

## MAGNESIUM OXYSULFATE BOARDS

### MAGPLY RAINSCREEN CLADDING — RENDER FINISH

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Magply Rainscreen Cladding — Render Finish, comprising the K Rend Silicone TC15 Render System 2, applied on Magply magnesium oxysulfate board as a render carrier board, for use as an exterior wall façade panel system in timber-frame and light gauge steel-frame residential and commercial buildings. Its use may be restricted in terms of height and proximity to a boundary.

(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

**Strength and stability** — the system can resist wind actions normally encountered in the UK (see section 6).

**Behaviour in relation to fire** — the system has a B, s1, d0 reaction to fire classification in accordance with BS EN 13501-1 : 2018 and its use is restricted in some cases (see section 7).

**Weathertightness** — the system can resist the passage of moisture from weather (see section 9).

**Durability** — under normal service conditions, the system will have a service life in excess of 30 years (see section 14).



The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 10 May 2022



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)*

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*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, Magply Rainscreen Cladding — Render Finish, 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(1)</b>	<b>Loading</b>
Comment:		The system is acceptable as set out in sections 6.6 and 6.8 of this Certificate.
<b>Requirement:</b>	<b>B3(4)</b>	<b>Internal fire spread – Structure</b>
Comment:		The system can contribute to satisfying this Requirement. See section 7.6 of this Certificate.
<b>Requirement:</b>	<b>B4(1)</b>	<b>External fire spread</b>
Comment:		The system may be restricted by this Requirement. See sections 7.1 and 7.2 of this Certificate.
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:		The system can contribute to satisfying this Requirement. See section 9.1 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The system is acceptable. See section 11.1 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>7(2)</b>	<b>Materials and workmanship</b>
Comment:		The system is restricted by this Requirement. See sections 7.1 and 7.3 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 system can contribute to a construction satisfying this Regulation. See sections 10 and 11.1 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 system is acceptable, with reference to clauses 1.1.1 <sup>(1)(2)</sup> , 1.1.2 <sup>(1)(2)</sup> and 1.1.3 <sup>(1)(2)</sup> of this Standard. See sections 6.6 and 6.8 of this Certificate.
Standard:	2.4	Cavities
Comment:		The system can contribute to satisfying this Standard, with reference to clause 2.4.2 <sup>(1)(2)</sup> . See section 7.6 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The system is restricted by this Standard, with reference to clauses 2.6.4 <sup>(1)(2)</sup> , 2.6.5 <sup>(1)</sup> and 2.6.6 <sup>(2)</sup> . See sections 7.1 and 7.5 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The system is restricted by this Standard, with reference to clause 2.7.1 <sup>(1)(2)</sup> . See sections 7.1 and 7.5 of this Certificate.

<b>Standard:</b>	<b>3.10</b>	<b>Precipitation</b>
<b>Comment:</b>		The system can contribute to satisfying this Standard, with reference to clauses 3.10.1 <sup>(1)(2)</sup> , 3.10.2 <sup>(1)(2)</sup> and 3.10.5 <sup>(1)(2)</sup> . See section 9.1 of this Certificate.
<b>Standard:</b>	<b>7.1(a)</b>	<b>Statement of sustainability</b>
<b>Comment:</b>		The system 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>
<b>Comment:</b>		Comments in relation to the system 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>
<b>Comment:</b>	<b>(iii)(b)(i)</b>	This system is acceptable. See section 11.1 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture and weather</b>
<b>Comment:</b>		The system can contribute to satisfying this Regulation. See section 9.1 of this Certificate.
<b>Regulation:</b>	<b>30</b>	<b>Stability</b>
<b>Comment:</b>		The system is acceptable as set out in sections 6.6 and 6.8 of this Certificate.
<b>Regulation:</b>	<b>35(4)</b>	<b>Internal fire spread - Structure</b>
<b>Comment:</b>		The system can contribute to satisfying this Regulation. See section 7.6 of this Certificate.
<b>Regulation:</b>	<b>36(a)</b>	<b>External fire spread</b>
<b>Comment:</b>		The system may be restricted by this Regulation. See sections 7.1, 7.2 and 7.4 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.

