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**Agrément Certificate**

**91/2638**

Product Sheet 6

### CATNIC LINTELS

### CATNIC MBA/ANG ANGLE LINTEL RANGE

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the Catnic MBA/ANG Angle Lintel Range, comprising coated galvanized or stainless steel profiles for use in construction with external single leaf solid masonry walls to provide support to walls, floors or roofs, or to support the outer leaf of a cavity wall construction, above window or door openings.

(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

**Structural performance** — the products are suitable for use in walls with openings between 300 and 3600 mm (clear spans) (see section 6).

**Behaviour in relation to fire** — the products are non-combustible (see section 7).

**Corrosion protection** — the products will have adequate protection against corrosion (see section 10).

**Durability** — provided that the products are designed, installed and used in accordance with this Certificate, they will have a service life of at least 60 years taking into account the restrictions based on the materials used (see section 12).



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 Second issue: 3 September 2020

Originally certificated on 28 March 1991

Hardy Giesler  
Chief Executive Officer

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, the Catnic MBA/ANG Angle Lintel Range, 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. See sections 6.2 to 6.5 of this Certificate.
<b>Requirement:</b>	<b>B3(1)</b>	<b>Internal fire spread (structure)</b>
Comment:		The products can be incorporated in a construction satisfying this Requirement. See section 7.2 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The products are acceptable. See section 12 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 7.1 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 products are acceptable. See section 12 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 are acceptable, with reference to clauses 1.1.1 <sup>(1)(2)</sup> and 1.1.2 <sup>(1)(2)</sup> of this Standard. See sections 6.2 to 6.5 of this Certificate.
Standard:	2.3	Structural protection
Comment:		The products can be incorporated in a construction satisfying this Standard, with reference to clauses 2.3.1 <sup>(1)(2)</sup> and 2.3.3 <sup>(1)(2)</sup> . See sections 7.1 and 7.2 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products 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 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 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>30</b>	<b>Stability</b>
Comment:		The products are acceptable. See sections 6.2 to 6.5 of this Certificate.

<b>Regulation:</b> 35(1)	<b>Internal fire spread — Structure</b>
<b>Comment:</b>	The products can be incorporated in a construction satisfying this Regulation. See sections 7.1 and 7.2 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 sections: 3 *Delivery and site handling* (3.1 and 3.4) and 14 *General* (14.2) of this Certificate.

### Additional Information

#### NHBC Standards 2020

In the opinion of the BBA, the Catnic MBA/ANG Angle Lintel Range, 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 6.1 *External masonry walls*.

#### CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 845-2 : 2013.

### Technical Specification

#### 1 Description

1.1 The Catnic MBA/ANG Angle Lintel Range is manufactured from profiles of hot-dipped galvanized steel to BS EN 10346 : 2015 with a 275 g·m<sup>-2</sup> zinc coating finished with a black polyester-powder coating 3.5 ± 0.5 µm thick (NN104E – Interpon 610) or a 600 g·m<sup>-2</sup> zinc coating, or stainless steel to BS EN 10088-2 : 2014, with the details shown in Table 1 of this Certificate.

*Table 1 Lintel specification*

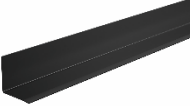
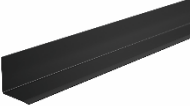
Material	Manufacturing Standard	Grade	Coating type
Hot-dipped galvanized steel <sup>(1)</sup>	BS EN 10346	DX51D	Z275
		DX51D	Z600
		S250GD	Z600
Stainless steel (304 S15)	BS EN 10088-2	1.4301	–

(1) Minimum yield stress 250 N·mm<sup>-2</sup>.

1.2 The lintels are a flush type for single leaf solid wall construction, with a plastering key on the appropriate faces.

1.3 The lintels are manufactured in a range of lengths from 600 to 3900 mm in increments of 150 mm. The lintel profiles are shown in Table 2.

**Table 2 Catnic Angle Style Lintel Range**

Lintel profiles <sup>(1)</sup>	Outer brick/block width	Lintel type	Sheet thickness (mm)	Mass per unit length (kg·m <sup>-1</sup> )	Overall height (mm)	Manufactured length (mm)	Clear span (mm)	Minimum end bearing (mm)	Safe working load (kN)
	100	MBA	1.6	2.16	88	600-750 1350	300-450 1050	150	5 3
	100	ANG	2	2.69	88	900-1200	600-900	150	4
			2	3.39	131	1350-1500	1050-1200		5
			2	3.96	167	1650-2100	1350-1800		7
			2	4.71	215	2250-2400	1950-2100		10
			3.1	7.27	215	2550-3000	2250-2700		15
			4	9.36	213	3300-3900	3000-3600	15	

(1) All dimensions in mm.

