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Agrément Certificate 20/5728

Product Sheet 9 Issue 1

# JUTA GAS-RESISTANT AND DAMP PROOFING MEMBRANES

## **GP5+ GAS BARRIER**

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to GP5+ Gas Barrier, a multilayer thermoplastic membrane for use as a gas barrier and damp-proof membrane in concrete ground floors, above and below the slab not subject to hydrostatic pressure, to protect the building against moisture, radon, methane and carbon dioxide from the ground.

(1) Hereinafter referred to as 'Certificate'.

#### The assessment includes

#### **Product factors:**

- compliance with Building Regulations
- compliance with additional regulatory or nonregulatory 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<sup>†</sup>:

- 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 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 issue: 28 February 2024

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 GP5+ Gas Barrier, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:

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E T	The Buil	ding Regulations 2010 (England and Wales) (as amended)	
Requirement:	C1(2)	Site preparation and resistance to contaminants	
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.	
Requirement:	C2(a)	Resistance to moisture	
Comment:		The product, including joints, can enable a structure to satisfy this Requirement. See section 3 of this Certificate.	
Regulation:	7(1)	Materials and workmanship	
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.	
El esta	The Buil	ding (Scotland) Regulations 2004 (as amended)	
Regulation:	8(1)	Fitness and durability of materials and workmanship	
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.	
Regulation:	9	Building standards - construction	
Standard:	3.1	Site preparation – harmful and dangerous substances	
Standard:	3.2	Site preparation – protection from radon gas	
Comment:		The product can contribute to satisfying the requirements of these Standards, with reference to clauses $3.1.2^{(1)(2)}$ , $3.1.6^{(1)(2)}$ , $3.1.7^{(1)(2)}$ , $3.1.8^{(1)(2)}$ , $3.2.1^{(1)(2)}$ and $3.2.2^{(1)(2)}$ . See section 3 of this Certificate.	
Standard:	3.4	Moisture from the ground	
Comment:		The product will enable a structure to satisfy the requirements of this Standard, with reference to clauses $3.4.1^{(1)(2)}$ , $3.4.2^{(1)(2)}$ , $3.4.5^{(1)(2)}$ and $3.4.7^{(1)(2)}$ . See section 3 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 - conversions	
Comment:		Comments in relation to the 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(1)(a)(i)	Fitness of materials and workmanshin	



) Fitness of materials and workmanship The product is acceptable. See sections 8 and 9 of this Certificate.

Regulation: Comment:	26(1)(b) (2)	Site preparation and resistance to contaminants The product will contribute to satisfying this Regulation. See section 3 of this Certificate.
<b>Regulation:</b> Comment:	28(a)	<b>Resistance to moisture and weather</b> The product will enable a structure to satisfy this Regulation. See section 3 of this Certificate.

### **Additional Information**

### **NHBC Standards 2024**

In the opinion of the BBA, GP5+ Gas Barrier, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Technical Requirement R3 and Chapters 4.1 *Land quality – managing ground conditions*, 5.1 *Substructure and ground-bearing floors* and 5.2 *Suspended ground floors*.

### **Fulfilment of Requirements**

The BBA has judged GP5+ Gas Barrier to be satisfactory for use as described in this Certificate. The product has been assessed as a gas barrier and as a damp-proof membrane, for use in concrete ground floors above and below the slab not subject to hydrostatic pressure, to protect the building against moisture, radon, methane and carbon dioxide from the ground.

### ASSESSMENT

### Product description and intended use

The Certificate holder provided the following description for the product under assessment. GP5+ Gas Barrier consists of a multilayer polyethylene waterproofing membrane with a gas-resistant core. The product is available in black and yellow.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics of GP5+ Gas Be	arrier
Characteristic (unit)	Value
Roll thickness (mm)	0.5
Roll length (m)	50
Roll width (m)	2
Mass per unit area (g·m⁻²)	500

#### Ancillary Items

The following ancillary items are essential to use with the product and have been assessed with the product:

- GP TAPE an extruded 50mm wide double-sided butyl rubber-based tape used to form lap joints when used in damp-proofing applications
- GP TITANTAPE a 100 mm wide version of GP TAPE.

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

- protection fleece and/or protection boards for use above and below the membrane to protect it from damage during the installation
- fleece-backed butyl sealing tape for use over joints to provide additional protection and a smooth finish
- foil-backed tape for use overlap joints above ground when not subject to hydrostatic pressure
- prefabricated corner units and top hats
- specialised sealants and liquid-applied membranes for sealing around penetrations and pile caps
- void-vent geocomposite membrane for use as part of a gas restrictive system.

