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Agrément Certificate

15/5227

Product Sheet 1

SWISSPEARL CLADDING PANELS

SWISSPEARL LARGO CARAT, REFLEX, XPRESSIV, INCORA, AVERA, GRAVIAL AND VINTAGO PANELS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Swisspearl⁽²⁾ Largo Carat, Reflex, Xpressiv, Incora, Avera, Gravial and Vintago Panels, a range of cement composite panels for use as exterior wall façade decorative panels in timber- and steel-frame buildings.

(1) Hereinafter referred to as 'Certificate'.

(2) Swisspearl is a registered trademark of Eternit (Schweiz) AG.

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

Strength and stability — a system constructed using the products can be designed to resist the wind actions normally encountered in the UK (see section 6).

Performance in relation to fire — the panels may have either a Class A2-s1, d0 or a Class C-s2, d0 classification in accordance with BS EN 13501-1 : 2010, depending on the supporting construction (see section 7).

Weathertightness — the products, when installed, are not weathertight and must be used in conjunction with a suitable water vapour permeable membrane (see section 8).

Durability — under normal service conditions, the products will have a service life in excess of 30 years (see section 10).

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 Third issue: 13 June 2022

Originally certificated on 26 June 2015

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, Swisspearl Largo Carat, Reflex, Xpressiv, Incora, Avera, Gravial and Vintago Panels, 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(1)	Loading
Comment:		The products can contribute to satisfying this Requirement. See section 6.4 of this Certificate.
Requirement:	B3(4)	Internal fire spread (structure)
Comment:		The products may contribute to satisfying this Requirement. See section 7.2 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The products may be restricted by this Requirement. See sections 7.1 to 7.5 and 7.9 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products do not provide a watertight facing but will resist the passage of rainwater to the supporting structure. See section 8.1 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The products are acceptable. See sections 10.1 and 10.2 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The products may be restricted by this Regulation. See sections 7.1, 7.5 and 7.9 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The products can contribute to a construction satisfying this Regulation. See sections 9, 10.1 and 10.2 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 can contribute to satisfying this Standard with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See section 6.4 of this Certificate.
Standard:	2.4	Cavities
Comment:		The products can contribute to satisfying these Standards with reference to clauses 2.4.2 ⁽¹⁾⁽²⁾ and 2.4.4 ⁽¹⁾ . See section 7.2 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The products may be restricted by these Standards with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ , 2.6.6 ⁽²⁾ and 2.7.1 ⁽¹⁾⁽²⁾ . See sections 7.1, 7.3, 7.6, 7.7 and 7.9 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products can contribute to satisfying the Standard, with reference to clause 3.10.5 ⁽¹⁾⁽²⁾ . See section 8.1 of this Certificate.

Standard: Comment:	7.1(a)	Statement of sustainability 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.
Regulation: Comment:	12	Building standards applicable to conversions All comments given for 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: Comment:	23(a)(i) (iii)(b)(i)	Fitness of materials and workmanship The products are acceptable. See sections 10.1 and 10.2 and the <i>Installation</i> part of this Certificate.
Regulation: Comment:	28(b)	Resistance to moisture and weather The products do not provide a watertight facing but will resist the passage of rainwater to the supporting structure. See section 8.1 of this Certificate.
Regulation: Comment:	30	Stability The products can contribute to satisfying this Regulation. See section 6.4 of this Certificate.
Regulation: Comment:	35(4)	Internal fire spread - Structure The products can contribute to satisfying this Regulation. See section 7.2 of this Certificate.
Regulation: Comment:	36(a)	External fire spread The products may be restricted by this Regulation. See sections 7.1 to 7.4, 7.8 and 7.9 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: 1 *Description* (1.3), 3 *Delivery and site handling* (3.1) and 14 *Precautions* of this Certificate.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, Swisspearl Largo Carat, Reflex, Xpressiv, Incora, Avera, Gravial and Vintago Panels, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards, Part 6 Superstructure (excluding roofs)* and *6.9 Curtain walling and cladding*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard EN 12467 : 2012.

1 Description

1.1 Swisspearl Largo Carat, Reflex, Xpressiv, Incora, Avera, Gravial and Vintago Panels are integrally coloured, fibre-reinforced cement panels finished with coatings on the top face. The panels satisfy the requirements of Category A, Class 4, to EN 12467 : 2012⁽¹⁾ for use as exterior non-load bearing, decorative panels for wall claddings in timber- and steel-frame constructions.

(1) Category A – sheets intended for applications where they may be subjected to heat, high moisture and severe frost. Class 4 – minimum Modulus of Rupture (MOR) in the wet condition is 18 MPa.

