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BBA APPROVAL INSPECTION TESTING CERTIFICATION
TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate
09/4668
Product Sheet 3

SIKA ROOF WATERPROOFING MEMBRANES

SIKA-TROCAL SGmA LOOSE-LAID AND BALLASTED MEMBRANE

This Agrément Certificate Product Sheet(1) relates to Sika-Trocal SGmA Loose-laid and Ballasted Membrane, a glass-reinforced PVC membrane for use as a waterproofing layer on flat parapeted roofs with limited or pedestrian access in protected, inverted roof garden and green roof specifications.

(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 product will resist the passage of moisture to the interior of the building (see section 6).

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

Resistance to wind uplift — the product will resist the effects of any wind suction likely to occur in practice (see section 8).

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

Durability — under normal service conditions the product will provide durable waterproof coverings with a service life in excess of 35 years (see section 12).

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Fourth issue: 5 October 2015

Originally certificated on 3 June 2009

John Albon — Head of Approvals
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

Regulations

In the opinion of the BBA, Sika-Trocal SGmA Loose-laid and Ballasted Membrane, 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 use of the product will enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The product will enable a roof to meet this Requirement. See section 6.1 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The product 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 product satisfies the requirements of this Regulation. See sections 11 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 suitable non-combustible substructures the use of the product can be regarded as having a low vulnerability under clause 2.8.1[1][2] of this Standard. See section 7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product, including joints, 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 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 this product 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 product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On suitable substructures the use of the product will be unrestricted under the requirements of this Regulation. See section 7 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* (1.1) and 3 *Delivery and site handling* (3.3) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of Sika-Trocal SGmA Loose-laid and Ballasted Membrane, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies* and 7.2 *Pitched roofs*.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13956 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Registered Contractors Scheme(1)

The Certificate holder operates a Registered Contractors Scheme for this product under which contractors are trained, registered and regularly reviewed by the Certificate holder to demonstrate that they are competent to carry out installation in accordance with this Certificate. Details of Registered Contractors are available from the Certificate holder. Registered Contractors are responsible for each installation of the product they undertake.

(1) The Certificate holder's records relating to the Registered Contractors Scheme will be audited annually by the BBA as part of its programme of surveillance.

Technical Specification

1 Description

1.1 Sika-Trocal SGmA Loose-laid and Ballasted Membrane is a glassfibre restraint matrix-reinforced PVC membrane, available in two thicknesses, and manufactured to the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Sika-Trocal SGmA	
Thickness (mm)	1.5	2.0
Mass per unit area* ($g \cdot m^{-2}$)	1.9	2.5
Roll length (m)	20	15
Roll width (m)	2.0	2.0
Colour		
upper	beige	beige
lower	beige	beige
Tensile strength* (N/50 mm)		
longitudinal	≥ 9	≥ 9
transverse	≥ 8.5	≥ 8.5
Elongation* (%)		
longitudinal	≥200	≥200
transverse	≥200	≥200
Watertightness*	pass	pass
Low temperature foldability* (°C)	≤ –25	≤ –25

1.2 Ancillary items necessary for installation of the product and included in this assessment are:

- Sika-Trocal THF Welding Agent — tetrahydrofuran (THF) for the cold welding of laps between individual sheets
- Sika-Trocal PVC Solution — plasticised PVC dissolved in THF, used for sealing joints.

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

- Sika-Trocal metal sheets — 0.6 mm thick galvanized steel sheet, the upper side coated with a 0.8 mm thick layer of plasticised PVC, coloured light grey and slate grey, used to produce profiles for perimeter flashings, connections and fixings
- Sika-Trocal polyester fleece (S-Felt T) — a needle-punched non-woven layer (300 $g \cdot m^{-2}$) for use as a protective and separating layer preventing contact between the waterproofing sheets and any rough/abrasive surfaces or incompatible materials
- Sika-Trocal polypropylene fleece (S-Felt A) — 300 $g \cdot m^{-2}$, for use as a protective and separating layer preventing contact between the waterproofing sheets and any rough/abrasive surfaces or incomplete materials, only suitable for use under membranes
- Sika-Trocal SBV — a PVC-skinned polyester fleece for use as a heavy duty protective sheet between the membrane and ballast
- Sika-Trocal S Vap 500E vapour check — a polyethylene sheet, offering resistance to the passage of water vapour into the roof construction from below
- Sika-Trocal corner pieces — SGmA membrane moulded into corner pieces, for ensuring the waterproofing integrity of the corner detail.