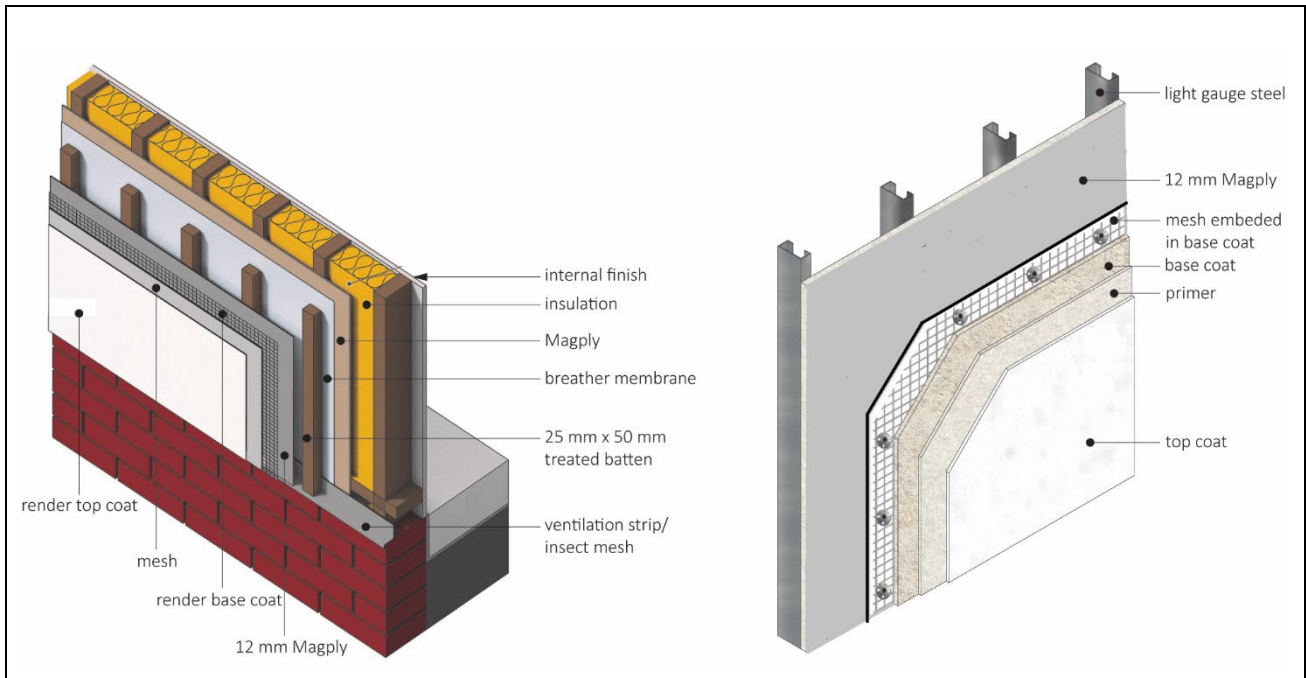
See sections: 1 *Description* (1.2), 3 *Delivery and site handling* (3.6 to 3.8) and 14 *Procedure* (18.8) of this Certificate.

## Technical Specification

### 1 Description

1.1 Magply Rainscreen Cladding — Render Finish is an exterior wall façade panel system comprising Magply magnesium oxysulfate board as a render carrier board finished with the K Rend Silicone TC15 Render System 2 (see Figure 1).

Figure 1 Typical details



## 1.2 The system comprises:

- Magply magnesium oxysulfate board — a lightweight render carrier board manufactured with magnesium oxide, magnesium sulfate, wood chip, non-woven fabric and fibre glass (fabric) mesh, which satisfies the requirements of Category B, Class 2 boards to BS EN 12467 : 2012. The board has the nominal characteristics given in Table 1
- The K Rend Silicone TC15 Render System 2 (as covered by BBA Certificate 97/3428, Product Sheet 7) comprising:
  - K Rend Silicone TC15 Render — a synthetic resin topcoat render incorporating a silicone resin emulsion and acrylic dispersant to BS EN 15824 : 2017. The product is available in 20 standard colours
  - K Rend TC Primer — a bonding coat (to BS EN 998-1 : 2016) available in a range of colours to match K Rend Silicone TC15 render
  - K Rend HP12 Base — a polymer-modified cementitious spray- or hand-applied base render used as a primary coat over cement particle boards manufactured in accordance with BS EN 634-2 : 2007 or BS EN 12467 : 2012
  - K Rend Alkali Resistant Mesh — a 1.1 mm thick polypropylene reinforcing mesh with an opening size of 4.0 x 4.3 mm, available in rolls 1 m wide and 53 m in length, for embedment between coats of HP12 Base.
- K Rend Silicone TC15 Render, applied at a thickness of 1.5 mm, has a weight per unit area of  $2.5 \text{ kg}\cdot\text{m}^{-2}$ . K Rend HP12 Base, applied at a thickness of 6 mm, has a weight per unit area of  $11 \text{ kg}\cdot\text{m}^{-2}$ .

**Table 1 Nominal characteristics**

Characteristic (unit)	Value
Length (mm)	2400
Width (mm)	1200
Thickness (mm)	12
Weight per board (kg)	38
Weight (kg·m <sup>2</sup> )	13.19
Colour	White
Edge finish	Square
Weather resistance	Category B <sup>(1)</sup>
Mechanical resistance	Class 2 <sup>(2)</sup>
Dimensional tolerance	Level 1 <sup>(3)</sup>
Edge finish	Square
Appearance <sup>(4)</sup>	flat sheet
Vapour resistance	0.31 MNS·g

(1) Category B — sheets intended for applications where they may be subjected to heat, high moisture and occasional frost, eg where they are either protected from or not subjected to severe weathering conditions.

