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**Agrément Certificate**

**21/5969**

Product Sheet 1

### DORSEY CAVITY TRAYS

### DORSEY SAFESEAL

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Dorsey SafeSeal, a range of stainless steel cavity trays used in the external walls of masonry or steel frame constructions, with a brickwork outer leaf.

(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

**Behaviour in relation to fire** — the trays have a reaction to fire classification of A1 without the need for testing, as defined by Commission Decision 96/603/EC, and their use is unrestricted by the documents supporting the national Building Regulations (see section 6).

**Behaviour under load** — the products will not adversely affect the ability of the wall to sustain and transmit compressive loads (see section 7).

**Resistance to passage of water** — the products will provide an effective barrier against liquid water above the ground dpc level (see section 8).

**Use with cavity wall insulation** — the products are compatible with A1 fire-rated materials currently used as cavity wall insulation (see section 9).

**Durability** — under normal service conditions, the products will remain effective for the lifetime of the building in which they are installed (see section 11).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 5 November 2021

  
Hardy Giesler  
Chief Executive Officer

Certificate amended on 25 November 2021 to update sections 1.1 and 14.10

*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)  
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.*

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## Regulations

In the opinion of the BBA, Dorsey SafeSeal 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>A1</b>	<b>Loading</b>
Comment:		The products can contribute to satisfying this Requirement when properly installed. The presence of a dpc, however, can reduce the shear and tensile strength of a wall at that location. See section 7 of this Certificate.
<b>Requirement:</b>	<b>B4(1)</b>	<b>External fire spread</b>
Comment:		The products are unrestricted under this Requirement. See section 6 of this Certificate.
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:		The products can contribute to satisfying this Requirement. See section 8 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>7(2)</b>	<b>Materials and workmanship</b>
Comment:		The products are unrestricted by this Regulation. See section 6 of this Certificate.



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

<b>Regulation:</b>	<b>8(1)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:		The use of the products can contribute to a construction satisfying this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	1.1(a)(b)	Structure
Comment:		The products can contribute to a construction satisfying this Standard, with reference to clause 1.1.1 <sup>(1)(2)</sup> . The presence of a dpc, however, can reduce the shear and tensile strength of a wall at that location. See section 7 of this Certificate.
Standard:	2.6	Spread on external walls
Comment:		The products are unrestricted under this Standard, with reference to clauses 2.6.5 <sup>(1)</sup> and 2.6.6 <sup>(2)</sup> . See section 6 of this Certificate.
Standard:	3.1	Precipitation
Comment:		The products can contribute to a construction satisfying this Standard, with reference to clauses 3.10.1 and 3.10.4. See section 8 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products can contribute to satisfying 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:		Comments in relation to the products 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 products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture</b>
Comment:		The products can contribute to satisfying this Regulation. See section 8 of this Certificate.
<b>Regulation:</b>	<b>30</b>	<b>Stability</b>
Comment:		The products can contribute to satisfying this Regulation. The presence of a dpc, however, can reduce the shear and tensile strength of a wall at that location. See section 7 of this Certificate.
<b>Regulation:</b>	<b>36(a)</b>	<b>Fire safety</b>
Comment:		The products are unrestricted under this Requirement. See section 6 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 2021

In the opinion of the BBA, Dorsey SafeSeal, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.1 *External masonry walls* and 6.10 *Light steel framed walls and floors*.

## Technical Specification

### 1 Description

1.1 Dorsey SafeSeal cavity trays are formed from 0.7 mm thick stainless steel grade 304 to either BS EN 10088-2 : 2014 or BS EN 10088-4 : 2009. The standard trays consist of the following:

Dorsey SafeSeal A1 – a horizontal metal sheet with an angled upstand and vertical back plate to the rear. It is embedded into fresh mortar in the outer leaf of the building. The tray is manufactured with an angled pattern of perforations towards the front of the horizontal part of the tray to provide a key for the mortar course. The product including stop ends is also supplied without perforations as the Dorsey SafeSeal Lintel Tray, for use above ‘C’ and ‘L’ type lintels. See section 14.10 of this Certificate.