1.2 Swisspearl Carat, Incora, Gravial and Vintago panels are integrally coloured with a translucent top coat, Reflex and Vintago Reflex panels are integrally coloured with an iridescent surface finishing, and Gravial, Xpressiv and Avera panels have a translucent top coat. The panels are available in a range of colours. A factory-applied anti-graffiti coating is also available, but the effectiveness of this coating has not been assessed and this aspect of performance is outside of the scope of this Certificate.

1.3 The products have the following nominal characteristics:

Thickness (mm)	8.0 and 12.0
Width (mm)	1220 and 1250 (maximum)
Length (mm)	3050
Weight (kg·m ⁻²)	15.7 and 24.6
Density (kg·m ⁻³)	1750
Minimum bending strength (N·mm ⁻²)	18
Water permeability	Pass
Dimensional variations	Pass
Durability against warm water	Pass
Durability against soak/dry	Pass
Durability against freeze/thaw	Pass
Durability against heat/rain	Pass.

1.4 Ancillary components for use with the products are:

- SFS AP15 blind rivet fixings — 4.0 x 18 mm with 15 mm diameter head for fixing the panels to steel and aluminium support framework
- TW-S-D12 screw fixings — 4.8 x 38 mm with 12 mm diameter head for fixing the panels to timber support framework
- Luko cut edge impregnation — an aqueous acrylic dispersion for use at edges.

1.5 Accessories for use with the products but outside the scope of the Certificate are:

- EPDM backing strips — ethylene-polypropylene-diene monomer rubber strips in 60, 120 or 150 mm widths used between timber support battens and the panels
- ventilation profiles for use in ventilating cavities
- horizontal I-flashing for joint flashing.

2 Manufacture

2.1 The products are manufactured from cellulose and polymeric fibres, Portland cement, pigments and other constituents using the Hatschek process. The uncoated panels are cured for 21 days, then dried and coated on the front and reverse with an acrylic resin-based coating. The coating applied on the front can be translucent or opaque, depending on the type of panel required.

2.3 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.

2.4 The management systems of the manufacturers have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by TÜV SÜD Management Service GmbH (Certificates 12 100 40262/07 TMS and 12 100 40262/04 TMS).

3 Delivery and site handling

3.1 The panels are delivered to site shrink-wrapped on pallets, 30 panels per pallet for the 8 mm thickness and 20 panels per pallet for the 12 mm thickness. The total weight per pallet of both sizes is 1800 kg (including the pallet). Packaging bears the panel identification, production date, manufacturer and EN standard number. The BBA logo and the number of this Certificate are printed on the reverse of the panels.

3.2 The panels should be lifted from the stack from both panel ends. To prevent surface damage during handling, sheets should be lifted clear of the surface of the stack and not dragged across it.

3.3 The panels must be stored flat in stacks (maximum 500 mm high) on firm, level ground, in a sheltered position and away from dampness and direct sunlight.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Swisspearl Largo Carat, Reflex, Xpressiv, Incora, Avera, Gravial and Vintago Panels.

Design Considerations

4 General

4.1 Swisspearl Largo Carat, Reflex, Xpressiv, Incora, Avera, Gravial and Vintago Panels are satisfactory for use as exterior, non-loadbearing decorative cladding panels on timber- and steel-frame walls. The panels are supported by vertical timber battens or metal rail sub-frame fixed to the substrate wall at maximum 600 mm centres. It is essential that walls are designed and constructed incorporating the normal precautions to prevent moisture penetration.

4.2 The substrate wall and the sub-frame to which the panels are fixed must be structurally sound and satisfy the requirements of the relevant national Building Regulations and Standards.

4.3 For new substrate walls, the designer must ensure that:

- timber-frame walls are designed and constructed in accordance with the relevant sections of BS EN 1995-1-1 : 2004 and its UK National Annex, and preservative-treated where necessary, in accordance with BS 8417 : 2011. Guidance on recommended wood preservation is also given in *NHBC Standards 2022, Part 3 General, Chapter 3.3 Timber preservation (natural solid timber)*
- steel-frame walls are designed and constructed in accordance with the relevant sections of BS EN 1993-1-1 : 2005 and its UK National Annex. The installation of vertical timber battens or metal support rails must be aligned and fixed directly through to the vertical structural steel framework.

4.4 Ventilation and drainage must be provided behind the cladding. All ventilation openings around the periphery of a cladding system incorporating the panels should be suitably protected with mesh to prevent the ingress of birds, vermin and insects. The horizontal and vertical joints between panels are open with a minimum spacing of 10 mm.

4.5 Care should be taken to ensure that sufficient time is allowed for complete fixing or drying of the timber preservative before the panels are fixed.