(2) Class 2 — minimum Modulus of Rupture (MOR) in the wet condition is equal to 7.55 MPa.

(3) Squared boards satisfy the requirements of Tolerance Level I in accordance with BS EN 12467 : 2012.

(4) The board has smooth and rough surface.

### 1.3 Fixings for use with the system are:

- board fixings over steel or timber frame — 5.0 x 50 x 9 mm head diameter, A2 stainless steel Power-fast screws (fischer) to BS EN 3506-1 : 2020, at maximum 300 mm centres.

### 1.4 Ancillary components for use with the system, but outside scope of this Certificate, include:

- timber- and steel-frame substrate walls
- Magply board support timber battens — 25 mm x 50 mm preservative treated kiln-dried (grade C16)
- Magply board support steel rails – 100 mm x 50 mm x 1.2 mm x 4.0 m SFS C Stud
- Vapour control layer/breather membrane — used in conjunction with timber sheathing
- fixings connecting the sub-frame to the substrate wall
- insulation within the cavity (specified on a project basis)
- protective cavity mesh or ventilation mesh
- render beads and expansion beads
- cavity barriers.

## 2 Manufacture

2.1 Magply magnesium oxysulfate boards are manufactured with magnesium oxide, magnesium sulfate, wood chip, non-woven fabric and glass fibre (fabric) mesh.

2.2 The K Rend Silicone TC15 Render System 2 components are manufactured in a batch-blending process. K Rend Silicone TC15 Render, and K Rend TC Primer are tinted to the appropriate colour (if required) using a computer-controlled tinting machine.

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.

### 3 Delivery and site handling

3.1 The boards are delivered to site on wrapped pallets, with the edges and corners protected. Each pallet bears a label incorporating the product name, thickness, width, length, batch number and number of boards per pallet.

3.2 The boards must be stored horizontally in a ventilated and dry environment, on a flat level surface, either on the pallet used for delivery or supports with 800 mm centres. The boards must be protected from contamination and weathering and must not be kept upright or on their edge for long periods of time. The Certificate holder's instructions on site handling and storage must be followed. Precautions must be taken to ensure the boards are not damaged before, during and after installation.

3.3 The boards should be carried vertically to prevent stress and/or damage and should always be lifted by at least two people and not dragged across each other to prevent unnecessary scratching or damage. Extra precaution should be taken to protect the visible front edge and corners.

3.4 The render materials should be stored in a cool, dry place, off the ground, and protected from moisture, frost and direct sunlight.

3.5 Each bag of K Rend HP12 Base and each tub of K Rend TC Primer and of K Rend Silicone TC15 Render bears the product and Certificate holder's name, batch number, date of production and the BBA logo incorporating the number of this Certificate.

3.6 K Rend HP12 Base is delivered in sealed 25 kg bags on pallets. K Rend TC Primer is delivered in 15 kg tubs and K Rend Silicone TC15 Render in 25 kg tubs on pallets.

3.7 The use of personal protective equipment (PPE) is strongly recommended whenever required.

3.8 When working in enclosed areas, precautions should be taken to ensure dust levels are controlled in accordance with the current issue of EH40/2005 and the measures defined in Health and Safety Executive Guidance Note EH44 should be followed.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Magply Rainscreen Cladding — Render Finish.

## Design Considerations

### 4 Use

4.1 The Magply Rainscreen Cladding — Render Finish is satisfactory for use as a back ventilated and drained wall cladding on exterior walls of timber- and steel-frame residential and commercial buildings above the damp-proof course (dpc) level.

4.2 It is important for designers, planners, contractors and/or installers to ensure that the installation of the system is in accordance with the Certificate holder's instructions and the information given in this Certificate. All design aspects should be checked by a suitably qualified and experienced individual in accordance with the requirements of the relevant Building Regulations and Standards. The design should include:

- a minimum 25 mm ventilated and drained cavity system incorporating an insect guard to all ventilation openings
- effective detailing around window openings, including appropriate flashings, to ensure that wind-driven rain is excluded from hidden members in the surround and from the cavity
- an effective vapour control layer/breather membrane on the outside in accordance with BS 5250 : 2021, to ensure the frame structure is protected.

4.3 The application of the K Rend Silicone TC15 Render System 2 must comply with the guidelines – given in BS EN 13914 -1 : 2016.

4.4 The substrate wall and the sub-frame to which the system is to be fixed must be structurally sound, and designed and constructed in accordance with the requirements of the relevant national Building Regulations and Standards:

- timber-frame walls must be designed and constructed in accordance with the relevant sections of BS EN 1995-1-1 : 2004 and its UK National Annex, PD 6693-1 : 2019, and preservative-treated where necessary, in accordance with BS EN 351-1 : 2007
- steel-frame walls must be designed and constructed in accordance with the relevant sections of BS EN 1993-1-1 : 2005 and BS EN 1993-1-3 : 2006, and their UK National Annex.