(2) The Certificate holder can give details of lintel type references and availability.

1.4 Other items or components<sup>(1)</sup> which may be used with the products, but which are outside the scope of this Certificate, are:

- brick or block masonry units<sup>(1)</sup> to BS EN 771-1 : 2011, BS EN 771-2 : 2011, BS EN 771-3 : 2011, BS EN 771-4 : 2011, BS EN 771-5 : 2011 and BS EN 771-6 : 2011
- bricklaying mortar<sup>(1)</sup> to BS EN 998-2 : 2016
- gypsum plasterboard<sup>(1)</sup> to BS EN 520 : 2004
- gypsum plaster (thistle board finish)<sup>(1)</sup> to BS EN 13279-1 : 2008
- stop-ends and cavity trays to PD 6697: 2019.

(1) Details on the products' specifications can be obtained from the Certificate holder.

## 2 Manufacture

2.1 The products are manufactured from galvanized or stainless steel coil which is slit, perforated if necessary, straightened and cut to length to provide blanks. The lintel profiles are formed from these blanks by press-braking or roll-forming.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate FM 14913).

## 3 Delivery and site handling

3.1 The lintels are delivered in bundles or separately, depending on their size and shape, and strapped together with protective wooden supports between each layer. Each lintel carries a bar coded label with the manufacturer's name, website details and logo; lintel type, length and weight; and date of manufacture.

3.2 Reasonable care must be taken during unloading, stacking and storage to avoid damaging the lintels. Any lintels that have suffered deformation or damage to their protective coating must not be used. Minor damage to the coating must be repaired by using the same anti-corrosive paint or compatible polyester-resin coating used for treating cut edges, or zinc-rich paint. Cutting must not be undertaken on site.

3.3 The lintels must be stored off the ground to avoid the risk of either mechanical damage or contamination by corrosive substances.

3.4 The lintels may be handled by site personnel or mechanical lifting devices, depending on the size and weight of the lintel (see the Certificate holder's brochure). Care must be taken to ensure that any forks, slings or chains do not damage the protective coating.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Catnic MBA/ANG Angle Lintel Range.

## Design Considerations

### 4 Use

4.1 The Catnic MBA/ANG Lintel Range is satisfactory for use in external single leaf solid masonry walls to provide support to wall, floor or roof loads (or a combination of these), or in the external masonry wall of a cavity wall, of brickwork and/or blockwork to provide support above openings. The lintels do not bridge the cavity of the external cavity walls.

4.2 Designers, planners, contractors and/or installers must ensure that the installation of the lintels is in accordance with the Certificate holder's instructions and the information given in this Certificate.

4.3 The lintels are lighter than conventional concrete lintels and can be positioned by one or two operatives.

4.4 Where relevant, the perforated steel lintel provides a suitable substrate for plastering.

### 5 Practicability of installation

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

### 6 Structural performance

6.1 The lintels<sup>(1)</sup> have adequate strength and stiffness to sustain the safe working loads given in Table 2, when uniformly distributed, subject to the following conditions:

- the defined cavity width and size of standard masonry units and clear spans is not exceeded and a minimum of 150 mm bearing is provided at each end
- where part of the loading is applied as a concentrated load, each concentrated load must be applied on a length of not less than 200 mm. In such cases, the total applied loading must not produce bending moments, shear forces or reactions greater than those produced by the uniformly distributed loads specified in Table 2.

(1) The specified loads given relate to simply supported lintels, laterally and torsionally unrestrained. Therefore, there are no requirements for composite action with, or restraint by, adjacent elements of the construction.



6.2 The shear forces on the lintels must not exceed shear forces which would be derived using the safe working loads (which are assumed to be uniformly distributed loads) in Table 2.

6.3 In addition to the requirements specifically referred to in this Certificate, structures of brickwork or blockwork in which the lintels are incorporated must be designed and constructed in accordance with BS EN 1996-1-1 : 2005 and BS EN 1996-1-2 : 2005 or BS EN 1996-3 : 2006, and their UK National Annexes, PD 6697 : 2019 and the relevant technical specifications of the national Building Regulations.

6.4 The load-span data shown in Table 2 is valid only for the safe working loads and the lintel clear spans given. The loads have been derived from tests according to BS EN 846-9 : 2016, supported by calculations, and relate to a

maximum allowable deflection of span/325. For other loading conditions, or spans outside this range, the Certificate holder should be consulted.

6.5 To avoid excessive eccentricities of loading, the lintels must only be used with standard masonry units 100 mm widths.

