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Agrément Certificate

91/2638

Product Sheet 4

CATNIC LINTELS

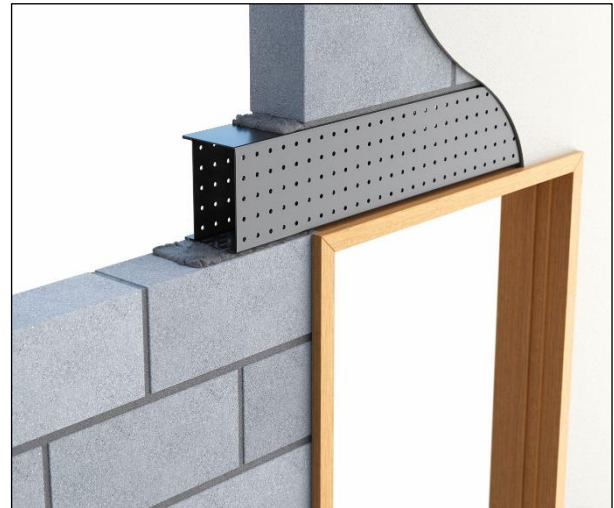
CATNIC INTERNAL WALL LINTELS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Catnic Internal Wall Lintels, comprising coated galvanized or stainless steel lintels for use in internal masonry walls or partitions.

(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 450 and 4500 mm (clear spans) (see section 6).

Behaviour in relation to fire — in a conventional brick/block construction, the products can have a fire resistance of up to one hour (see section 7).

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 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 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

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, Catnic Internal Wall Lintels, 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:	A1	Loading
Comment:		The products can contribute to satisfying this Requirement. See sections 6.2 to 6.4 of this Certificate.
Requirement:	B3(1)	Internal fire spread (structure)
Comment:		The products can be incorporated in a construction satisfying this Requirement. See sections 7.1 to 7.3 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The products are acceptable, with reference to clauses 1.1.1 ⁽¹⁾⁽²⁾ and 1.1.2 ⁽¹⁾⁽²⁾ of this Standard. See sections 6.2 to 6.4 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 ⁽¹⁾⁽²⁾ and 2.3.3 ⁽¹⁾⁽²⁾ . See sections 7.1 to 7.3 of this Certificate.
Regulation:	12	Building standards applicable to conversions
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 ⁽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 products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	30	Stability
Comment:		The products can be incorporated in a construction satisfying this Regulation. See sections 6.2 to 6.4 of this Certificate.
Regulation:	35(1)(2)(3)	Internal fire spread — Structure
Comment:		See sections 7.1 to 7.3 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 13 *General* (13.2) of this Certificate.

Additional Information

NHBC Standards 2020

In the opinion of the BBA, Catnic Internal Wall Lintels, 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 6.3 *Internal 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 Catnic Internal Wall Lintels are manufactured from hot-dipped galvanized steel to BS EN 10346 : 2015 with a 275 g·m⁻² zinc coating finished with a black polyester-powder coating 3.5 ± 0.5 µm thick (NN104E – Interpon 610), 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 ⁽¹⁾	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⁻².

1.2 The products (except types CN92, CN102 and CN100) incorporate perforations on the appropriate faces, to provide a key for plastering.

1.3 They are manufactured in a range of lengths from 750 to 3600 mm, in 150 mm increments. The lintel profiles are shown in Table 2, with a typical profile shown in Figure 1.

Figure 1 Internal wall lintel (BSD100 type)