4.5 The substrate wall must be able to take the full wind actions normally experienced in the UK and the general actions, and be capable of sustaining the weight of the system. The contribution of the system to the stability of the substrate wall and subframe is assumed to be negligible. The adequacy of the substrate wall is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual.

4.6 The subframe should be able to transmit the loads (self-weight of the system and wind actions) to the substrate wall. The adequacy of the subframe is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual for each project in function of the specific situation.

4.7 Where expansion joints occur in the timber- or steel-frame, the sheathing board must not be installed across these joints.

4.8 It is essential that the system is installed and maintained in accordance with the conditions set out in this Certificate. The fixing of rainwater goods, satellite dishes, clothes lines, hanging baskets and similar items is outside the scope of this Certificate.

## 5 Practicability of installation

The system is designed to be installed by installers who have been trained and approved by the Certificate holder.

## 6 Strength and stability

### Wind loading

6.1 A suitably qualified and experienced individual must check the design and installation of the system.

6.2 Design wind actions should be calculated 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 and its UK National Annex, it is recommended that a partial load factor of 1.5 is applied to determine the design wind load to be resisted by the system.

6.3 The contribution of the system and finishes on the stability of the substrate is assumed to be negligible. The substrate wall, without the system, must be able to take the full wind actions and racking loads and be capable of sustaining the weight of the system. The adequacy of the substrate is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual.

6.4 The designer must ensure that:

- the fixing of the support rail/timber batten to the substrate wall has adequate pull-out resistance and corrosion resistance for the calculated loads (outside the scope of 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 BS EN 1990 : 2002
- the design of the sub-frame and its fixings is in accordance with the relevant codes and Standards, and is such as to limit mid-span deflections to span/200 and cantilever deflections to span/150
- the vertical timber battens or aluminium rails are no more than 600 mm centres apart
- the timber/steel substrate wall frame studs are at no more than 600 mm centres



- the boards are fixed to the support sub-frame using the specified fixings (see section 1.3)
- the specified board fixings have adequate tensile and pull-out strength to resist the applied actions.

6.5 The system must be designed to adequately resist the wind actions likely to be experienced for that location.



6.6 The characteristic pull-through resistance values of the 12 mm board, determined by tests in accordance with EAD 090062-00-0404 : 2018 for the stainless steel screws as described in section 1.3, are given in Table 2.

**Table 2 characteristic pull-through resistance (kN)<sup>(1)(2)</sup>**

Position	Characteristic pull-through resistance (kN)
Centre	0.801
Corner	0.907

(1) In accordance with BS EN 1990 : 2002 for design value calculations, a partial material factor of 1.3 must be applied to the characteristic values.

(2) For edge fixings it must be ensured that their characteristic pull through resistance when tested in accordance with EAD 090062-00-0404 : 2018, and with an edge distance of 15 mm, achieve a value that is no less than 0.25 kN.

6.7 The board’s flexural properties given in Table 1, and pull-through values given in Table 2, can be used to calculate wind load resistance. See also section 6.4.

### Impact resistance



6.8 The system is suitable for use in Categories I to IV, as defined in Table 3 of this Certificate.

**Table 3 Impact Use Categories (reproduced from EAD 090062-00-0404 : 2018, Table G.2)**

Category	Use
I	A zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use, eg façade bases in buildings sited in public locations, such as squares, schoolyards or parks. Cleaning gondolas may be used on the façade
II	A zone liable to impacts from thrown or kicked objects, but in public locations where the height of the kit will limit the size of the impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care, eg façade bases in buildings not sited in public locations (such as squares, schoolyards or parks) or upper façade levels in buildings sited in public locations that occasionally can be hit by a thrown object (eg ball, stone, etc). Cleaning gondolas may be used on the façade
III	A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects, eg upper façade levels in buildings (not including base) not sited in public locations, that occasionally can be hit by a thrown object (eg ball, stone, etc). Cleaning gondolas should not be used on the façade
IV	A zone out of reach from ground level, eg high façade levels that cannot be hit by a thrown object. Cleaning gondolas should not be used on the façade

## 7 Behaviour in relation to fire



7.1 The system/components have the reaction to fire classifications in Table 4. This classification may not be achieved by other render colours or other constructions, which should therefore be confirmed in accordance with the requirements of the documents supporting the national Building Regulations and any consequent restrictions imposed by those documents, on a case-by-case basis.