6.6 Guidance for the assessment of loads on lintels in masonry is given in BS EN 845-2 : 2013. It is the responsibility of the designer to ensure that the applied loads do not exceed the safe working loads given in Table 2 of this Certificate.

## 7 Behaviour in relation to fire



7.1 Galvanized and stainless steel profiles are 'non-combustible' and are classified as Class A1 in accordance with the national Building Regulations.

7.2 The fire resistance of the wall incorporating the lintels must satisfy the national Building Regulations and should be evaluated by reference to the requirements of the documents supporting the national Building Regulations. An appropriate assessment or test must be carried out by a United Kingdom Accreditation Service (UKAS) accredited laboratory (accredited for the test concerned).

## 8 Thermal performance

The linear thermal transmittance and temperature factor for junction details in external cavity walls incorporating the lintels should be calculated in accordance with BS EN 10211 : 2017, following the guidance in BR 497 : 2016. The Certificate holder can provide a detailed  $\Psi$  value calculation if required.

## 9 Condensation risk

The construction incorporating the lintel should adequately limit the risk of surface condensation in dwellings and should be established by numerical modelling in accordance with BRE Information Paper IP 1/06.

## 10 Corrosion protection

The galvanized steel lintels have adequate protection against corrosion, providing:

- the polyester coating protection remains undamaged or minor blemishes are repaired
- the mortar complies with the requirements of BS EN 998-2 : 2016.

## 11 Maintenance

Maintenance is not required, but the exposed toe of the lintel may be re-painted to improve its appearance, using finishes that are compatible with a polyester coating.

## 12 Durability



Providing the lintels are designed and installed in accordance with this Certificate, they will have a service life of at least 60 years, subject to the following conditions:

- lintels comprising zinc-coated steel profiles are limited for use in buildings up to three storeys in height located in areas with non-aggressive environments only, in accordance with PD 6697 : 2019, Table 2, Note 3
- lintels comprising stainless steel profiles grade 304 are limited for use in buildings located in areas with non-aggressive environments only, in accordance with PD 6697 : 2019, Table 2, Note 4
- lintels comprising stainless steel profiles grade 316 are not limited for use in any areas, in accordance with PD 6697 : 2019, Table 2, Note 4
- the galvanized steel profile of the lintel should be protected as described in section 10 of this Certificate.

## 13 Reuse and recyclability

The steel component can be recycled.

### 14 General

14.1 Typical installation details of the products are shown in Figures 1 and 2.

14.2 Except for the longer span lintels, the products can generally be lifted and handled by a single operative. Protective gloves should be worn when handling the lintels.

14.3 The products must be installed with a minimum 150 mm end bearing, and must be fully bedded on bricklaying mortar.

14.4 It is important for the lintels to be propped and laterally restrained during construction and removed carefully after masonry has fully cured in accordance with the Certificate holder's instructions. Horizontal timber spreaders should be used to avoid distorting the lintel, and props fitted at approximately 1200 mm centres. A pinch batten should be fitted at the heel of the lintel to minimise any rotation. The Certificate holder's instructions must be used in connection with this process.

14.5 The lintels must be used in conjunction with a masonry construction designed and installed in accordance with Section 6 of this Certificate. It is essential that the correct number and type of wall ties are used.

14.6 Weep holes must be provided in the outer leaf above the lintel to allow drain moisture from the cavity. A minimum of two weep holes should be provided per lintel. For fair-faced masonry, weep holes should be provided at centres not greater than 450 mm.

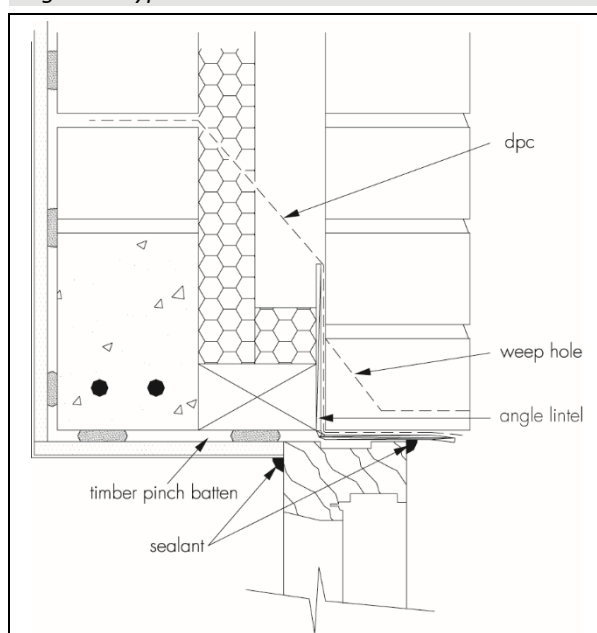
14.7 Stop-ends should be used on cavity trays and lintels, and are required under all exposure conditions, particularly in areas of severe exposure and where full-fill cavity insulation is specified (see Figure 2). The stop-ends should be applied as recommended in PD 6697 : 2019 (outside the scope of this Certificate).