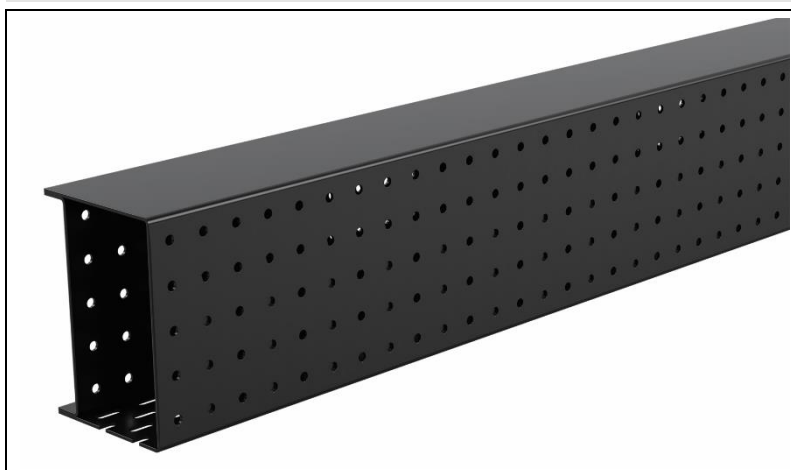


Table 2 Lintels for internal solid masonry walls or partitions⁽¹⁾

	Wall width	Lintel type ⁽²⁾	Sheet thickness (mm)	Mass per unit length (kg·m ⁻¹)	Overall height (mm)	Manufactured length (mm)	Clear span (mm)	Minimum end bearing (mm)	Safe working load ⁽³⁾ (kN)
EXTRA LIGHT DUTY	75	CN92	1.2	1.2	25	1050–1200	900–1050	75	7
	100	CN102	1.2	1.8	25	1050–1200	900–1050		7
LIGHT DUTY	75	CN100	2.00	4.7	50	1050–1200	900–1050	75	10
STANDARD DUTY	100	BSD100	1.6	5.97	143	750–2100	450–1800	150	19
			2	7.46	143	2250–2700	1950–2400		20
			2.5	12.4	219	2850–3600	2550–3300		29
			3.1	15.7	219	3900–4575	3600–4275		29
						4800	4500		27
HEAVY DUTY	100	BHD100	2	7.46	143	750–1500	450–1200	150	29
			2.5	9.4	143	1650–2100	1350–1800		39
			2.5	12.4	219	2250–2700	1950–2400		39
			3.1	15.7	219	2850–3600	2550–3300		51
			3.1	18.82	295	3900–4800	3600–4500		51
EXTRA HEAVY DUTY	100	BXD100	2.5	9.4	143	750–1500	450–1200	150	47
			3.1	15.7	219	1650–2700	1350–2400		59
STANDARD DUTY	140	BSD140	1.6	6.92	143	750–2100	450–1800	150	19
			2	8.65	143	2250–2700	1950–2400		20
			2.5	13.05	219	2850–3600	2550–3300		29
			3.1	16.18	219	3900–4575	3600–4275		29
						4800	4500		27
HEAVY DUTY	140	BHD140	2	8.65	143	750–1500	450–1200	150	29
			2.5	10.9	143	1650–2100	1350–1800		39
			2.5	13.05	219	2250–2700	1950–2400		39
			3.1	16.18	219	2850–3600	2550–3300		51
			3.1	20.48	295	3900–4800	3600–4500		51
EXTRA HEAVY DUTY	140	BXD140	2.5	10.9	143	750–1500	450–1200	150	47
			3.1	16.18	219	1650–2700	1350–2400		59

(1) The lintels covered by this Certificate have a current BSI Kitemark License No KM 07234 to BS EN 845-2 : 2013.

(2) All dimensions in mm.

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

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

- brick or block masonry units⁽¹⁾ 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⁽¹⁾ to BS EN 998-2 : 2016
- gypsum plasterboard⁽¹⁾ to BS EN 520 : 2004
- gypsum plaster (thistle board finish)⁽¹⁾ to BS EN 13279-1 : 2008.

(1) Details of the 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 elements/components are formed from these blanks by press-braking or roll-forming. The components are then assembled by spot-welding or press-joining to form the completed lintel.

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 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 Internal Wall Lintels.

Design Considerations

4 Use

4.1 Catnic Internal Wall Lintels are satisfactory for use in internal masonry walls of brickwork and/or blockwork to provide support to wall, roof or floor loads (or a combination of these), above openings.