**Table 4 Reaction to fire classification**

Classification	System/components	Construction	Method/report reference
B-s1, d0	12 mm Magply Silicone TC15 Render(white) TC Primer HP12 Basecoat Alkali Resistant mesh	Vertical timber battens (40 x 40 mm) Horizontal timber battens (20 x 40 mm) 12 mm fibre cement board, density $\geq 1309$ kg·m <sup>-3</sup> 50 mm A1-s1, d0 mineral wool, density ~70 kg·m <sup>-3</sup>	BS EN 13501-1 : 2018 BTG 27/05640/06/21 <sup>(1)</sup>
A1	12 mm Magply (reverse surface) facing into the cavity	—	BS EN 13501-1 : 2007 WF 366624 <sup>(1)</sup>

(1) Copies available from the Certificate holder.



7.2 In England, Wales and Northern Ireland, the construction achieving B-s1, d0 in Table 4 may be used on buildings at any height and proximity to a boundary except those described in sections 7.3 to 7.5. For other buildings with a storey more than 18 m above the ground, designers should consider the impact on the risk of fire spread over the wall. See also section 7.7.



7.3 In England and Wales, the system should not be used on buildings that have a storey at least 18 m above ground level and 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.



7.4 In Northern Ireland, the system should not be used with timber battens on buildings which have a storey 18 m or more above the ground.



7.5 In Scotland, the system should not be used with timber battens 1 m or less from a boundary or on buildings which have a storey more than 11 m above the ground. Restrictions also apply on some entertainment, assembly, hospital, and residential care buildings.



7.6 Cavity barriers should be placed in accordance with the documents supporting the national Building Regulations and should not impede drainage and ventilation pathways.

7.7 Designers should refer to the relevant national Building Regulation guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, 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.

7.8 Where a wall incorporating the system is required to achieve a period of fire resistance, it's performance should be confirmed by a suitably qualified and experienced individual or by a test from a suitably accredited laboratory.

## 8 Proximity of flues and appliances

Detailed guidance can be found in the documents supporting the national Building Regulations for the provisions that are applicable when the system is installed in close proximity to certain flue pipes and/or heat-producing appliances.

## 9 Weathertightness



9.1 The render is suitable for use in exposure zones up to and including the severe wind-driven rain index category, as defined in PD 6697 : 2010.

9.2 Walls to which the system is to be applied must be designed and constructed in relation to local exposure conditions to minimise the incidence of rain penetration.

9.3 The render tends to shed water and will considerably reduce the amount of water absorbed by the substrate.

9.6 The ventilation pathway behind the cladding must not be allowed to become blocked and openings should be suitably protected, or baffled, to prevent the ingress of birds, vermin and rain. The performance of these ancillary components is outside of the scope of this Certificate. See also section 7.6.

9.4 Timber stud or metal frame substrate walls must be backed by a breather membrane acting as a vapour-permeable water barrier, incorporated behind the cladding under the supporting battens. See also section 4.2.

9.5 Any water collecting in the cavity due to rain or condensation will be removed by drainage and ventilation. Provision must be made to allow water that has penetrated behind the cladding to drain away.

## 10 Maintenance



Damaged areas must be repaired using the appropriate components and procedures detailed in the Certificate holder's installation instructions and taking into account the relevant recommendations of BS EN 13914-1 : 2016.

## 11 Durability



11.1 Under normal service conditions, the system will have a service life in excess of 30 years. To achieve this, depending on the building's location, degree of exposure and detailing, it may be necessary to repair or replace isolated areas.

11.2 The system may become discoloured with time, the rate depending on the local environment. Appearance can normally be restored by cleaning with water and mild detergent. In industrial atmospheres light colours should be avoided.

11.3 K Rend Silicone TC15 Render topcoat satisfactorily resists the formation of algae.

## Installation

### 12 Site survey and preliminary work

12.1 A pre-installation survey must be carried out by the installer to determine the suitability of the building for installation and any repairs that will be necessary prior to installation of the system. A specification is prepared for each elevation of the building including:

- detailing around windows, doors and at eaves
- any alterations to external plumbing
- areas where flexible sealants will be required
- the positions of fire barriers (where required)
- pull-out strength of the fixings used to secure the boards to the structure.

12.2 The design of each installation must be checked by a suitably qualified and experienced individual (or similarly competent person) and take into account the nature and quality of the substrate, location, supporting structure and fixings.

12.3 It is recommended that external plumbing is removed, and where appropriate on existing buildings alterations are made to underground drainage to accommodate the repositioning on the finished face.

## 13 General

13.1 Full system details of Magply Rainscreen Cladding — Render Finish for each installation are available from the Certificate holder and must be installed in accordance with their specification and this Certificate.

13.2 The support framework and boards must be capable of transmitting its self-weight and wind actions to the structure. Particular care is required around window and door openings to ensure that the structure is capable of sustaining the additional weight of the system.

13.3 Horizontal movement joints in accordance with BS EN 13914-1 : 2016 must be provided at every floor to accommodate vertical shrinkage of up to 6 mm in the timber-frame and to follow movement joints in the substructure. For steel-frame structures, reference to the Structural Engineer's details for deflection at floor level and movement joints in the substructure should be made.