2 Manufacture

2.1 Sika-Trocal SGmA membrane is manufactured by laminating together two calendered PVC sheets sandwiching a layer of random glass fibres which has been impregnated with plasticised PVC. The membrane is cut to width and reeled onto cardboard cores.

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 Sika Trocal GmbH Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by SQS (Certificate 31982).

2.4 The membrane is manufactured in Germany and marketed in the UK by the Certificate holder.

3 Delivery and site handling

3.1 The product is delivered to site in rolls on pallets either with a corrugated cardboard outer or wrapped in polythene film. The wrapper bears the Certificate holder's name, product identification, roll width and length, colour and the BBA logo incorporating the number of this Certificate.

3.2 Rolls should be stored horizontally under cover and on a clean, level surface in a dry environment. Pallets may be stacked to a maximum of three high.

3.3 Items containing THF have a flashpoint below 32°C and are all classified as 'highly flammable' under the *Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) 2009*. Containers bear the appropriate hazard warning and should be stored accordingly. THF has a short-term exposure limit of 200 parts per million and there must be adequate ventilation when these products are used in confined spaces.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Sika-Trocal SGmA Loose-laid and Ballasted Membrane.

Design Considerations

4 General

4.1 Sika-Trocal SGmA Loose-laid and Ballasted Membrane is satisfactory for use as a loose-laid roof waterproofing system, ballasted to prevent wind uplift, on parapeted, protected, inverted flat roofs with limited or pedestrian access, and green roof and roof garden applications.

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

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

4.4 Pedestrian access roofs are defined for the purpose of this Certificate as those suitable for foot traffic at any time, eg terraces, balconies, patios. The trafficked layer consists of dense or precast interlocking pavers bedded onto sand, dry mix or other suitable protection. Special precautions must be taken to protect the membrane.

4.5 Decks to which the product is to be applied must comply with the relevant requirements of BS 6229 : 2003, BS 8217 : 2005 and, where appropriate, *NHBC Standards* 2014, Chapter 7.1 *Flat roofs and balconies*.

4.6 Insulation materials used in conjunction with the product must meet the requirements stated by the Certificate holder and must be one of the following:

- as described in the relevant clauses of BS 8217 : 2005, and/or
- the subject of a current BBA Certificate, and used in accordance with, and within the limitations of, that Certificate.

4.7 The product must not be laid directly onto certain materials, eg bituminous felts, certain insulation boards or timber substrates which have been impregnated with oil-based preservatives. If contact with such products is likely, a separating layer should be used. Where doubt arises, the advice of the Certificate holder should be sought.

4.8 Recommendations for the design of green roofs and roof garden specifications are available within the latest edition of *The GRO Green Roof Code — Green Roof Code of Best Practice for the UK*.

4.9 For green and inverted roof gardens, structural decks to which the product is to be applied must be suitable to transmit the dead and imposed loads experienced in service.

4.10 Imposed loads, dead loading and wind load specifications are calculated in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3: 2003, BS EN 1991-1-4: 2005 and their respective UK National Annexes.

4.11 The drainage system for green roofs or roof gardens must be correctly designed and provision made for access for maintenance purposes. Dead loads for green roofs and roof gardens can increase if the drains become partially or completely blocked causing waterlogging of the drainage layer.

4.12 In inverted roof specifications, the ballast requirements should be calculated in accordance with the relevant parts of BS EN 1991-1-4: 2005 and its UK National Annex. Additional guidance for inverted roof specifications is given in BBA Information Bulletin No.4 *Inverted roofs – drainage and U Value calculations*.

5 Practicability of installation

The product must only be installed by installers who have been trained and approved by the Certificate holder. The records relating to this will be audited by the BBA as part of its programme of surveillance on the Certificate.

6 Weathertightness

6.1 Results of tests confirm that the membrane and joints in the membrane, when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of the building and so meet the requirements of the national Building Regulations.

6.2 The product is impervious to water and, when used in the system described, will achieve a weathertight roof capable of accepting minor structural movement without damage.