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 lintels provide 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⁽¹⁾ have adequate strength and stiffness to sustain the safe working loads given in Table 2, when uniformly distributed, subject to the following conditions:

- the 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 safe working loads (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 the 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 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 When the lintels are used in a conventional brick/block construction with protection provided by gypsum plaster as shown in Figure 2, the lintel construction can have a fire resistance of 'one hour' in relation to the national Building Regulations (England, Wales and Northern Ireland) and of 'medium' duration (Scotland)⁽¹⁾. Construction should be in accordance with the requirements of BS EN 1996-1-2 : 2005.

(1) Designers should refer to the TRADA fire Test Report No. FR275 (available from the Certificate holder).

7.3 For any other construction containing the lintels, the fire resistance of the wall in which they are incorporated must satisfy the national 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

Specific thermal requirements do not apply to internal walls. Therefore, the thermal transmittance of walls incorporating the lintels has not been assessed.

9 Condensation risk

Specific requirements do not apply to internal walls. Therefore, this performance has not been assessed.

10 Maintenance

Maintenance is not required.

11 Durability



Providing the lintels are designed and installed in accordance with this Certificate and the galvanized coating remains undamaged, they will have a service life of at least 60 years.

12 Reuse and recyclability

The steel component can be recycled.

Installation

13 General

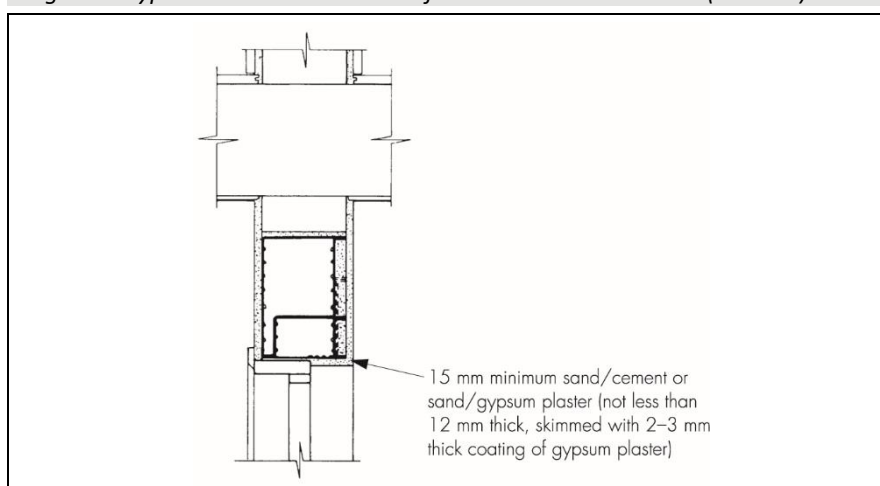
13.1 Typical installation details of the products are shown in Figure 2.

13.2 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.

13.3 The products must be installed with the end bearing specified in Table 2, and must be fully bedded on bricklaying mortar.

13.4 Courses of bricks or blocks supported by the lintels must be raised evenly to avoid excessive eccentricity of loading.

Figure 2 Typical installation details of internal solid wall lintels (BSD100)



14 Tests

Tests were carried out on the Catnic Internal Wall Lintels 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.

15 Investigations

15.1 The following investigations were carried out on the products:

- calculations and review of the results of the load-deflection tests to establish structural performance
- practicability of installation and durability.

15.2 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 1995-1-1 : 2004 + A2 : 2014 *Eurocode 5 — Design of timber structures — General — Common rules and rules for buildings*

NA to BS EN 1995-1-1 : 2004 + A1 : 2008 *UK National Annex to Eurocode 5 — Design of timber structures — General — Common rules and rules for buildings*

BS EN 1995-1-2 : 2004 *Eurocode 5 — Design of timber structures — General — Structural fire design*

NA to BS EN 1995-1-2 : 2004 *UK National Annex to Eurocode 5 — Design of timber structures — General — Structural fire design*

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 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 — Part 1 — Definitions 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*

16 Conditions

16.1 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.

16.2 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.

16.3 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.

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

16.5 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.

16.6 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.