13.4 Vertical movement joints in accordance with BS EN 13914-1 : 2016 should be provided at a maximum of 15 m intervals. The actual spacing and position of the joints will be determined by the shape of the area to be rendered and should coincide with movement joints in the structure and allow for the same degree of movement

13.5 The system should be kept above the dpc level and a minimum of 150 mm above ground level.

### Renderers

13.6 Application of the K Rend Silicone TC15 Render System 2 must be carried out strictly in accordance the Certificate holder's instructions, the relevant recommendations of BS EN 13914-1 : 2016 and this Certificate.

13.7 Application of the render should not be carried out if the temperature of the air or the surface of the wall to be treated is below 5°C or above 35°C. Installation must not take place during rain, strong wind or sunshine. The materials must be protected from rain, frost and direct sunlight whilst curing. Further information may be obtained from the Certificate holder.

13.8 In sunny weather, work should commence on the shady side of the building and be continued round following the sun to prevent the render drying out too rapidly.

13.9 To minimise colour shade variations and to avoid dry line jointing, continuous surfaces should be completed without a break. If breaks cannot be avoided, they should be made where services or architectural features such as drainpipes, reveals or lines of doors and windows will help mask cold joints. Where long, uninterrupted runs are planned, tubs of the material should be checked for batch numbers. Tubs with different batch numbers should be checked for colour consistency.

## 14 Procedure

### Magply magnesium oxysulfate board

14.1 The support timber battens or steel-frame are installed at 600 mm centres to coincide with stud centres to substrate. It is recommended that a strip of polyethylene dpc is fitted to the face of the batten prior to installing the board and above all windows and doors a water deflection bead should be fitted.

14.2 The board should be fitted with the rough side facing outwards (for better render application) in a brick bond style with a 3 to 6 mm gap on all board joints to allow for frame movement and expansion (see also section 4.7), the board should finish 150 mm above ground level ensuring the cavity behind the board is open from top to bottom to allow adequate airflow.

14.3 The board should be fixed with stainless steel screws at 300 mm centres horizontally and vertically, 15 mm in from the board edge and at 150 mm centres around doors, windows and on the perimeter of the board. The corner fixings should be 50 mm in from the edges (see Figure 2). The screws must not be over-tightened.

14.4 The moisture content of the board should be checked and must be below 16% (by mass) and brushed and free of all debris before applying render. PVA based primers cannot be used on the board.