7 Properties in relation to fire

7.1 The following systems will be unrestricted under the national Building Regulations:

- an 18 mm plywood deck, one layer of S-Vap 500E vapour control layer, 100 mm PIR insulation, one layer of 1.5 mm Sika-Trocal SGmA membrane, and one layer of SBV protection sheet, ballasted with paving slabs on proprietary support pads
- an 18 mm plywood deck, one layer of S-Vap 500E vapour control layer, 100 mm thick PIR insulation, one layer of 1.5 mm Sika-Trocal SGmA membrane mechanically attached with Trocal discs, and one layer of SBV protection sheet, ballasted with 28 mm thick softwood timber decking with 8 mm gaps on bearers
- a roof garden covered with a drainage layer of gravel of 100 mm thick and a soil layer of minimum 300 mm thickness.

7.2 The product, when used in 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 national Requirements.

7.3 The designation of other specifications (eg when used on combustible substrates) should be confirmed by:

England and Wales — test or assessment in accordance with Approved Document B, Appendix A, Clause A1

Scotland — test to conform to Mandatory Standard 2.8, clause 2.8.1[1][2]

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic)

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

7.4 In the opinion of the BBA, when used in irrigated roof gardens or green roofs the product will be unrestricted under the national Requirements:

England and Wales — Requirement B4(2)

Scotland — Mandatory Standard 2.8, clause 2.8.1[1][2]

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic)

Northern Ireland — Regulation 36(b).

8 Resistance to wind uplift

8.1 The ballast requirements for loose-laid and ballasted systems should be calculated in accordance with the relevant parts of BS EN 1991-1-1 : 2002 and BS EN 1991-1-7 : 2006, but should not be below the minimum thickness of 50 mm. In areas of high wind exposure the use of the concrete pavers should be considered.

8.2 The soil used in roof gardens and ballast on inverted/protected roofs must not be of a type that will be removed or become de-localised owing to wind scour experienced on the roof.

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

9 Resistance to foot traffic

9.1 Results of tests indicate that the product can withstand, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. Where traffic in excess of this is envisaged, such

as for maintenance of roof-mounted plant or for regular access to plant rooms, walkways must be provided, as recommended by the Certificate holder. Reasonable care should be taken, however, to avoid puncture by sharp objects or concentrated loads.

9.2 Once the green roof or roof garden has been installed it can be regarded as a suitable protection for the membrane in use. However, as the membrane is taken up beyond the level of the soil (at least 150 mm) it is vulnerable to damage.

10 Resistance to penetration of roots

Results of tests on the product indicate that it is resistant to root penetration and can be used in a roof waterproofing system for roof gardens and green roofs.

11 Maintenance

11.1 Roofs covered with the product should be the subject of annual inspections to ensure continued performance.

11.2 Maintenance should include checks and operations to ensure that, where applicable:

- adequate ballast is in place and evenly distributed over the membrane
- protection layers are in good condition
- exposed membrane is free from build up of silt and other debris, and unwanted vegetation is cleared.

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

11.4 Green roofs and roof gardens must be subject of regular inspections, particularly in autumn after leaf fall and in spring, to ensure that unwanted vegetation and other debris are cleared from the roof and drainage outlets. Guidance is available in the latest edition of *The GRO Green Roof Code — Green Roof Code of Best Practice for the UK*.

12 Durability

Sika-Trocal SGmA Loose-laid and Ballasted Membrane has been used in the United Kingdom since 1972. Accelerated weathering tests and performance in use confirm that satisfactory retention of physical properties is achieved. The product will have a life in excess of 35 years.

13 Reuse and recyclability

The product comprises polyvinyl chloride and glass, which can be recycled.

Installation

14 General

14.1 Installation of Sika-Trocal SGmA must be carried out by trained and licensed installers in accordance with the Certificate holder's instructions and the relevant clauses of BS 8000-0 : 2014 and BS 8000-4 : 1989.

14.2 The product may be laid in conditions normal to roofing work and should not be laid in wet or damp weather, nor at temperatures below 5°C, unless suitable precautions are taken.

14.3 Deck surfaces should be clean, dry and free from sharp projections such as nail heads and concrete nibs. Sika-Trocal polyester fleece (S-Felt A) should be used as a separating layer. The requirement of a vapour barrier should be established in accordance with BS 6229 : 2003 and the Certificate holder's instructions.

14.4 The membrane may be applied over insulation boards, provided the insulation material has been fixed to the substructure by methods that will not impair the performance of the membrane. EPS/XPS insulation boards require a suitable isolating layer to prevent the risk of plasticiser migration. The boards must be firm, of uniform density and, where appropriate, capable of spanning the deck flute space under foot traffic.

14.5 Parapet edges should be a minimum of 150 mm above the proposed ballast level to reduce the risk of ballast movement.