Other variations of the basic products are as follows:

- Dorsey SafeSeal Corner Units – 0.7 mm factory-welded, available for both internal and external corners as shown in Figures 2 and 3
- Dorsey SafeSeal Stopends – 0.7 mm factory-welded, available for both left and right termination of horizontal runs as shown in Figure 4
- Dorsey SafeSeal Brick Return Stop End – 0.7 mm factory-welded, available for both left and right brick return termination of horizontal runs
- Dorsey SafeSeal interchange lengths – 0.7 mm factory-welded sections for transitions between two different tray interface designs

- Dorsey SafeSeal movement joint end caps – 0.7 mm factory-welded stop ends, fitted back to back to allow for movement within the structure
- Dorsey SafeSeal site specific shapes – 0.7 mm factory-welded sections to accommodate non-standard brickwork detailing.

1.2 Dorsey SafeSeal A1 trays are supplied in typical lengths of 2500 mm as shown in Figure 1 and available in various lengths up to 3000 mm.

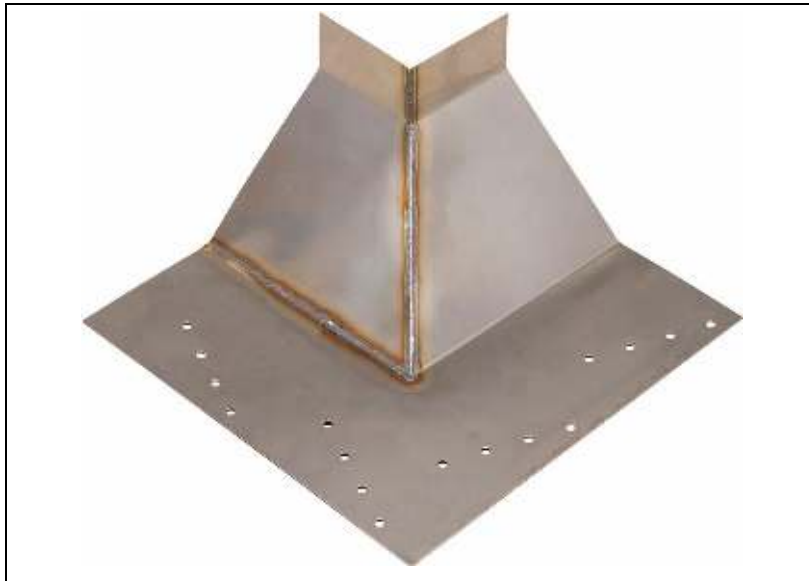
*Figure 1 Dorsey SafeSeal cavity trays*



*Figure 2 Dorsey Safeseal Corner Units (internal)*



*Figure 3 Dorsey Safeseal Corner Units (external)*



*Figure 4 Dorsey Safeseal Stopped*



1.3 A range of ancillary items is supplied for use with the trays, including:

- DAFA Moisture Barrier Tape – 60 mm wide single-sided tape for over sealing tray joints.
- SafeSeal Butyl Tape – 50 mm x 1.5 mm double-sided butyl tape for sealing between joints
- SafeSeal Applicator – an applicator tool to assist bonding of DAFA tape to tray components
- SafeSeal Weep Vent – stainless steel weep vent for cavity drainage
- SafeSeal Concealed Weephole – a stainless steel weep vent with reduced size exit aperture.

## **2 Manufacture**

2.1 The products are factory formed from stainless steel grade 304. Corner units and special shapes are made to order and welded in the factory to ensure they are watertight.

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 products, along with boxed ancillary items, are delivered to site shrink-wrapped on pallets. Address labels and delivery notes are attached along with envelopes containing customer drawings.

3.2 To prevent damage or surface contamination, the pallets should be unloaded by forklift truck and the products stored in a secure place in the original packaging until required for use.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Dorsey SafeSeal.

### Design Considerations

#### 4 Use

4.1 Dorsey SafeSeal and the associated ancillary items, when specified and installed in accordance with this Certificate and generally with the specifications in PD 6697 : 2019, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006, BS EN 1996-3 : 2006 and BS 8215 : 1991, are satisfactory for use as cavity trays in external cavity walls with a brick outer leaf and either a steel framing system (SFS) or a concrete/blockwork inner leaf.

