.

A.4 The top coats are either applied wet-on-wet or as soon as the previous layer has cured allowing trafficking of the surface up to a maximum of seven days. After this period the membrane is cleaned and the surface reactivated using Euroroof PU Primer, prior to application.

A.5 If Caltech UV is being applied as a protection coat, it is applied a maximum of 24 hours after the application of the top coat.

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 8579 : 2020 *Guide to the design of balconies and terraces*
- 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 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*
- CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*
- EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*
BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roof tests*
- BS EN ISO 527-1 : 2019 *Plastics — Determination of tensile properties — General principles*
BS EN ISO 527-4 : 2021 *Plastics — Determination of tensile properties — Test conditions for isotropic and orthotropic fibre-reinforced plastic composites*
- BS EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*
- BS EN 1931 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*
- EOTA TR004 *Determination of the resistance to wind loads of partially bonded roof waterproofing membranes*
EOTA TR006 *Determination of the resistance to dynamic indentation*
EOTA TR007 *Determination of the resistance to static indentation*
EOTA TR008 *Determination of the resistance to fatigue movement*
EOTA TR010 *Exposure procedure for artificial weathering*
EOTA TR013 *Determination of crack bridging capability*

Conditions of Certificate

Conditions

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