14.6 Soil or other bulk material should not be stored on one area of the roof prior to installation, to ensure that localised overloading does not occur.

15 Procedure

15.1 Installation of the roofing system should commence from the roof perimeters with sufficient amounts of underlays and insulation boards being installed to permit the fixing of the Sika-Trocal metal profiles.

15.2 Sika-Trocal metal sheets are fixed in place, over any roof insulation when present, at the roof perimeters, and internal corners and penetrations as work progresses.

15.3 The installation of the membranes is started from a suitable Sika-Trocal metal section at the perimeter. The system is installed in stages, rather than by fully completing one layer before starting the next.

15.4 The membrane is unrolled over the substrate and on top of any separating layers, taking care not to stretch it. Edge and end laps should be a minimum of 50 mm.

15.5 The membrane is secured to the Sika-Trocal metal sheets at edges and upstands. The lap joints are made by cold or hot-air welding in the manner described in sections 15.8 to 15.11. Prefabricated corner sections should be used where possible for detail work.

15.6 Sika-Trocal S-Felt T polyester fleece or Sika-Trocal SBV protective sheet should be laid over the membrane, prior to the application of the ballast.

15.7 For green roof or roof garden applications, the Certificate holder's instructions must be followed.

Solvent welding

15.8 Welding of the lap joints must be carried out using Sika-Trocal THF Welding Agent in accordance with the Certificate holder's instructions.

15.9 The lap joint area must be clean. If not, the area must be cleaned back a minimum of 50 mm and allowed to dry.

15.10 Both surfaces are coated with the Sika-Trocal THF Welding Agent, to a minimum width of 30 mm (the minimum width of the welded area must be 30 mm), for approximately 400 mm along the seam. The welded laps are consolidated by the application of firm, even pressure to ensure a watertight seal.

15.11 After welding, all laps must be tested with a metal probe drawn along the seam edge to confirm the integrity of the welded areas. Rectification should be carried out using a hot-air welder and a hand roller.

Tee joints

15.12 The welding operation is carried out as described in sections 15.8 to 15.11. Where multiple sheet overlaps occur, the void created along the edge of the middle sheet should be sealed by hot-air welding the capillary.

Flashing

15.13 A range of profiles and shapes can be fabricated from Trocal metal sheets to deal with parapet, edge and gully details. These are mechanically fixed to the substructure and the membranes are continuously welded to them.

Ballast requirement

15.14 The membrane must be ballasted using a minimum rate of 80 kg per square metre of aggregate (grade 20 mm to 40 mm) or concrete pavers. In areas of high wind loads, additional ballast such as concrete pavers set on a suitable protective layer may be necessary.

16 Repair

In the event of damage, repairs must be carried out in accordance with the Certificate holder's instructions. A patch of the membrane is applied, extending at least 50 mm beyond the defect. The damaged area is cleaned back to the unweathered material and the patch is hot-air or solvent welded to the roofing sheet.

Technical Investigations

17 Tests

An assessment was made of data to BS EN 13956 : 2012 in relation to:

- dimensions and tolerances
- water vapour transmission
- tensile strength and elongation
- tear resistance
- low-temperature flexibility
- resistance to impact
- resistance to static loading
- joint strength
- watertightness
- dimensional stability.

18 Investigations

18.1 A re-evaluation was made of the data and investigations on which the previous Certificate 94/3060 was based.

18.2 Existing data on the fire performance of the product were examined.

18.3 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.

18.4 Visits were made to sites in progress to assess the methods of application.

18.5 Visits were made to existing sites to assess the product's performance in use.

18.6 A survey of known users of Sika-Trocal SGmA was carried out to assess the product's performance in use.

18.7 A reassessment of the *Durability* statement was made, based on visits to old existing sites and results of tests conducted on unaged and naturally-aged materials

Bibliography

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

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*
BS 8000-4 : 1989 *Workmanship on building site — Code of practice for waterproofing*

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

BS EN 1991-1-1 : 2002 *Eurocode 1: Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
BS EN 1991-1-7 : 2006 *Eurocode 1: Actions on structures — General actions — Accidental actions*

BS EN 13956 : 2012 *Flexible sheets for waterproofing — Plastic and rubber sheets for roof waterproofing — Definitions and characteristics*

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

Conditions of Certification

19 Conditions

19.1 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.

19.2 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.

19.3 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.

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

19.5 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.

19.6 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.

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