4.2 The external leaf of the cavity walls should be built from standard brickwork with a minimum thickness of 100 mm.

4.3 The Dorsey SafeSeal A1 has perforations through the steel towards the outer face of the external brickwork. These perforations will act as a 'key' to the mortar and improve the bond of the mortar to the steel. Such perforations will, however, tend to transmit rising damp through the mortar if used at the base of a structure. For this reason, the products should not be used as a ground-level dpc.

#### 5 Practicability of installation

The products are designed to be installed by a competent general builder or bricklayer experienced with these types of products.

#### 6 Behaviour in relation to fire



The trays have a reaction to fire classification of A1 without the need for testing, as defined by Commission Decision 96/603/EC, and their use is unrestricted by the documents supporting the national Building Regulations.

#### 7 Behaviour under load



The products will not adversely affect the ability of a wall to sustain and transmit compressive loads. However, the presence of a dpc can reduce the shear and tensile (and therefore bending) strengths of a wall. Test walls<sup>(1)</sup> incorporating the products and tested to BS EN 1052-4 : 2000 gave a Characteristic Shear Strength of 0.14 Nmm<sup>-2</sup>, and when tested to DD86-1 : 1983 gave a Characteristic Internal Angle of Friction of 10.28°. The effect of wind and other horizontal or upward forces should be considered at the design stage.

(1) The test walls in these tests used Sunset Red bricks with a tabulated compressive strength of 49 Nmm<sup>-2</sup> and a 1:1:6 mortar with a compressive strength of 3.95 Nmm<sup>-2</sup>.

## 8 Resistance to passage of water



The Dorsey SafeSeal A1 and associated ancillaries (such as corner units and stopends), when sealed together, provide a continuous barrier against liquid water. Water is typically ejected through weepholes or evaporated from the outer skin.

## 9 Use with cavity wall insulation

Stainless steel has no effect on, and is unaffected by, materials currently used as A1 fire-rated cavity wall insulants.

## 10 Maintenance

As the products are confined within the wall and wall cavity, and have suitable durability (see section 11), maintenance is not required. However, any damage occurring before enclosure must be repaired (see section 15).

## 11 Durability



Under normal service conditions, the trays will remain effective for the life of the building in which they are installed.

## 12 Reuse and recyclability

The products comprise steel, which can be recycled.

## Installation

### 13 General

13.1 Dorsey SafeSeal must be installed in accordance with this Certificate, the Certificate holder's instructions, and generally in accordance with PD 6697 : 2019, BS EN 1996-1-1 : 2005, BS EN 1996-2 : 2006, BS EN 1996-3 : 2006 and BS 8215 : 1991.

13.2 The products may be installed at a minimum temperature of 5°C in any weather that permits bricklaying. All relevant surfaces must be clean and dry prior to installing the cavity tray units.

### 14 Procedure

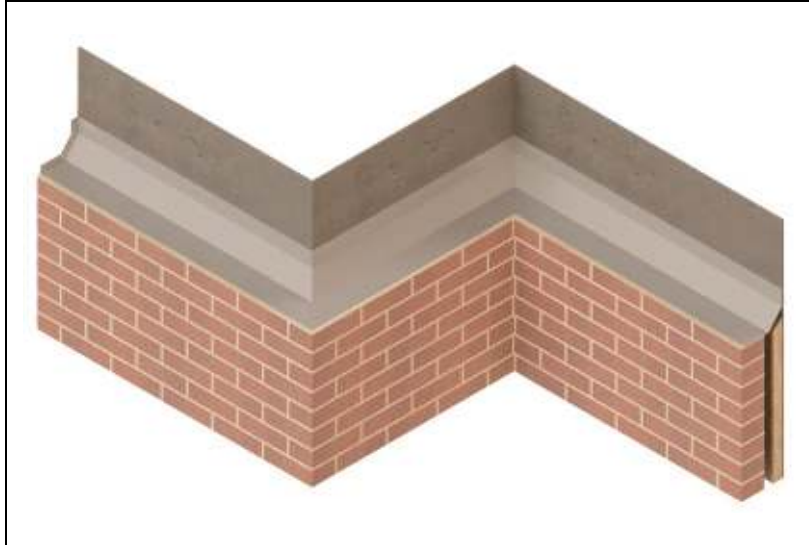
14.1 Installation documents should be checked before laying the corner units on a fresh bed of mortar.