5 Practicability of installation

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

6 Strength and stability

Wind loading

6.1 Design wind actions should be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. Due consideration should be given to the higher pressure coefficients applicable to corners of the building as recommended in this Standard. In accordance with BS EN 1990 : 2002, it is recommended that a partial load factor applied to characteristic wind actions of 1.5 is used to determine the design wind load to be resisted by the cladding system.

6.2 The supporting wall must be able to take the full wind loads and any racking loads on its own. No contribution from the cladding system may be assumed in this respect.

6.3 The designer should ensure that:

- the design of the vertical sub-frame and its fixings is in accordance with the relevant codes and Standards, such as to limit mid-span deflections to span/200 and cantilever deflections to span/150
- the panels are fixed to the vertical support sub-frame using the specified fixings (see section 1.4)
- the specified panel fixings have adequate tensile and pull-out strength to resist the applied actions
- fixing of the vertical support subframe to the substrate wall has adequate tensile pull-out strength and corrosion resistance (not covered by this Certificate). An appropriate number of site-specific pull-out tests must be conducted on the substrate wall to determine the minimum pull-out resistance to failure of the fixings. The characteristic pull-out resistance should be determined in accordance with the guidance given in EOTA TR055 : 2016, using 50% of the mean value of the five smallest measured values at the ultimate load.

6.4 The design pull-through resistance of the panels using the specified fixings is given in Table 1.



Table 1 design pull through resistance ($kN\cdot m^{-2}$)

Fixing type	Fixing spacing (mm)		
	480	530	600
Screw (4.8 x 38 mm with 12 mm diameter head)	1.3	1.1	0.9
Rivet (4.0 x 18 mm with 15 mm diameter head)	1.3	1.1	0.9

6.5 Higher allowable wind pressures can be achieved by reducing the spacing between support rails.

Impact resistance

6.6 The panels have adequate resistance to the hard and soft body impacts likely to occur in practice. They are suitable for use in areas where there is little possibility of impact or abrasion damage, ie at low levels in areas of restricted access or at higher levels in public areas.

7 Performance in relation to fire



7.1 The panels have a reaction to fire classification of either A2-s1, d0 or C-s2, d0 in accordance with BS EN 13501-1 : 2010 when used on a steel or aluminium and a wood subframe respectively⁽¹⁾. The classifications are valid when installed backed with insulation material of minimum thickness 50 mm and classified as A2-s1, d0 or A1. The width of the joints must not exceed 20 mm.

(1) Report reference 231000524-4, conducted by MPA NRW. Report is available from the Certificate holder upon request.

7.2 The Certificate holder has not declared the reaction to fire classification of the reverse side of the panel (facing into the cavity) in accordance with BS EN 13501-1 : 2018.

7.3 The system defined above as achieving an A2,s1, d0 classification is not subject to any restriction on building height or proximity to boundaries.



7.4 In England, Wales and Northern Ireland, the system defined above as achieving a C-s2, d0 classification may be used on a building 1 m or more from a boundary and less than 18 m in height.



7.5 In England and Wales, where timber battens are used as a support system, the panels should not be used on buildings that have a storey at least 18 m above ground level and which contain one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.



7.6 In Scotland, the system defined above as achieving a C-s2, d0 classification, and panels when used with timber battens as a support system, may be used on buildings more than 1 m from a boundary and on houses 1 m or less from a boundary. With minor exceptions, the panels, when using a timber batten support system should be included in calculations of unprotected area, except on houses where the external wall behind has the appropriate fire resistance.

7.7 In Scotland, the system defined above as achieving a C-s2, d0 classification, and panels when used with timber battens as a support system, should not be used on buildings with a storey more than 11 m above the ground or on any entertainment or assembly building with a total storey area more than 500 m² or on any hospital or residential care building with a total storey area more than 200 m².



7.8 In Northern Ireland, where timber battens are used as a support, the panels should not be used on any building with a storey which is 18 m or more above ground level.



7.9 The classifications and permissible areas of use of other systems including the products must be determined in accordance with the documents supporting the national Building Regulations.

7.10 Designers should refer to the relevant national Building Regulation guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall wall construction (for example, timber battens or thermal insulation), but are outside the scope of this Certificate.

8 Weathertightness



8.1 The panels are not airtight, watertight or water-vapour tight, but will contribute to resisting the passage of rain water to the supporting structure. They must be backed with a breather membrane acting as a vapour permeable water barrier, incorporated behind the cladding under supporting battens. The breather membrane must satisfy the requirements of BS 5250 : 2021 and have a vapour resistance of less than $0.6 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}$.