#### Definitions for products and applications inspected

A gas-resistant membrane (as defined in BS 8485 : 2015) is defined for the purpose of this Certificate as a membrane placed above, below or within the floor slab construction to resist methane and carbon dioxide migration from the ground into a building.

### **Product assessment – key factors**

The product 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

Data were assessed for the following characteristics.

#### 1.1 Structural and mechanical properties

1.1.1 Results of tests for mechanical properties are given in Table 2.

Table 2 Results of mechanical properties			
Product assessed	Assessment method	Requirement	Result
GP5+ Gas Barrier	Tensile strength to BS EN 12311-1 : 2000 Longitudinal	Value achieved	331 N·(50 mm)⁻¹
GP5+ Gas Barrier	Elongation to BS EN 12311-1 : 2000 Longitudinal	Value achieved	> 400%
GP5+ Gas Barrier	Foldability at low temperature to BS EN 495-5 : 2013	Value achieved	-45°C
GP5+ Gas Barrier	Resistance to static loading to BS EN 12730 : 2015	Value achieved	20 kg

1.1.2 On the basis of the data assessed, the product can be punctured by sharp objects and care must be taken when handling building materials over the exposed surface.

1.1.3 Provided there are no sharp objects present on the membrane's surface prior to and during installation of the protective layer, the product will not be damaged by normal foot traffic.

### 2 Safety in case of fire

Not applicable.

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## **3** Hygiene, health and the environment

Data were assessed for the following characteristics.

#### 3.1 Weathertightness and damp-proofing

3.1.1 Results of weathertightness and damp-proofing tests are given in Table 3.

Table 3 Weathertightness			
Product assessed	Assessment method	Requirement	Result
GP5+ Gas Barrier	Watertightness to	No leakage after 24 hours	Pass
	BS EN 1928 : 2000, Method A	exposure to 1 m head of	
		water	
GP5+ Gas Barrier	Water vapour transmission	Value achieved	0.14 g.m <sup>-2</sup> ·day <sup>-1</sup>
	to BS EN 1931 : 2000		
GP5+ Gas Barrier	Shear strength of joints	Value achieved	293.7 N·(50mm)⁻¹
	Control (heat welded)		
	to BS EN 12317-2 : 2010		
GP5+ Gas Barrier	Air tightness of joint to	No bubbles or any joint	
	MOAT 27 : 1983	degradation	
	Heat welded		Pass
	Taped		Pass

3.1.2 On the basis of data assessed, GP5+ Gas Barrier, including joints, provides an effective barrier to the passage of liquid moisture from the ground.

3.1.3 On the basis of data assessed, the membrane is impervious to water and provides a waterproofing layer capable of accepting minor structural movements without damage.

#### 3.2 <u>Resistance to hazardous ground gases</u>

3.2.1 Results of resistance to hazardous ground gases tests are given in Table 4.

Product assessed	Assessment method	Requirement	Result
GP5+ Gas Barrier	Methane permeability to	As per BS 8485 : 2015	
	BS ISO 15105-1 : 2007	< 40 ml·m <sup>-2</sup> ·day <sup>-1</sup> ·atm <sup>-1</sup>	
	Membrane without joint		0.13 ml·m <sup>2</sup> day <sup>-1</sup> ·atm <sup>-1</sup>
	Membrane with joint <sup>(1)</sup>		≤ 1 ml·m <sup>-2</sup> ·day <sup>-1</sup> ·atm <sup>-1</sup>
GP5+ Gas Barrier	Carbon dioxide permeability to	Value achieved	
	BS ISO 15105-1 : 2007		
	Membrane without joint		3.01 ml·m <sup>-2</sup> ·day <sup>-1</sup> ·atm <sup>-1</sup>
GP5+ Gas Barrier	Radon permeability to	Value achieved	1.0 x 10 <sup>-12</sup> m <sup>2</sup> ·s <sup>-1</sup>
	ISO/TS 11665-13 : 2017		

(1) Hot air welded joint tested.

3.2.2 On the basis of data assessed, GP5+ Gas Barrier will restrict the ingress of radon, methane and carbon dioxide into buildings from landfill and naturally occurring sources, and satisfy the performance criteria for a gas-resistant membrane as defined in BS 8485 : 2015.

## 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

### 7.1 <u>Reuse and recyclability</u>

The product contains polyethylene, which can be recycled.