14.2 The 50 mm wide double-sided butyl tape is applied across the side edge, taking care not to overlap the end of the tray. Care should be taken to press the butyl strip to the steel, especially into the bend in the tray, with the supplied applicator tool, to eliminate any possibility of leaving pathways for water ingress.

14.3 The remaining top layer of release film is then removed from the adhered butyl strip, and the SafeSeal A1 unit is then placed on top, ensuring a minimum of 100 mm overlap. The unit should be pressed firmly down on the butyl strip to ensure a good bond is made see Figure 5.



*Figure 5 Trays, Corners, and Stop ends as installed and sealed with SafeSeal Butyl Tape*



14.4 A strip of 60 mm wide DAFA tape is placed centrally over the overlap between the SafeSeal units and pressure applied using the supplied SafeSeal applicator tool. A further two strips of 60 mm wide DAFA tape are placed centrally to overlap 30 mm each side of the first strip of DAFA tape. The joint is completed by using firm pressure with the SafeSeal applicator tool, to ensure close contact between all layers of the DAFA tape see Figure 6.

*Figure 6 Trays, Corners, and Stop ends over sealed with DAFA Moisture Barrier Tape*



14.5 Where there is a discontinuity or interruption of the SafeSeal A1, SafeSeal Stopends should be used. The positioning of the stopend depends on the position of the vertical perpendicular brick courses. When the perpendicular course lands outside of the SafeSeal A1 unit, then the SafeSeal Stopend is placed using a minimum overlap of 100 mm. The joint is formed in the same way as for a standard SafeSeal A1, using a 50 mm strip of double-sided butyl with a minimum overlap of 100 mm between the SafeSeal A1 and the SafeSeal Stopend, plus three overlapping strips of the DAFA tape.

14.6 Corner units are installed at corners using the same method as described in sections 14.1 to 14.4.

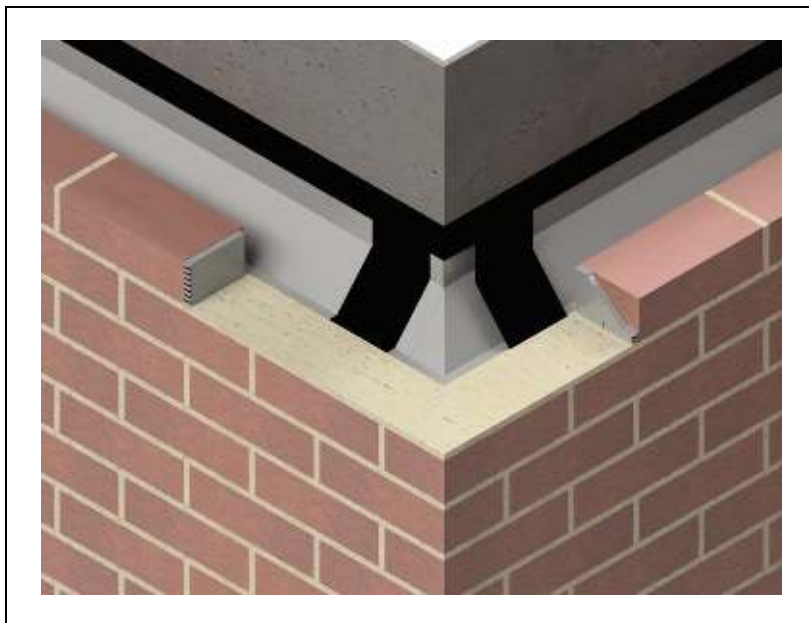
14.7 Steps 14.1 to 14.6 are repeated until the installation of the trays is completed.

