Sika Ltd
Watchmead
Welwyn Garden City
Hertfordshire AL7 1BQ

Tel: 01772 255001 Fax: 01772 255672
e-mail: sikabit.roofing@uk.sika.com
website: www.sikabit.co.uk

Agrément Certificate
19/5682
Product Sheet 1

SIKA WATERPROOFING SYSTEMS

SIKABIT PROMELT INVERTED ROOF SYSTEM

This Agrément Certificate Product Sheet(1) relates to the SikaBit(2) ProMelt Inverted Roof System, a hot-applied reinforced polymer-modified bitumen applied in two layers, for use as a protected waterproofing system on flat (including those with zero fall), inverted and other protected roofs, including green roofs and roof gardens.

(1) Hereinafter referred to as 'Certificate'.
(2) SikaBit is a registered trademark.

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 — under suitable protection, the use of the system can enable a roof to be unrestricted under the national Building Regulations (see section 7).

Resistance to wind uplift — the system will resist the effects of any likely wind suction acting on the roof (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).

Resistance to penetration by roots — when used in conjunction with a root resistant membrane, the system will resist penetration by roots (see section 10).

Durability — under normal service conditions and when fully protected, the system will provide a durable roof waterproofing for the design life of the roof in which it is incorporated (see section 12).

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 Agrement

Date of First issue: 21 February 2020

Hardy Giesler
Chief Executive Officer

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA
©2020
tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

Regulations

In the opinion of the BBA, the SikaBit ProMelt Inverted Roof System, 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 flat roofs, the system, when used with suitable surface protection, can enable a roof to be unrestricted under this Requirement. See sections 7.1 and 7.2 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The system will enable a roof to satisfy this Requirement. See section 6.1 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See section 12 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:		Use of the system satisfies the requirements of this Regulation. See sections 11.1 and 12 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		On flat roofs, the system, when used with suitable surface protection, can be regarded as having low vulnerability and will enable a roof to be unrestricted, with reference to clause 2.8.1(1)(2) of this Standard. See sections 7.1 and 7.2 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 6.1 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 12 and the *Installation* part of this Certificate.

Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The system will contribute to satisfying the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation:	**36(b)**	**External fire spread**
Comment:		On flat roofs, the system, when used with suitable surface protection, can enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 and 7.2 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* (1.1) and 3 *Delivery and site handling* of this Certificate.

Additional Information

NHBC Standards 2020

In the opinion of the BBA, the SikaBit ProMelt Inverted Roof System, 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.*

Technical Specification

1 Description

1.1 The SikaBit ProMelt Inverted Roof System comprises:

- SikaBit Hot Melt 50/70 — a polymer-modified bitumen, blended with other additives, which is hot-applied in two layers to provide a waterproofing membrane with a nominal coating thickness of 6 mm
- SikaBit Roof F-50 UK — a non-woven polyester reinforcement fleece with a nominal weight of 50 $g \cdot m^{-2}$ which is embedded between the two layers of SikaBit Hot Melt 50/70
- SikaBit Roof Access Layer UK — a glass fibre reinforced polymer modified bitumen membrane with a nominal weight of 2 $kg \cdot m^{-2}$, for use as a protection membrane
- SikaBit E40G Sand UK — a sand-surfaced, polyester reinforced polymer modified bitumen membrane with a nominal weight of 4.8 $kg \cdot m^{-2}$, for use as a protection membrane
- SikaBit E50 MG UK — a mineral finished, polyester reinforced polymer-modified bitumen membrane with a nominal weight of 5 $kg \cdot m^{-2}$, for use as a protection membrane.

1.2 Ancillary items necessary for some types of installation are:

- Sika Igolflex P-15 UK — a cold-applied, solvent-based bitumen solution primer for use on concrete and other porous substrates prior to the application of the SikaBit ProMelt Inverted Roof System
- SikaBit E50G MG RT UK — an SBS-modified bitumen waterproofing membrane with root resistant properties, for use in roof garden applications.

1.3 Other items or components which may be used with the system, but which are outside of the scope of this Certificate, are:

- drainage membranes
- expansion joint systems
- extruded polystyrene (XPS) insulation boards

- other protection boards or membranes
- mastic asphalt screed for use as a protection layer, levelling coat or to add falls
- polypropylene geotextile root barriers
- retaining profiles
- paving and other ballast
- concrete repair products
- drainage outlet components.