## 8 Durability

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

#### 8.2 Specific test data were assessed as given in Table 5.

Product assessed	Assessment method	Requirement	Result
GP5+ Gas Barrier	Tensile strength to BS EN 12311-1 : 2000	No significant loss of	
	Longitudinal direction	properties following ageing	
	Heat aged at 70°C for 84 days		Pass
	UV aged at 50°C for 5 hours, followed by		Pass
	1 hr water spray for 132 hours		
	Water soak for 180 days		Pass
GP5+ Gas Barrier	Elongation to	No significant loss of	
	BS EN 12311-1 : 2000	properties following ageing	
	Longitudinal direction		
	Heat aged at 70°C for 84 days		Pass
	UV aged at 50°C for 5 hours, followed by		Pass
	1 hr water spray for 132 hours		
	Water soak for 180 days		Pass
GP5+ Gas Barrier	Dimensional stability to BS EN 1107-2 : 2001	Value achieved	
	Longitudinal direction		0%
	Transverse direction		0%
GP5+ Gas Barrier	Shear strength of joints (heat welded)	No significant loss of	
	Water soak for 180 days to	properties following ageing	
	BS EN 12317-2 : 2010		Pass

#### 8.3 Service life

8.3.1 Under normal service conditions, the product will have a life of at least as long as the building in which it is installed, provided it is designed, installed, and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.3.2 The product will not be significantly affected by short-term exposure to ultraviolet (UV) light. However, it must be protected as soon as practicable after installation.

### **PROCESS ASSESSMENT**

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

### 9 Design, installation, workmanship and maintenance

9.1 <u>Design</u>

9.1.1 The design process was assessed, against the requirements of BS 8000-4 : 1989, BS 8485 : 2015, CP 102 : 1973 Section 3, this Certificate and the Certificate holder's instructions and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 The design of gas protection systems must be carried out by suitably experienced and competent individuals with sufficient knowledge of ground gas risk and the construction methods and materials.

9.1.3 The continuity of the gas protection must extend over the footprint of the building, and the product must be sealed to a gas-resistant damp proof course (DPC) where applicable.

9.1.4 In gas applications, hot air welding specifications must be obtained from the Certificate holder, but such advice is outside the scope of this Certificate.

9.1.5 Where the construction is subject to NHBC requirements, please refer to NHBC NF94 Hazardous Ground gas – an essential guide for housebuilders.

#### 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 GP5+ Gas Barrier must be carried out in accordance with this Certificate and the Certificate holder's instructions following the relevant guidance given in BRE Report BR 211 : 2023, BS 8485 : 2015 and NHBC NF 94.

9.2.3 All gas membrane installation must be subject to third-party independent validation, in accordance with BS 8485 : 2015.

9.2.4 The membrane can be installed in all normal site conditions, provided that the air temperature is not below 5°C to prevent the risk of surface condensation.

9.2.5 The surface onto which the product is to be laid should be smooth, dry and free from sharp protrusions and debris that could damage the membranes. Surfaces must be dry and free from dust and frost.

9.2 6 Unless the base is smooth, a surface blinding of soft sand (or similar material) must be used to prevent puncturing during installation or when concrete screed is being placed.

9.2.7 The surface of the gas membrane to be lapped must be dry and dust-free.

9.2.8 For gas resistance applications, the membrane must be installed either with hot air welded or taped joints in accordance with the Certificate holder's instructions.

9.29 If the membrane is installed below a reinforced floor or concrete slab, it must be covered with a screed or protection layer prior to the positioning of the reinforcement.

9.2.10 If the membrane is above the slab, installation must be delayed until just before the laying of the screed or flooring, to avoid damage from site traffic.

#### Procedure

#### Hot air welded joints

9.2.11 The membrane is rolled out with the printed side uppermost, ensuring that it is properly aligned. All end and side overlaps should be a minimum of 100 mm and laps should be staggered.

9.2.12 Before welding work is carried out, trials must be completed to determine the 'operating window' for the welding equipment, materials and ambient conditions. Typically, the operating window will be between 180 to 240°C at a rate of 1.5 m·min<sup>-1</sup>. In case of doubt, the Certificate holder should be consulted for advice, but such advice is outside the scope of this Certificate.

9.2.13 Weld widths must be a minimum of 50 mm and must be checked for integrity after being formed.

9.2.14 All service penetrations and direction changes must be properly detailed in accordance with the Certificate holder's instructions. Service ducts must be vented to prevent the possibility of gas accumulating in confined spaces.

9.2.15 The membrane must be covered by a screed or other protective layer as soon as possible after installation. If blockwork protection is used, care must be taken to avoid damage to the membrane during construction.