14.8 A fresh bed of mortar is then applied to the trays and a course of masonry units is bedded onto it. SafeSeal weep vents and/or SafeSeal weep holes are installed at a minimum spacing of 900 mm, unless the trays are used with lintels,



in which case they are installed at minimum spacing of 450 mm (with the proviso of a minimum number of two per lintel) see Figure7.

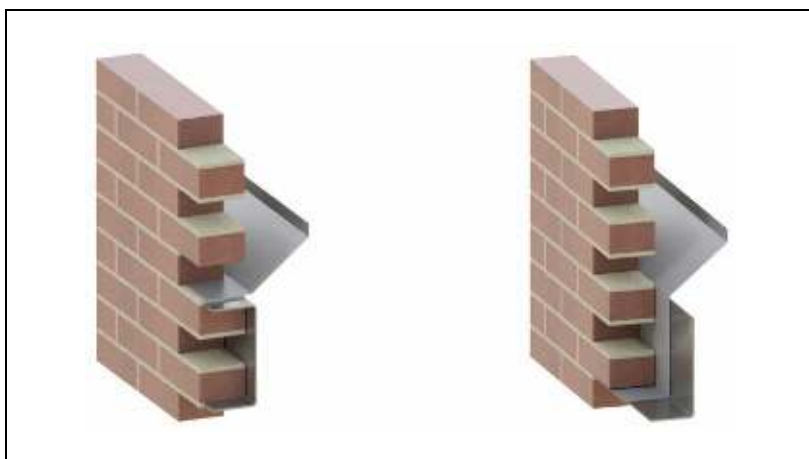
*Figure 7 External corner with brickwork including SafeSeal Weep Vent or SafeSeal Concealed Weephole*



14.9 The product is self-supporting; however, the upper edge of the SafeSeal A1, SafeSeal Corner units, SafeSeal Stopends and SafeSeal Brick Return Stop Ends can be sealed to the inner leaf using tapes dependent on specific site requirements. This sealing method is outside the scope of this Certificate.

14.10 The Dorsey SafeSeal Lintel variation of the product is compatible with both 'C' and 'L' type lintels (see Figure 8). A minimum lintel projection beyond the vertical dpc of 25 mm should be observed and stopends should be placed to coincide with perpend joints. Further guidance can be found in the NHBC Standards, Chapter 6.1 (6.1.17) and Technical Guidance Note 6.1/29 *Forming stop ends to cavity trays*.

*Figure 8 Use of the Dorsey SafeSeal Lintel Tray with a 'C' or 'L' type lintel.*



## **15 Repair**

Damaged cavity trays should be replaced prior to the installation of brick, block or masonry courses above the tray.

## **Technical Investigations**

## **16 Tests**

Tests were carried out and the results assessed to determine:

- Characteristic shear strength
- Characteristic flexural bond strength
- Overlap shear strength of cavity trays joints after accelerated ageing
- Leakage test carried out on a sample installation.

## **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 A visit was carried out to a site-in-progress to assess the practicability of installation.

## Bibliography

BS 8215 : 1991 *Code of practice for design and installation of damp-proof courses in masonry construction*

BS EN 1996-1-1 : 2005 + A1 : 2012 *Eurocode 6 – Design of masonry structures – General rules for reinforced and unreinforced masonry structures*

BS EN 1996-1-2 : 2005 *Eurocode 6 – Design of masonry structures – General rules – Structural fire design*

BS EN 1996-2 : 2006 *Design of masonry structures – Design considerations, selection of materials and execution of masonry*

BS EN 1996-3 : 2006 *Eurocode 6 – Design of masonry structures – Simplified circulation methods for unreinforced masonry structures*

BS EN 10088-2 : 2014 *Stainless steels– Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

BS EN 10088-4 : 2009 *Stainless steels– Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes*

BS EN 1052-4 : 2000 *Methods of test for masonry – Determination of shear strength including damp proof course*

DD86-1 : 1983 *Damp-proof courses – Methods of test for flexural bond strength and short term shear strength*

PD 6697 : 2019 *Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2*

### 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.