Details of suitable products/specifications may be obtained from the Certificate holder.

2 Manufacture

2.1 SikaBit Hot Melt 50/70 compound is manufactured by a batch process involving the blending of polymer-modified bitumen, fillers and other additives.

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.

3 Delivery and site handling

3.1 SikaBit Hot Melt 50/70 is delivered to site in nominal 14 kg blocks wrapped in a thermofusible film. The blocks are delivered on shrink-wrapped pallets with a maximum of 64 blocks per pallet.

3.2 SikaBit Roof Access Layer UK is supplied as 1 x 20 m rolls. Rolls are packed on shrink-wrapped pallets with a maximum of 25 rolls per pallet.

3.3 SikaBit E40G Sand UK and SikaBit E50 MG UK are supplied as 1 x 8 m rolls. Rolls are packed on shrink-wrapped pallets with a maximum of 25 rolls per pallet.

3.4 SikaBit Roof F-50 UK is supplied as 1 x 200 m rolls. Each roll weighs approximately 17 kg.

3.5 SikaBit E50G MG RT UK is supplied as 1 x 8 m rolls. Rolls are packed on shrink-wrapped pallets with a maximum of 25 rolls per pallet. The product has a mass per unit area of 5.0 $kg \cdot m^{-2}$.

3.6 Sika Igolflex P-15 UK is supplied in 25 litre drums.

3.7 All components must be stored under cover, protected from physical damage and contamination. Rolls of membrane should be stored upright on a clean, level surface, away from heat and kept dry.

3.8 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 the SikaBit ProMelt Inverted Roof System.

Design Considerations

4 General

4.1 The SikaBit ProMelt Inverted Roof System is satisfactory for use as a protected waterproofing layer on flat roofs (including those with zero fall) and podiums with limited access in:

- inverted roof specifications
- protected roof specifications, eg covered by paving or other suitable protection
- green roofs (extensive) and roof garden (intensive) specifications.

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

- roof garden (intensive) — a roof with a substantial layer of growing medium with planting that can include shrubs and trees, generally accessible to pedestrians
- green roof (extensive) — a roof with a shallow layer of growing medium planted with low-maintenance plants such as mosses, sedums, grasses and some wild flower species.

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

4.4 For the purpose of this Certificate, flat roofs are defined as those having a minimum finished fall of 1:80, and pitched roofs as those having falls in excess of 1:6. For design purposes, twice the minimum fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection and direction of falls.

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

4.6 Zero fall roofs are defined for the purpose of this Certificate as those having a finished fall of between 0 and 0.7°. Reference should also be made to the appropriate clauses in *Liquid Roofing and Waterproofing Association* (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*, especially with regards to reducing the potential for slipping.

4.7 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018 and where appropriate, *NHBC Standards* 2020, Chapter 7.1.

4.8 Structural decks to which the system is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Dead loads, wind loading and imposed loads are calculated in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003 and BS EN 1991-1-4 : 200,5 and their UK National Annexes.

4.9 Insulation materials used in conjunction with the system must be suitable for use within inverted roofs, the subject of a current BBA Certificate and used in accordance with, and within the scope of, that Certificate, and used in accordance with the manufacturer's instructions.

4.10 Good practice in respect of the use of vapour control barriers should be followed.

5 Practicability of installation

The system must only be installed by contractors who have been trained and approved by the Certificate holder. Details of these are available from the Certificate holder.

6 Weathertightness

6.1 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.

6.2 The system is impervious to water and will act as a waterproof layer capable of accepting minor structural movement without damage.

7 Properties in relation to fire

7.1 In the opinion of the BBA, a roof incorporating the system will be unrestricted under the national Building Regulations in the following circumstances:

- protected or inverted roof specifications, including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC, can be considered to be unrestricted under the national Requirements
- a roof garden covered with a drainage layer of gravel 100 mm thick and a soil layer 300 mm thick
- irrigated roof gardens and green roofs.

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

7.3 If allowed to dry, plants used in roof gardens may allow flame spread across the roof. This should be taken into consideration when selecting suitable plants. Appropriate planting irrigation and/or protection must be applied to ensure the overall fire-rating of the roof is not compromised.

8 Resistance to wind uplift

8.1 The system will resist the effects of wind suction likely to occur in practice.

8.2 The ballast requirements for inverted specifications should be calculated by a suitably competent and experienced individual in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex. The system should always be ballasted with a minimum depth of 50 mm of aggregate. In areas of high wind exposure, the Certificate holder's advice should be sought. Alternatively, concrete slabs on suitable supports can be used.