Figure 2 Render install detail

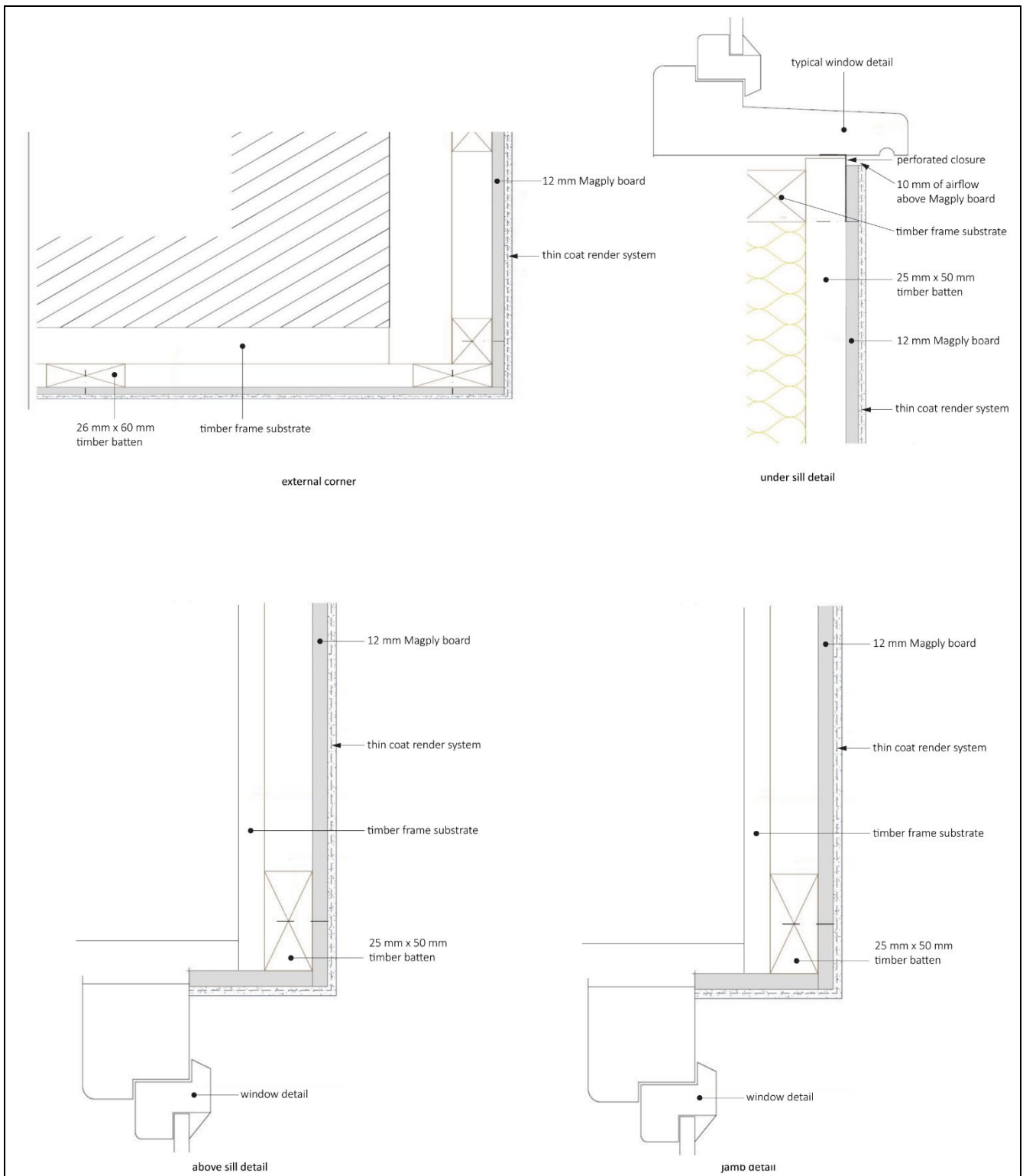
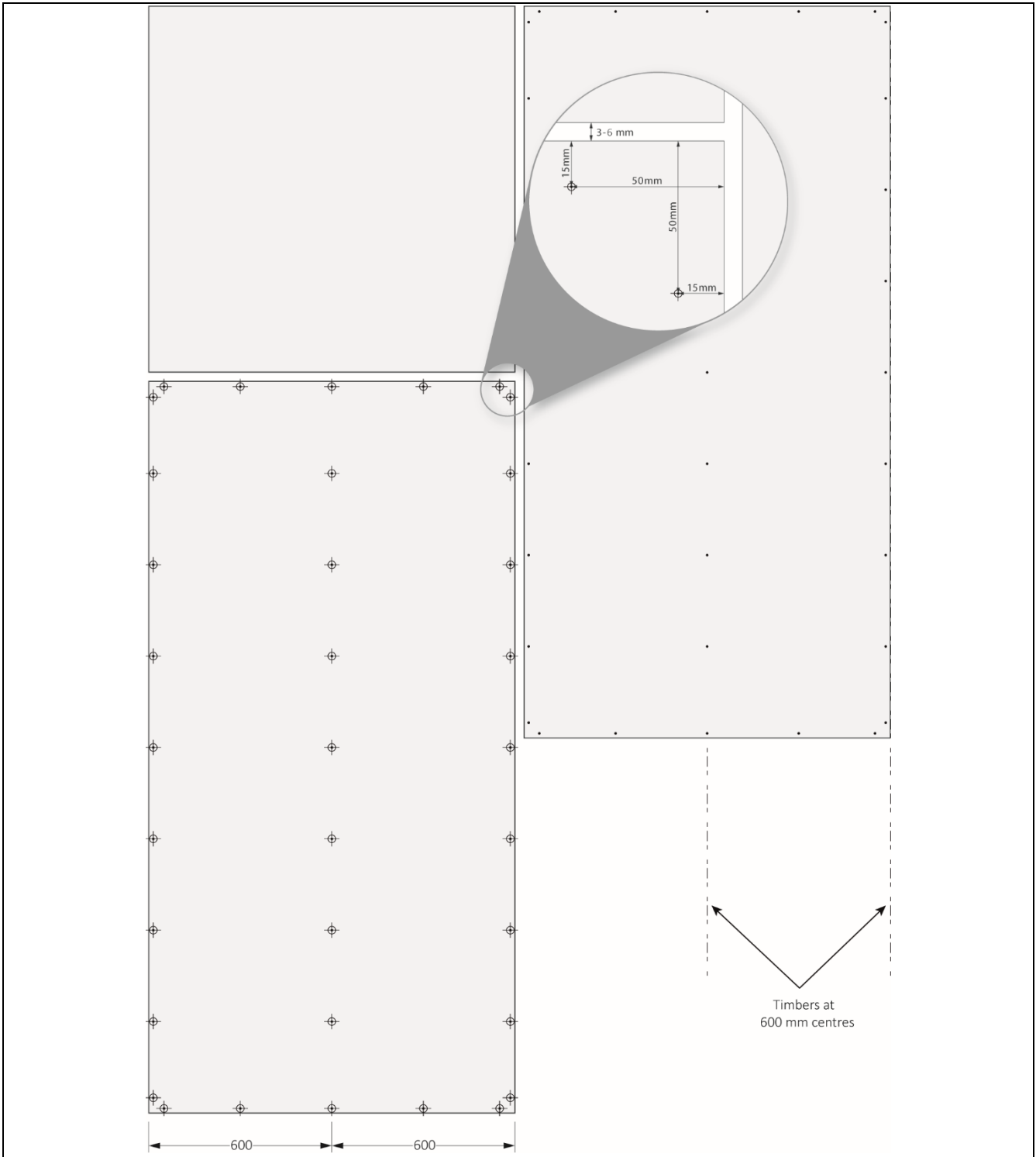