14.8 Mortar joints in exposed masonry should be weatherstruck in severe exposure zones.

14.9 Precautions must be taken to prevent mortar dropping through the cavity onto the lintel and obstructing the weep holes.

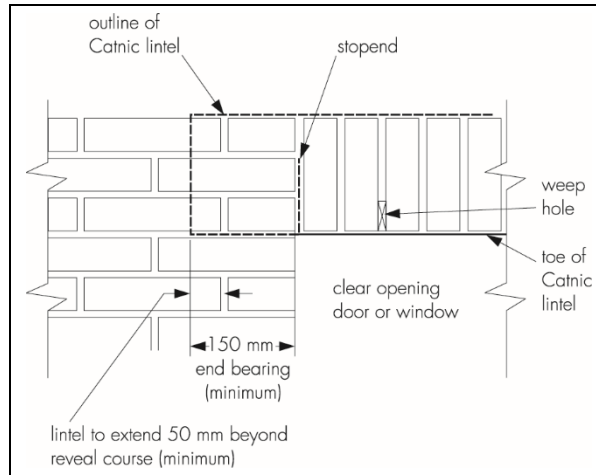
14.10 Operations likely to damage the protective coatings or impair the strength of the lintels (for example, cutting, welding or drilling) must not be undertaken. Cleaning of excess mortar must be carried out with a soft material to avoid damaging the coating.

Figure 1 Typical installation details





**Figure 2 Detail showing minimum end bearing, stop-ends and weep holes**



## Technical Investigations

### 15 Tests

Tests were carried out on the Catnic MBA/ANG Angle Lintel Range and the results assessed to determine:

- the flexural and shear strength of the lintel in accordance with BS EN 846-9 : 2016
- load-deflection characteristics to BS EN 845-2 : 2013
- thickness and quality of galvanized and polyester resin coatings
- resistance to damage of the polyester resin coatings
- the quality of the spot welding and its effect on the galvanizing.

### 16 Investigations

16.1 The following investigations were carried out on the products:

- calculations and review of the results of the load-deflection tests to establish structural performance
- suitability of the corrosion protection, including review of results of long-term exposure tests on galvanized steel
- practicability of installation and durability.

16.2 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

BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings*

BR 497 : 2016 *Conventions for Calculating Linear Thermal Transmittance and Temperature Factors*

BS EN 520 : 2004 + A1 : 2009 *Gypsum plasterboards — Definitions, requirements and test methods*

BS EN 771-1 : 2011 + A1 : 2015 *Specification for masonry units — Clay masonry units*

BS EN 771-2 : 2011 + A1 : 2015 *Specification for masonry units — Calcium silicate masonry units*

BS EN 771-3 : 2011 + A1 : 2015 *Specification for masonry units — Aggregate concrete masonry units (dense and light-weight aggregates)*

BS EN 771-4 : 2011 + A1 : 2015 *Specification for masonry units — Autoclaved aerated concrete masonry units*

BS EN 771-5 : 2011 + A1 : 2015 *Specification for masonry units — Manufactured stone masonry units*

BS EN 771-6 : 2011 + A1 : 2015 *Specification for masonry units — Natural stone masonry units*

BS EN 845-2 : 2013 + A1 : 2016 *Specification for ancillary components for masonry — Lintels*



BS EN 846-9 : 2016 *Methods of test for ancillary components for masonry — Part 9: Determination of flexural resistance and shear resistance of lintels*

BS EN 998-2 : 2016 *Specification for mortar for masonry — Masonry mortar*

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

NA to BS EN 1996-1-1 : 2005 + A1 : 2012 *UK National Annex to Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

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

NA to BS EN 1996-1-2 : 2005 *UK National Annex to Eurocode 6 — Design of masonry structures — General rules — Structural fire design*

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

NA + A1 : 2014 to BS EN 1996-3 : 2006 *UK National Annex to Eurocode 6 — Design of masonry structures — Simplified calculation 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 10211 : 2017 *Thermal bridges in building construction — Heat flows and surface temperatures — Detailed calculations*

BS EN 10346 : 2015 *Continuously hot-dip coated steel flat products for cold forming – Technical delivery conditions*

BS EN 13279-1 : 2008 *Gypsum binders and gypsum plasters — Definition and requirements*

BS EN ISO 9001 : 2015 *Quality management systems – Requirements*

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

### 17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.