8.3 However, the soil used in intensive plantings must not be of the type that will be removed, or become localised, owing to wind scour experienced on site.

8.4 It should be recognised that the type of plants used in roofs gardens could significantly affect the expected wind loads in service.

9 Resistance to mechanical damage

9.1 The system will accept the foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care should be taken to avoid puncture by sharp objects or concentrated loads. Where traffic in excess of this is envisaged, such as for maintenance of lift equipment, a walkway should be provided, for example using concrete slabs supported on bearing pads.

9.2 When used over construction joints and minor cracks, the system can accommodate the minor structural movements likely to occur in service. The Certificate holder must be consulted for suitable details at expansion joints.

10 Resistance to penetration by roots

When used in conjunction with SikaBit E50G MG RT UK anti-root membrane, the system will resist penetration by roots.

11 Maintenance and repair

11.1 The system should be the subject of six monthly inspections and maintenance in accordance with BS 6229 : 2018, Chapter 7, to ensure continued performance.

11.2 For green roofs and roof gardens, guidance is available within the latest addition of the Green Roof Organisation (GRO) *Guidelines to Green Roofing.*

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

12 Durability

12.1 The system, when fully protected and subject to normal service conditions, will provide an effective barrier to the transmission of moisture for the design service life of the roof in which it is incorporated.

12.2 In situations where maintenance or repair of any of the components in the roof structure is necessary (eg the protection layer or insulation), the waterproof integrity of the membrane may be reduced. In these circumstances, the Certificate holder should be consulted.

12.3 An estimate cannot be given for the life of green roof and roof garden specifications owing to the nature of use. However, under normal circumstances, it should be significantly greater than for open coverings.

Installation

13 General

13.1 The SikaBit ProMelt Inverted Roof System must be installed in accordance with the relevant clauses of BS 8000-0 : 2014, the Certificate holder's instructions and this Certificate, on a dry and frost-free substrate. After rain or snow, the substrate must be allowed to dry and an adhesion test carried out before installation can commence.

13.2 To assess the suitability of a substrate to receive the waterproofing membrane, adhesion tests must be carried out to ensure adequate adhesion can be achieved. If bonding problems occur, advice must be sought from the Certificate holder.

13.3 Prior to the application of the waterproofing membrane, defects in the substrate such as cracks, irregularities and other areas of potential weakness must be repaired using a suitable repair mortar, and the substrate cleaned in accordance with the Certificate holder's instructions. Additional membrane may be used to fill minor depressions in the substrate.

13.4 Cementitious substrates must be conditioned with Sika Igolflex P-15 UK primer and allowed to dry before application of the waterproofing membrane. All substrates must be free from contamination that may affect the adhesion of the waterproofing membrane. Acceptable adhesion must be confirmed by test.

13.5 The waterproofing membrane must be protected using one of the protection membranes immediately after installation.

13.6 Detailing must be carried out in accordance with the Certificate holder's instructions.

14 Procedure

14.1 SikaBit Hot Melt 50/70 must be heated in an insulated double jacketed boiler fitted with a stirrer and thermostatically controlled heater. The product must not be subjected to direct flame during melting.

14.2 The application temperature range for the molten SikaBit Hot Melt 50/70 is 140 to 190°C. The temperature must not exceed 220°C.

14.3 Once molten, SikaBit Hot Melt 50/70 compound should be discharged from the heater into a suitable container and applied to the roof using a long-handled squeegee.

14.4 Construction joints and cracks must be reinforced with an additional strip of SikaBit Roof F-50 UK.

14.5 At expansion joints, a proprietary joint-sealing system must be used. The Certificate holder must be consulted for details of suitable joint systems and for the detailing of the waterproofing membrane to the joint system.