8.2 The cavity gap behind the cladding should have a minimum width of 50 mm and must be drained and ventilated⁽¹⁾. The cavity drainage and ventilation gap should provide openings with a minimum ventilation area of 500 mm^2 per metre run along the base and head of any rainscreen wall.

(1) Guidance on recommended cavity widths is given in *NHBC Standards 2022*, Chapters 6.2, 6.9 and 6.10.18.

8.3 Provision must always be made to allow water that has penetrated behind the cladding to drain away.

9 Maintenance



9.1 Annual maintenance inspections of the panel surface, ventilation gaps, joints and fixings are recommended to ensure they are clear and in good state. The inspection should also detect the need for repair of damage that will prolong the life of the cladding.

9.2 For normal soiling, the surface of the panels can be cleaned with cold or lukewarm water mixed with a water-based detergent applied with a suitable cleaning pad or sponge. For more difficult soiling, the Certificate holder's advice should be sought.

10 Durability



10.1 The durability and service life of the panels will depend upon the building location, façade aspect, immediate environment and intended use of the building.

10.2 Under normal service conditions, and provided regular maintenance is carried out as described in section 9 and in accordance with the Certificate holder's instructions, the panels will have a service life in excess of 30 years.

10.3 There may be some fading of colour over long exposure periods, but such fading will be consistent across any one elevation.

10.4 The coating on the panels is not resistant to continual abrasion (see section 6.6).

Installation

11 Procedure

11.1 The panels should be installed in accordance with the Certificate holder's instructions and this Certificate on timber and metal sub-frames, and at the spacings shown in Table 2.

Table 2 Distances to panel edges and joint widths⁽¹⁾ (mm)

Dimension	Spacing (mm)	
	Horizontal	Vertical
Distance to panel edge (min)	30	60
Distance to panel edge (max)	100	100
Panel joints for metal sub-frame	6-8	5-8
Panel joints for timber sub-frame	6-8	6-8

(1) Joints should have a minimum 10 mm opening.

11.2 The panels may be fixed using screws to vertical timber supports securely fixed to the substrate and levelled to give a flat fixing surface. Panels may also be fixed directly to metal supports using rivets into the metal rails.

11.3 Structural expansion joints must be applied to the sub-framing and cladding in the identical position and to the same extent in accordance with the building design.

11.4 The panels are fixed at two points in accordance with the Certificate holder's instructions, using either SFS AP15 blind rivets in pre-drilled 9.5 mm diameter holes or TW-S-D12-4.8 x 38 screws with 5.5 mm pre-drilled holes.

11.5 Reflex panels have an arrow on the reverse indicating the direction of production, which always runs with the longitudinal edge of the panel. All arrows must point in the same direction when installing these panels, to achieve consistency of the colour of the installed panels.

11.6 Horizontal joint flashing should be used to prevent water from dripping into the ventilation cavity when using timber battens. All battens at vertical joints and intermediate battens must be fully covered by EPDM backing strips which are stapled to the battens. The strips should be used as a single piece top to bottom or lapped with a 40 mm overlap.

12 Precautions

When using power saws and sanders, dust extraction equipment should be used to control dust levels. The Certificate holder's Safety Data Sheet must be consulted for further details.

13 Cutting

13.1 All panels leave the factory sealed on all six faces. If panels are cut on site, each cut must be treated by hand-application of Luko cut edge impregnation.

13.2 The Certificate holder provides an optimising computer programme to minimise offcut waste. When cutting is required, the panels are cut using a diamond-tipped blade or carbide metal blade with staggered teeth. Any dust generated should be removed immediately from the panel surfaces (see section 14).

14 Repair

Damaged panels must be replaced as soon as possible, following the Certificate holder's instructions.

Technical Investigations

15 Tests

15.1 Tests were carried out and the results assessed to determine:

- water absorption
- water vapour impermeability
- alkali immersion and adhesion
- resistance to abrasion
- resistance to staining
- resistance to algal growth.

15.2 An assessment was made of existing data in relation to:

- dimensions
- density
- bending strength
- water impermeability
- warm water
- soak/dry
- freeze/thaw
- heat/rain.

16 Investigations

16.1 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.

16.2 An assessment was made of test data relating to:

- fire classification
- accelerated artificial weathering and colour stability
- resistance to hard/soft body impacts
- resistance to wind loads
- pull-through resistance of screws and rivets.

16.3 A postal user survey was conducted to assess the products' performance in use.

Bibliography

BS 8417 : 2011+ A1 : 2014 *Preservation of wood — Code of practice*

BS EN 12467 : 2012 + A2: 2018 *Fibre-cement flat sheets — Product specification and test methods*

BS EN 13501-1 : 2010 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

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 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 ISO 9001 : 2015 *Quality management systems — Requirements*

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 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.

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.