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Agrément Certificate 18/5589

Product Sheet 1

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# **GARLAND ROOF WATERPROOFING SYSTEM**

# **DURA-COAT LIQUID-APPLIED ROOF WATERPROOFING SYSTEM**

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the Dura-Coat Liquid-Applied Roof Waterproofing System, for use as an elastomeric roof waterproofing membrane on new and existing flat roofs with limited access, including those with protected zero falls, and pitched roofs including green roof and roof garden 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 system will resist the passage of moisture into the building (see section 6).

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

**Adhesion** — the adhesion of the system is sufficient to resist the effects of any likely wind suction and the effects of thermal or other minor movement likely to occur in practice (see section 8).

**Resistance to mechanical damage** — the system will accept, without damage, the limited foot traffic and loads associated with installation and in service (see section 9).

**Resistance to penetration by roots** — the system has satisfactory resistance to penetration by plant roots (see section 10). **Durability** — under normal service conditions, the system will provide a durable waterproof covering with a service life of at least 25 years (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 Agrément

Como

Claire Custis- Momas

Date of First issue: 21 November 2018

John Albon – Head of Approvals Construction Products Claire Curtis-Thomas Chief Executive

 ${\it Certificate\ amended\ on\ 23\ September\ 2020\ to\ update\ zero\ fall\ wording.}$ 

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

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

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

**British Board of Agrément** 

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# Regulations

In the opinion of the BBA, the Dura-Coat Liquid-Applied Roof Waterproofing 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 suitable substructures, the use of the system can enable a roof to be unrestricted

under this Requirement. See sections 7.1 to 7.4 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 Materials and workmanship

Comment: The system is acceptable. See section 12 and the *Installation* part of this Certificate.

3

# The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)(2) Durability, workmanship and fitness of materials

Comment: The use of the system satisfies the requirements of this Regulation. See sections 11.1 to

11.3 and 12 and the *Installation* part of this Certificate.

Regulation: 9 Building standards applicable to construction

Standard: 2.8 Spread from neighbouring buildings

Comment: The system, when applied to a non-combustible substrate, can be regarded as having

low vulnerability under clause 2.8.1<sup>(1)(2)</sup> of this Standard. See sections 7.1 to 7.4 of this

Certificate.

Standard: 3.10 Precipitation

Comment: 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: 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: All comments given for 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)(i) Fitness of materials and workmanship

Comment: (iii)(b)(i) 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 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 system can enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 to 7.4 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 section: 3 *Delivery and site handling* of this Certificate.

# **Additional Information**

#### **NHBC Standards 2018**

In the opinion of the BBA, the Dura-Coat Liquid-Applied Roof Waterproofing 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 Dura-Coat Liquid-Applied Roof Waterproofing System is cold-applied, based on a polyurethane modified methacrylate (PUMA) resin, reinforced with an embedded non-woven polyester mat to provide a waterproofing membrane with a minimum dry film thickness of 2.3 mm, including the polyester mat.

#### 1.2 The system comprises:

- Dura-Coat a two-component, liquid-applied waterproofing coating based on PUMA resin
- Dura-Coat Thix a high viscosity version of Dura-Coat for use at details and upstands
- Dura-Systems Concrete Primer a two-component primer based on methyl methacrylate
- Grip Polyester Fabric a non-woven polyester fabric with a nominal mass per unit area of 165 g·m<sup>-2</sup>, for use as an embedded reinforcement in Dura-Coat
- Dura-Systems Catalyst a 50% dibenzoyl peroxide catalyst for use with Dura-Coat and Dura-Systems Concrete Primer to initiate cure
- Dura-Coat Coloured Topcoat available in a range of colours.

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

- specialist primers
- accelerator for use at temperatures below 0°C
- concrete repair products
- cleaner for cleaning tools.

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

#### 2 Manufacture

- 2.1 The system components are manufactured using batch-blending processes.
- 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 The system components are delivered to site as detailed in Table 1. When correctly stored in unopened containers, the resin and catalyst components listed will have a shelf-life of at least six months. The appropriate technical data sheet must be consulted for the correct storage conditions.

Table 1 Weights and packaging					
Component	Weight (kg)	Packaging type			
Dura-Coat (resin component)	13, 25	Metal pail			
Dura-Coat THIX	5, 25	Metal pail			
Dura-Coat Coloured Topcoat	20	Metal pail			
Dura-Systems Concrete Primer	20	Metal pail			
Dura-Systems Catalyst	25	Cardboard box			

- 3.2 Grip Polyester Fabric is available in rolls 100 m x 1 m and 100 m x 0.15 m.
- 3.3 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 Dura-Coat Liquid-Applied Roof Waterproofing System.

# **Design Considerations**

#### 4 Use

- 4.1 The Dura-Coat Liquid-Applied Roof Waterproofing System is satisfactory for use on new and existing roofs with limited access in:
- inverted roof in pitched, flat, protected zero falls roof specifications
- protected roof in pitched, flat, protected zero falls roof specifications, eg covered by paving or other suitable protection
- green roof and roof garden in pitched, flat, protected zero falls roof specifications
- exposed roof in pitched and flat roofs specifications .
- 4.2 The system is suitable for use on the following substrates:
- concrete (primed and unprimed)
- bituminous substrates (unprimed)
- steel (unprimed).
- 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, cleaning of gutters, etc. Where traffic in excess of this is envisaged, special precautions, such as additional protection to the membrane, must be taken.

- 4.4 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80. Zero fall roofs are defined for the purpose of this Certificate as those having a finished fall which can vary 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. Pitched roofs are those having falls in excess of 1:6.
- 4.5 When designing flat roofs, twice the minimum finished fall should be assumed unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc.
- 4.6 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2003, BS 8217 : 2005 and, where appropriate, *NHBC Standards* 2018, Chapter 7.1.
- 4.7 For green roofs, roof gardens and inverted roofs, the 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 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.
- 4.8 In inverted roof specifications, the ballast requirements must be calculated by a suitably experience and competent individual in accordance with the relevant parts of BS EN 1991-1-4: 2005 and its UK National Annex. Additional guidance is given in BBA Information Bulletin No 4 *Inverted Roofs Drainage and U value corrections*.
- 4.9 The drainage systems for green roofs and roof gardens must be correctly designed and accessible for maintenance purposes. Dead loads can increase significantly if the drains become blocked causing waterlogging of the drainage layers.
- 4.10 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.*
- 4.11 Insulation materials to be used in conjunction with the membranes must be in accordance with the Certificate holder's instructions and be either:
- as described in the relevant clauses of BS 8217: 2005, or
- the subject of a current BBA Certificate and used in accordance with, and within the scope of, that Certificate.

# 5 Practicability of installation

The system must only be installed by installers who have been trained and approved by the Certificate holder.

#### 6 Weathertightness



- 6.1 The system will adequately resist the passage of moisture to the inside of the building and so comply with the relevant requirements of the national Building Regulations.
- 6.2 The system is impervious to water and, when used as described in this Certificate, will give a weathertight roofing capable of accepting minor movement without damage.

# 7 Properties in relation to fire



7.1 When tested in accordance with CEN/TS 1187 : 2012 and classified in accordance with EN 13501-5 : 2016, a system comprising a 12 mm thick fibre cement board with a density of 1800 kg·m $^{-3}$ , Dura-Systems Concrete Primer applied at between 300 and 500 g·m $^{-2}$  (dry), Dura-Coat membrane applied in two coats at a total application rate of 2800 g·m $^{-2}$  (dry) reinforced with Grip Polyester Fabric, and Dura-Coat Coloured Topcoat (Grey) applied at 300 g·m $^{-2}$  (dry), achieved a classification of B<sub>ROOF</sub>(t4).

- 7.2 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 Building Regulations.
- 7.3 The designation of other specifications and colours should be confirmed by:

**England and Wales** — test or assessment in accordance with Approved Document B (Volumes 1 and 2), Appendix A, clause A1

Scotland — test to conform to Mandatory Standard 2.8, clause 2.8.1

**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, irrigated green roofs and roof gardens will be unrestricted under the national Building Regulations
- 7.5 If allowed to dry, plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants for the roof. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire-rating of the roof is not compromised.

#### 8 Adhesion

- 8.1 The adhesion of the system to the substrates listed in section 4.2 and day joints is sufficient to resist the effects of wind suction, elevated temperatures, thermal shock or minor movement likely to occur in practice.
- 8.2 Where the system is installed over a carrier membrane bonded or fixed to insulation, the resistance to wind uplift will be dependent on the adhesion of the carrier to the insulation or cohesive strength of the components and the method by which they are secured to the roof deck.
- 8.3 In roof garden specifications the soil used should not be of a type that will be removed or become localised due to wind scour.
- 8.4 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 mechanical damage

The system can accept, without damage, the normal foot traffic and light concentrated loads associated with installation and maintenance, and pedestrian traffic on defined walkways. However, reasonable care should be taken to avoid puncture by sharp objects or concentrated loads. In cases of doubt, advice is available from the Certificate holder.

#### 10 Resistance to penetration by roots

The system will resist penetration by plant roots and can be used as a waterproofing system in green roof and roof garden specifications. Advice on suitable planting specifications should be sought from the Certificate holder.

# 11 Maintenance



- 11.1 The system must be the subject of annual inspections and roof drains should be kept clear, as is good practice with all membrane and liquid-applied flat roofing systems.
- 11.2 Maintenance should include checks and operations to ensure that the membrane and drainage outlets are free from the build-up of silt and other debris, and that protection layers, eg walkways (where applicable), are in good condition.
- 11.3 In the event of the system being contaminated by oil, grease or other chemicals, the advice of the Certificate holder must be sought.
- 11.4 Where damage has occurred, it must be repaired at the earliest opportunity in accordance with section 15 and the Certificate holder's instructions.

# 12 Durability



12.1 The system will have a life expectancy of at least 25 years.

12.2 The colour fastness of the system including Dura-Coat Coloured Topcoat has not been assessed and repeated application may be required to maintain the required colour at shorter intervals.

#### Installation

#### 13 General

- 13.1 The system must be installed in accordance with the Certificate holder's instructions and this Certificate.
- 13.2 The area to be waterproofed must be dry and free from dirt, grease, oil and other contaminants that could impair the adhesion of the system. Steel surfaces must be free from rust.
- 13.3 Deck surfaces must be free from sharp projections, eg concrete nibs.
- 13.4 On concrete surfaces, residual humidity must be ≤4% prior to the application of Dura-Coat or Dura-Systems Concrete Primer. Laitance and other loose material must be thoroughly removed by suitable mechanical means, eg shot blasting.
- 13.5 Damaged areas of the substrate (eg blistered bitumen or roofing felt) must be removed, replaced or repaired. Damaged concrete surfaces must be repaired using a suitable repair product compatible with the system. The Certificate holder must be consulted for suitable products.
- 13.6 Detailing, eg upstands and penetrations, is carried out in accordance with the Certificate holder's instructions.
- 13.7 Tools should be cleaned with a suitable cleaning solvent before the products cure.

#### 14 Procedure

#### **Priming**

- 14.1 When required, concrete surfaces should be primed with Dura-Systems Concrete Primer.
- 14.2 Dura-Systems Concrete Primer must be thoroughly stirred prior to addition of the catalyst to ensure uniform distribution of the paraffin contained in the product.
- 14.3 The required quantity of catalyst (50% dibenzoyl peroxide powder) is then added and thoroughly mixed using a slow speed drill fitted with a suitable mixing blade. The amount of catalyst powder required is dependent on the ambient temperature, as detailed in Table 2.

Table 2 Dura-Systems Concrete Primer – catalyst addition by temperature			
Ambient temperature (°C)	Catalyst addition (% by weight of primer)		
30	1		
20	2		
10	4		
0	6		

14.4 After the catalyst has been stirred in, the primer is poured onto the substrate in stripes and evenly spread over the substrate using a short pile roller or squeegee to achieve a coverage rate of between 300 and 500 g·m<sup>-2</sup> until saturation occurs resulting in a continuous film of primer. On very porous surfaces, a second coat of primer may be required.

14.5 When a continuous primer film is achieved, fire-dried graded quartz sand (0.3 to 0.7 mm) is broadcast into the wet primer at a rate of 300 to 500 g·m $^{-2}$ .

#### Waterproofing membrane — Dura-Coat

- 14.6 Dura-Coat must be thoroughly stirred prior to addition of the catalyst to ensure uniform distribution of the paraffin contained in the product.
- 14.7 The required quantity of catalyst (50% dibenzoyl peroxide powder) is then added and thoroughly mixed using a slow speed drill fitted with a suitable mixing blade. The amount of catalyst powder required is dependent on the ambient temperature as detailed in Table 3.

Table 3 Dura-Coat, Dura-Coat Thix and Dura-Coat Coloured Topcoat — catalyst addition by temperature							
Ambient		Catalyst addition					
temperature	(g)						
(°C)	Dura	-Coat	Dura-Coat Thix	<b>Dura-Coat Coloured</b>			
				Topcoat			
	13 kg Pail	25 kg pail	25 kg Pail	10 litres			
30	85	170	250	80			
20	170	340	350	100			
10	350	700	600	200			
0	520	1000	1000	300			

- 14.8 After the catalyst has been stirred in, the mixed Dura-Coat is poured onto the substrate and evenly spread using a short pile roller or squeegee to achieve a coverage rate of at least 1.2 kg·m<sup>-2</sup>.
- 14.9 Grip Polyester Fabric with a nominal weight per unit area of 165 g·m<sup>-2</sup> is then bedded into the wet Dura-Coat and a second layer of Dura-Coat is applied wet on wet over the fabric at a minimum application rate of 1.6 kg·m<sup>-2</sup>, to achieve an overall minimum application rate of Dura-Coat of 2.8 kg·m<sup>-2</sup> and a minimum dry film thickness of 2.3 mm.

#### **Topcoat**

- 14.10 When Dura-Coat is fully cured, Dura-Coat Coloured Topcoat can, if required, be applied.
- 14.11 The topcoat must be thoroughly stirred prior to addition of the catalyst to ensure uniform distribution of the paraffin contained in the product.
- 14.12 Due to a short pot life, only small quantities of Dura-Coat Coloured Topcoat should be mixed at any time. The required quantity of catalyst (50% dibenzoyl peroxide powder) is added and thoroughly mixed using a slow speed drill fitted with a suitable mixing blade. The amount of catalyst powder required is dependent on the ambient temperature as detailed in Table 3 for 10 litres of the product.
- 14.13 Once mixed the product must be immediately poured onto the cured Dura-Coat membrane and spread with a paint roller to achieve a minimum coverage of  $300 \, \text{g} \cdot \text{m}^{-2}$ .

#### 15 Repair

Damaged areas of the system should be repaired as soon as practicable to maintain the waterproofing integrity by cutting back the damaged area to sound material and reinstating the system to the original specification as described in sections 13 and 14, ensuring a minimum 100 mm overlap over the cleaned and prepared existing coating. The Certificate holder must be consulted for details.

#### **Technical Investigations**

#### 16 Tests

Tests were carried out and the results assessed to determine:

- watertightness
- water vapour transmission
- tensile properties
- delamination strength to concrete, steel, bituminous surface
- delamination strength of day joints
- resistance to dynamic indentation
- resistance to static indentation
- resistance to fatigue cycling
- effect of heat ageing on tensile characteristics, dynamic indentation and fatigue cycling (200 days at 80°C)
- effect of UV-A radiation on tensile characteristics and dynamic indentation at -10°C (1000 MJ·m<sup>-2</sup> total exposure at 60°C)
- effect of water exposure on delamination strength and static indentation at 90°C (30 and 180 days at 60°C)
- effect of extremes of installation temperatures (0 and 30°C)
- abrasion resistance
- resistance to root penetration (EN 13948 : 2007)
- external roof fire exposure.

# 17 Investigations

- 17.1 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.
- 17.2 Independent reports relating to external fire exposure to roofs tests to CEN /TS 1187 : 2012, Test 4, and classification to EN 13501-5 : 2016 were assessed.
- 17.3 Independent test reports relating to the issue of a relevant ETA were assessed.

# **Bibliography**

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

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

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  $Eurocode\ 1$  —  $Actions\ on\ structures$  —  $General\ actions$  —  $Wind\ actions$ 

CEN/TS 1187: 2012 Test methods for external fire exposure to roofs

EN 13501-5 : 2016 Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests

EN 13948 : 2007 Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to root penetration

# **Conditions of Certification**

#### 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.