#### Taped joints

9.2.16 For use in damp-proofing applications, the membrane must be jointed using GP TAPE or GP TITANTAPE.

9.2.17 After laying the first sheet, the protective release film on one side of the tape is removed and the tape applied to the clean membrane sheet along a 100 mm guide line from the edge.

9.2.18 The second layer of membrane should be unrolled over the first layer, ensuring an overlap of 150 mm and rolling with a silicone roller to remove any trapped air.

9.2.19 The joint can then be finished with a suitable sealing tape applied over the joint to provide a smooth finish.

#### 9.3 Workmanship

9.3.1 Practicability of installation was assessed against BS 8485 : 2015, on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of GP5+ Gar Barrier must be carried out by installers trained by the Certificate holder.

9.3.2 The BBA operates an Approved Installer Scheme for gas membranes; details of approved installer companies are included on the BBA website (www.bbacerts.co.uk).

#### 9.4 Maintenance and repair

9.4.1 As the product is confined within the structure and has suitable durability, maintenance is not required. However, any damage occurring before enclosure must be repaired.

9.4.2 Any damage to the membranes must be repaired using a patch of the membrane, and laps welded or sealed with GP TAPE or GP TITANTAPE and secured over the edges with a suitable fleece – backed butyl sealing tape. All patched areas must extend a minimum of 100 mm from the damaged area.

9.4.3 If required by the local authority, the adequacy of repair work must be confirmed by an independent validation report.

## **10** Manufacture

10.1 The production processes for the product 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

10.5 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 product is delivered to site in 50 x 2 m rolls wrapped in polythene film. Pallets include a maximum of 25 rolls and are shrink-wrapped for transportation. The 50 x 2 m rolls each have a nominal weight of 50 kg.

11.2 GP TAPE and GP TITANTAPE are available in rolls of 50 mm x 1.5 mm x 10 m, and 100 mm x 1.5 mm x 15 m respectively, in black. The products are packed into cardboard boxes. Each box contains 12 rolls of GP TAPE and four rolls of GP TITANTAPE. Each box has a nominal weight of 1 kg.

11.3 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.3.1 Rolls must be stacked on a flat surface, kept under cover and protected from sunlight and mechanical damage.

## **ANNEX A – SUPPLEMENTARY INFORMATION †**

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

## <u>Construction (Design and Management) Regulations 2015</u> 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.

### CE marking

The Certificate holder has taken the responsibility of CE marking the product, in accordance with harmonised European Standard EN 13967 : 2012.

### Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of EN ISO 9001 : 2015 by TÜV Austria (Certificate 010150310/02).

### Additional Guidance

A.1 There will be no adverse effect on the membrane from the underfloor heating under normal service conditions. In other circumstances, the Certificate holder's advice should be sought, but such advice is outside the scope of this Certificate.

A.2 Additional guidance on the use of damp-proof material is available in CP 102 : 1973 , BS 8000-0 : 2014 and BS 8000-4 : 1989.

## Bibliography

BRE Report BR 211 : 2023 Radon : Guidance on protective measures for new buildings

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 8485 : 2015 + A1 : 2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

BS EN 495-5 : 2013 Flexible sheets for waterproofing — Determination of foldability at low temperature — Plastic and rubber sheets for roof waterproofing

BS EN 1107-2 : 2001 Flexible sheets for waterproofing — Determination of dimensional stability

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

BS EN 12311-1 : 2000 Flexible sheets for waterproofing — Determination of tensile properties — Plastic and rubber sheets for roof waterproofing

BS EN 12317-2 : 2010 Flexible sheets for waterproofing — Determination of shear resistance of joints — Plastic and rubber sheets for roof waterproofing

BS EN 12730 : 2015 Flexible sheets for waterproofing — Bitumen, plastic, and rubber sheets for roof waterproofing — Determination of resistance to static loading

BS ISO 15105-1 : 2007 Plastics — Film and sheeting — Determination of gas-transmission rate — Differential-pressure methods

CP 102 : 1973 Code of practice for protection of buildings against water from the ground

EN 13967 : 2012 + A1: 2017 Flexible sheets for waterproofing — Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet — Definitions and characteristics

EN ISO 9001 : 2015 Quality management systems — Requirements

ISO/TS 11665-13 : 2017 Measurement of radioactivity in the environment Air: radon 222 Part 13: Determination of the diffusion coefficient in waterproof materials: membrane two-side activity concentration test method

MOAT 27 : 1983 General directive for the assessment of roof waterproofing systems

NHBC NF 94 Hazardous ground gas – an essential guide for housebuilders

## **Conditions of Certificate**

## Conditions

1 This Certificate:

- relates only to the product 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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 or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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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