14.6 A first coat of SikaBit Hot Melt 50/70 is applied at a minimum thickness of 3 mm.

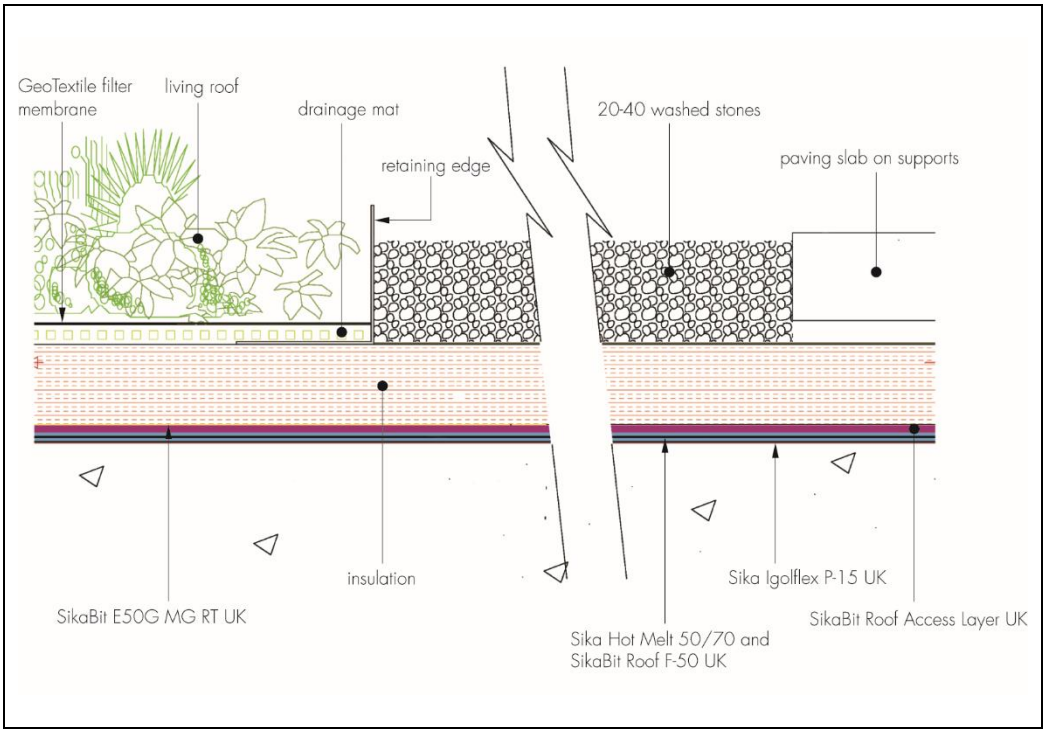
14.7 SikaBit Roof F-50 UK is embedded into the first layer of the membrane whilst it is still warm and tacky. Adjacent sheets of SikaBit ProMelt Fleece must be overlapped by a minimum of 75 mm.

14.8 A second layer of SikaBit Hot Melt 50/70 is then applied over the reinforced first layer at a minimum thickness of 3 mm, to provide a membrane with a minimum total thickness of 6 mm.

14.9 The system must then be immediately protected with the specified protection membrane prior to laying ballast, paving slabs or other specified surface finish in accordance with the Certificate holder's instructions.

14.10 In green roof and roof garden specifications, a layer of SikaBit E50G MG RT UK anti-root membrane is applied ensuring minimum 60 mm side laps and 100 mm end laps, prior to installing the specified finish. See Figure 1 for typical inverted/roof garden specifications.

Figure 1 Typical inverted roof/roof garden specification



15 Repair

15.1 Damage to the system must be repaired as soon as is practicable to ensure that the integrity of the waterproofing is maintained. Repairs must be carried out to reinstate the damaged area to the original specification in accordance with the Certificate holder's instructions.

15.2 Where maintenance or repair of any of the roof components above the waterproofing system are necessary, care must be taken to avoid damage to the system. If damage occurs, it must be repaired as soon as is practicable by the installer.

15.3 Should the system become contaminated by chemicals, oils or grease, the advice of the Certificate holder must be sought on whether any remedial action is required.

Technical Investigations

16 Tests

Tests were carried out on samples of the SikaBit ProMelt Inverted Roof System and the results assessed, as follows:

- characterisation tests on SikaBit Hot Melt 50/70 to establish fines, penetration, flow and resilience
- characterisation tests on SikaBit Roof F-50 UK to establish mass per unit area and tensile properties
- water vapour permeability
- watertightness
- low temperature flexibility
- resistance to fatigue
- resistance to dynamic indentation
- resistance to static indentation
- effect of low temperatures
- effect of high temperatures
- effect of heat ageing
- effect of exposure to surface water.

17 Investigations

The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and compositions of the materials used.

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 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 + A1 : 15 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*

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.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk