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**Agreement Certificate**

**15/5277**

Product Sheet 1

## IKO EPDM ROOFING SYSTEMS

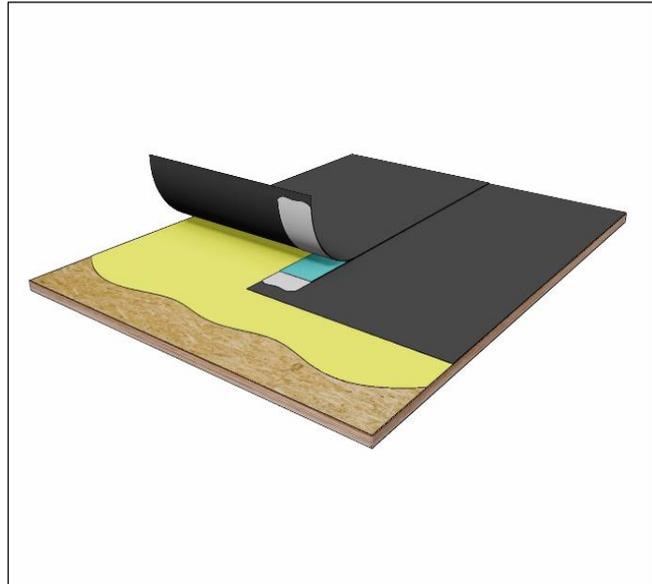
### IKO RUBERSEAL EPDM ROOFING MEMBRANE

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to IKO Ruberseal EPDM Roofing Membrane, for use in roof waterproofing specifications that are fully-adhered or loose-laid with suitable ballast covering, on limited access flat and pitched roofs.

(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 into the building (see section 6).

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

**Resistance to wind uplift** — the product will resist the effects of any likely wind suction acting on the roof (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 a durable roof waterproofing with a service life in excess of 35 years (see section 11).

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 Agreement

Date of First issue: 25 November 2015

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](http://www.bbacerts.co.uk)

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## Regulations

In the opinion of the BBA, IKO Ruberseal EPDM Roofing 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)

<b>Requirement:</b>	<b>B4(2)</b>	<b>External fire spread</b>
Comment:		On a suitable substructure, the use of the product will enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:		The product, including joints, will enable a roof to meet this Requirement. See section 6.1 of this Certificate.
<b>Regulation:</b>	<b>7</b>	<b>Materials and workmanship</b>
Comment:		The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.



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

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:		The use of the product satisfies the requirements of this Regulation. See sections 10 and 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	2.8	Spread from neighbouring buildings
Comment:		The product, when applied to a suitable substructure, is regarded as having low vulnerability under clause 2.8.1 <sup>(1)(2)</sup> of this Standard. See section 7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of the product, including joints, will enable a roof to meet the requirements of this Standard, with reference to clauses 3.10.1 <sup>(1)(2)</sup> and 3.10.7 <sup>(1)(2)</sup> . 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.
<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
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 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic).



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

<b>Regulation:</b>	<b>23(a)(i)</b>	<b>Fitness of materials and workmanship</b>
Comment:	<b>(iii)(b)(i)</b>	The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture and weather</b>
Comment:		The product, including joints, will enable a roof to meet the requirements of this Regulation. See section 6.1 of this Certificate.

<b>Regulation:</b>	<b>36(b)</b>	<b>External fire spread</b>
<b>Comment:</b>	On a suitable substructure, the use of the product will enable a roof to 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 and 3.4) of this Certificate.

### Additional Information

#### NHBC Standards 2014

NHBC accepts the use of IKO Ruberseal EPDM Roofing 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*.

#### CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised Standard BS EN 13956 : 2005. An asterisk (\*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

### Technical Specification

#### 1 Description

1.1 IKO Ruberseal EPDM Roofing Membrane is a single-ply, unreinforced elastomeric waterproofing membrane, based on the rubber polymer ethylene-propylene-diene monomer (EPDM). The product is black and has the nominal characteristics given in Table 1.

*Table 1 Nominal characteristics*

<b>Characteristic (unit)</b>	<b>Value</b>
Thickness (mm)	1.2
Mass per unit area* (kg·m <sup>-2</sup> )	1.49
Roll length* (m)	from 25 to 100
Roll width* (m)	1.7 and multiples thereof
Tensile strength* (N·mm <sup>-2</sup> )	8
Elongation* (%)	300
Tear resistance* (N)	30
Dimensional stability* (%)	0.5
Foldability at low temperatures* (°C)	-40
Watertightness*	Pass

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

- Seam Tape, Flashing Tape and Cover Tapes — rubber adhesive tapes for joints between the membranes
- Ruberseal Contact Adhesive — a ready-to-use contact adhesive for adhering EPDM and butyl membranes to dry substrates such as wood, concrete and metals
- Ruberseal Sealant — a sealant used to seal joints at upstand terminations
- Ruberseal Cleaning Wash — for use in cleaning jointing areas
- Ruberseal PU Adhesive — a PU-based curing adhesive for bonding membranes to a roofing deck
- Ruberseal Tape Primer — used to prime EPDM membrane when using EPDM tapes and sealants
- Ruberseal Perimeter Strip — used to secure the membrane in non-penetrating base tie-ins.

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

- Ruberseal Edge Sealant — used to seal cut edges of Ruberseal tapes
- Ruberseal Corner Patch — circular pieces of uncured Flashing Tape for forming internal and external corner details
- Clamping strip — used to secure the EPDM membrane at the top of the adhered upstand
- Peelstop Bar — installed at the base of upstands/penetrations using suitable fasteners
- Quicktrim Edge Detail — used to secure the membrane at the roof perimeter
- Ruberseal Rainwater Outlets — for draining of roof areas
- Ruberseal Pipe Boot — self-adhesive, flexible rubber flashing to seal pipe penetrations, 25–150 mm in diameter
- IKO Flash — lead-free flashing.

## 2 Manufacture

2.1 IKO Ruberseal EPDM Roofing Membrane is manufactured by blending EPDM monomer, processing oils, fillers and other additives. The sheets are produced by feeding the mix through a calender before vulcanisation.

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 being operated by the manufacturer are being maintained.

2.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 and BS EN ISO 14001 : 2004 by Bureau Veritas Certification (Certificates 10000266 and 10000267 respectively).

## 3 Delivery and site handling

3.1 The product is delivered to site in rolls wrapped in polythene film. The rolls carry a label bearing the manufacturer's name, production number, identification, dimensions and the BBA logo incorporating the number of this Certificate. If the product is incorporated into roofing panels fabricated off-site, the supplier is responsible for ensuring that the fabricated panel is delivered to site with a label bearing the manufacturer's name, production number, identification, dimensions and the BBA logo incorporating the number of this Certificate.

3.2 EPDM membranes do not require particular storage conditions. However, jointing strips and details should be stored in a clean, dry area at temperatures between 5°C and 20°C.

3.3 Sealants, adhesives and cleaning wash should be stored in a dry ventilated area at temperatures between 5°C and 20°C and isolated from potential ignition sources. Site storage of the product should not exceed six months.

3.4 The Certificate holder has taken the responsibility of classifying and labelling the product 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 IKO Ruberseal EPDM Roofing Membrane.

### 4 Use

4.1 IKO Ruberseal EPDM Roofing Membrane is satisfactory for use as:

- a fully-adhered waterproofing layer, mechanically fixed at perimeters or upstands, on flat roofs with limited access
- a loose-laid waterproofing layer with suitable ballast covering or fully-adhered waterproofing layer with suitable ballast covering, on flat roofs with limited access. The membrane should be mechanically fixed or fully adhered at perimeters and upstands, and covered with suitable ballast on horizontal perimeter areas.

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 and cleaning of gutters, etc. Where traffic in excess of this is envisaged, additional protection to the membrane must be provided (see section 9).

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

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

4.5 Insulation materials to be used in conjunction with the product 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.

4.6 Contact with certain bituminous, coal tar and oil-based products must be avoided as the membrane is not compatible with lower grades of bitumen. If contact with such products is likely, a separating layer should be interposed before installing the waterproofing sheet. Where doubt arises, the advice of the Certificate holder should be sought.

### 5 Practicability of installation

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

### 6 Weathertightness



6.1 The membrane, including joints when completely sealed and consolidated, will adequately resist the passage of moisture into a building and enable a roof to comply with the requirements of the national Building Regulations.

6.2 The product is impervious to water and will achieve a weathertight roof capable of accepting minor structural movement.

### 7 Behaviour in relation to fire



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

- an 18 mm OSB deck and a layer of 1.2 mm IKO Ruberseal fully adhered with Ruberseal PU Adhesive
- a 0.7 mm profiled metal deck, a 0.2 mm polyethylene vapour control layer, 70 mm glass-tissue faced polyisocyanurate insulation board mechanically fixed, and a layer of 1.2 mm IKO Ruberseal fully adhered with Ruberseal PU Adhesive.

7.2 The membrane, when used with an inorganic covering listed in the Annex of Commission Decision 2000/553/EC, can be considered to be unrestricted under the national requirements.

7.3 The designation of other specifications should be confirmed by:

**England and Wales** — test or assessment in accordance with Approved Document B, Appendix A, clause 1

**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.

## 8 Resistance to wind uplift

8.1 The ballast requirements for loose-laid systems must be calculated in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex. The membrane should always be ballasted with a minimum depth of 50 mm of aggregate (20 to 40 grade gravel). In areas of high-wind exposure, the Certificate holder's advice should be sought. Alternatively, concrete slabs on suitable supports can be used.

8.2 When fully bonded to a decking, the product should have sufficient adhesion to resist the effects of wind suction, elevated temperatures and thermal shock conditions likely to occur in practice.

8.3 When the product is fully adhered to insulation boards, the resistance to wind uplift will be dependent on the cohesive strength of the insulation and the method by which it is secured to the roof deck. This should be taken into account when the insulation material is selected.

## 9 Resistance to foot traffic

The membrane can accept, without damage, the limited 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 using, for example, concrete slabs supported on bearing pads.

## 10 Maintenance



10.1 Roofs must be the subject of annual inspections and maintenance to ensure continued performance.

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

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

10.3 Where damage has occurred it must be repaired in accordance with section 16 and the Certificate holder's instructions.

10.4 A planned maintenance cycle, and inspections by the Certificate holder at minimum intervals of every five years, should be introduced if an extended service life is required. The Certificate holder can advise on methods of extending the service life. This could include the use of thicker membrane, specific maintenance requirements (such as maintenance coating), or localised replacement or repair (see section 16).

## 11 Durability



11.1 The durability of all roofing materials is dependent on the roof design, installation, immediate environment, maintenance and use.

11.2 The product will have a service life in excess of 35 years.

11.3 IKO Ruberseal EPDM membrane has been in use in Germany and the UK since 1976 and 1992 respectively. The BBA has examined the oldest available sites where the material has been installed. Tests conducted on the naturally-aged material taken from existing sites confirm satisfactory retention of properties, indicating that a service life in excess of 40 years can be achieved with periodic maintenance as stated in section 10.

## 12 Reuse and recyclability

The product comprises ethylene-propylene-diene monomer, which can be recycled.

## Installation

### 13 General

13.1 Installation of the IKO Ruberseal EPDM Roofing Membrane must be carried out by trained installers working in accordance with the relevant clauses of the manufacturer's instructions, BS 8000-4 : 1989 and this Certificate.

13.2 Conditions on site should be those suitable for normal roof waterproofing work. Deck surfaces must be dry, clean and free from sharp projections such as nail heads and concrete nibs.

13.3 Installation should not be carried out during wet weather (eg rain, fog or snow) nor when the temperature is below 0°C.

13.4 Contact with oil-based products must be avoided. If the membrane does come into contact with such materials, the surfaces should be carefully cleaned.

13.5 At details and perimeters, attachment using mechanical fixings is required with all fixing installation methods.

### 14 Procedure

#### Loose-laid applications with suitable ballast covering or fully-adhered applications with suitable ballast covering

14.1 The membrane is unrolled onto the substrate without folds or ripples, and mechanically fastened with Peelstop Bar at perimeters. Flashing and jointing must be carried out as described in section 16. The membrane can be loose laid or fully adhered in the field area with Ruberseal PU Adhesive.

14.2 The loose-laid or fully-adhered applications should be covered by at least 50 mm of well-rounded gravel (20/40 grade gravel) or minimum 40 mm concrete slabs. In areas of high-wind exposure, heavier gravel may be required, or thicker concrete slabs on bearing pads can be used as ballast. The required weight of the ballast will vary depending on the area of the roof, and specific zones on the roof must be calculated in accordance with local Building Regulations. A protective mat of non-woven polyester fleece (minimum 400 g·m<sup>-2</sup>) should be laid between the membrane and the ballast.

14.3 When using a ballasted application, account must be taken in the design of the deck of the extra dead loading owing to the weight of the aggregate and/or paving.

#### Fully-bonded applications

14.4 Only insulation suitable for fully-adhered systems can be used in fully-bonded applications. Where doubt arises as to compatibility, the advice of the Certificate holder should be sought.

14.5 A layer of Ruberseal PU Adhesive should be applied by roller evenly to the substrate at a rate of between 250 g·m<sup>-2</sup> and 400 g·m<sup>-2</sup>, the exact rate depending on the porosity of the substrate.

14.6 Immediately after application, the membrane must be unrolled across the substrate. Full bonding is achieved by ensuring that wrinkling does not occur in the laid membrane and that air has not been trapped beneath it. For a satisfactory application, at least 90–95% of the total area of membrane must be bonded to the substrate.

14.7 The laps must be sealed and the flashing installed in the manner described in section 15.

## 15 Details

### Jointing procedure — tape method

15.1 The sheets are positioned with a 100 mm overlap. The bottom sheet is marked 15 mm from the edge of the seam. The top sheet is folded back and tacked with Ruberseal Tape Primer for the splicing operation.

15.2 The lap joint area is cleaned using Ruberseal Cleaning Wash if required. A thin layer of Ruberseal Tape Primer is applied to the seam area with a brush or roller using smooth strokes.

15.3 IKO Ruberseal seam tape (75 mm wide) is positioned on the bottom sheet with the release paper facing up. The edge of the release paper is aligned with the marks on the bottom sheet.

15.4 Using a silicon roller, the tape is rolled across the paper to give uniform compression and remove any trapped air.

15.5 The top sheet is allowed to fall onto the tape, whilst checking for alignment of release paper beyond the top sheet, trimming back with scissors if required.

15.6 The release paper is steadily peeled at a 90° angle to the tape, keeping it low to the surface to avoid pockets, and the top sheet is mated along the seam length.

15.7 The top of the seam is rolled with a silicon roller, first across the seam to remove any air pockets and then along the full length of the seam.

### Flashing procedure

15.8 Flashings must be completed in accordance with manufacturer's instructions, using cold bonding and moulded or prefabricated finishing pieces.

## 16 Repair

16.1 Any damage must be repaired in accordance with the Certificate holder's instructions. Repairs are made by applying a patch of the membrane which must extend at least 50 mm beyond the defect.

16.2 When using seam tapes, any damage can be repaired by cleaning beyond the affected area a minimum of 150 mm and applying a patch of Ruberseal Cover Tape in accordance with the method for seam tape installation.

## Technical Investigations

## 17 Tests

An assessment was made of data to EN 13956 : 2006 in relation to:

- tensile strength and elongation\*
- dimensions\*
- low temperature foldability\*
- dimensional stability\*
- static indentation\*
- dynamic indentation\*
- water vapour properties\*
- watertightness\*
- tear resistance\*
- joint peel and shear resistance\*.

## 18 Investigations

18.1 Existing data on the fire performance of the membrane were assessed.

18.2 Data resulting in the issue of the Certificate holder's Belgian Certificate ATG 09/1740 were evaluated.

18.3 An assessment of the durability of the membrane was based on the findings of visits to existing sites in Germany, and the results of tests conducted on unaged and naturally-aged material.

18.4 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.

## Bibliography

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

BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*

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

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*

BS EN 13956 : 2005 *Flexible sheet for waterproofing — Plastic and rubber sheets for roof waterproofing — Definitions and characteristics*

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

BS EN ISO 14001 : 2004 *Environmental management systems — Requirements with guidance for use*

### 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 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.