Figure 2 Render install detail (continued)



## Render system finish

### Mixing

14.7 K Rend HP12 Base is added to clean water at a rate of approximately 5 to 6 litres of water per 25 kg of product, and thoroughly mixed using a drill and paddle or free fall mixer for a minimum of 10 minutes until the correct workability is achieved.

14.8 Where excessive concentrations of dust may accumulate, the measures defined in the Health and Safety Executive Publication EH40/05 *Occupational Exposure Limits* (2nd Edition 2011, amended March 2013) for unlisted substances must be adhered to.

14.9 In common with traditional renders, slumping of the material may occur if the mix is too wet, increasing the risk of settlement cracks developing.

14.10 The basecoat will remain workable for approximately 45 minutes at 20°C after mixing. It must not be remixed after it has begun to set.

14.11 K Rend TC Primer and K Rend Silicone TC15 Render must be stirred before use.

### **Application**

14.12 Render beads and expansion beads are fixed in accordance with the render bead supplier's instructions and the Certificate holder's recommendations.

14.13 The boards are fixed to the sub-frame at 600 mm spacings. The K Rend TC Primer and K Rend Silicone TC15 Render finish is applied to the Magply magnesium oxysulfate board in accordance with this Certificate and the Certificate holder's instructions.

14.14 A dpc must be placed between the building's masonry support and its wooden frame and a breather membrane must be fitted between the wooden frame and the boards, making sure window cavities are covered.

14.15 PVC windows with sills incorporated must be used and silicone sealant applied to the frame before setting the window and at the interface between the window and the boards.

14.16 The initial application of K Rend HP12 Base is applied by hawk and trowel onto the boards to a thickness of 3 mm. Alternatively, the basecoat can be spray-applied.

14.17 K Rend Alkali Resistant Mesh is embedded across the entire area of basecoat, overlapping by 100 mm where necessary.

14.18 Before the initial basecoat layer has set, a key is formed by scratching the render surface, which is then left for 2 hours.

14.19 A new batch of K Rend HP12 Base is prepared and applied as before, up to a total thickness of 6 mm.

14.20 The basecoat is lightly wetted with water and smoothed over with a trowel. The surface is then left to cure for a minimum of 14 days before the K Rend TC Primer is applied.

14.21 Once the basecoat has initially set, K Rend TC Primer is applied by roller at  $0.25 \text{ kg}\cdot\text{m}^{-2}$  and left to dry for a minimum of 24 hours.

14.22 Once the primer is dry, K Rend TC15 Silicone Render is float-applied at  $2.5 \text{ kg}\cdot\text{m}^{-2}$  to 1.5 mm thickness, to give an overall thickness of approximately 8 mm.

### **Curing**

14.23 The completed render must be protected from rain, mist or cold (less than 5°C on a falling thermometer) in order to prevent an excessively prolonged drying period.

14.24 The use of polythene sheeting is recommended during curing and should hang clear of the face of the wall. It should be arranged so that it does not form a tunnel through which wind could increase the rate of water evaporation from the surface.

14.25 Care must be taken to protect the render from rapid drying owing to exposure to direct sun or drying wind, to ensure complete hydration of the render.

### **Finishing**

14.26 On completion of the render installation, the surface is checked to ensure an even coverage.

## 15 Repair

Any damage to the render must be repaired immediately in accordance with BS EN 13914-1 : 2016, using the K Rend Silicone TC 15 System 2. Only materials specified by the Certificate holder may be used to repair damage to the system. The advice of the Certificate holder should be sought for a particular installation.

## Technical Investigations

## 16 Tests

Tests were carried out by the BBA, and the results assessed to determine:

- weathertightness
- hygrothermal behaviour
- bond strength
- performance of board in humidity (crying test)
- water absorption (capillarity).

## 17 Investigations

17.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and compositions of the materials used.

17.2 An assessment was made of test reports relating to the reaction to fire classification

17.3 An assessment was made of :

- density
- dimensional variation, straightness of edge and out of squareness
- resistance to freeze/thaw
- resistance to soak/dry cycling
- resistance to heat/rain cycling
- mechanical characteristics- bending strength (MOR).
- water impermeability
- moisture movement
- water vapour permeability.

17.4 An assessment was made of the test data relating to:

- soft and hard body impact
- pull-through resistance
- water absorption
- resistance to organic growth.



## Bibliography

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

### 22 Conditions

22.1 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.

22.2 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.

22.3 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.

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

22.5 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.

22.6 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.