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Agrément Certificate
15/5250
Product Sheet 3

IG MASONRY SUPPORT SYSTEMS

IG BRICK SLIP SOFFIT PANELS

This Agrément Certificate Product Sheet[1] relates to IG Brick Slip Soffit Panels comprising magnesium oxide (MgO) boards with adhesively factory-bonded brick slips, for use in external masonry walls.

(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

Properties in relation to fire — the system components are classified as either A1 or A2, except the adhesive which is classified as B, in accordance with BS EN 13501-1 : 2018, therefore the use of the system is restricted in some cases by the national Building Regulations (see section 7).

Condensation risk — where the systems are used around opening heads the risk of local surface condensation will be minimal (see section 8).

Durability — provided that the system is designed, installed and used in accordance with this Certificate, it will have a service life of at least 50 years when used in the normal climatic conditions found in the UK (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 Second issue: 20 March 2020

Originally certificated on 26 September 2018

Hardy Giesler
Chief Executive Officer

This Certificate was amended on 22 May 2024 as part of a transition of The BBA Agrément Certificate scheme delivered under the BBA's ISO/IEC 17020 accreditation. This Certificate was issued originally under accreditation to ISO/ IEC 17065. Sections marked with the symbol † are not issued under accreditation. Full conversion to the ISO/IEC 17020 format will take place at the next Certificate review. The BBA is a UKAS accredited Inspection Body (No.4345). ***Readers MUST check the validity 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 must not be relied upon.*

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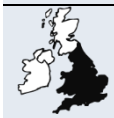
Regulations

In the opinion of the BBA, IG Brick Slip Soffit 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**	**Loading**
Comment:		The system is acceptable for use as set out in section 6 of this Certificate.
Requirement:	**B3(2)**	**Internal fire spread (structure)**
Comment:		The system can contribute to satisfying this Requirement. See sections 7.1 to 7.3 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		In England, the system is restricted by this Requirement in some cases. See sections 7.1 to 7.3 of this Certificate.
Requirement:	**L1(a)(b)**	**Conservation of fuel and power**
Comment:		Heads of openings in external walls incorporating the system can adequately limit heat loss and the risk of condensation. See sections 8.1 and 8.3 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See section 10 and the *Installation* part of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
		The system is restricted by this Regulation. See section 7.3 of this Certificate
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy consumption rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings (applicable to Wales only)**
Comment:		The system can adequately limit heat loss and the risk of condensation. See sections 8.1 and 8.3 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Durability, workmanship and fitness of materials**
Comment:		The system is acceptable. See sections 9.2, 9.3 and 10 and the *Installation* part of this Certificate.
Standard:	2.4	Cavities
Comment:		The system can contribute to satisfying this Requirement. See sections 7.1 and 7.4 of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	1.1(a)(b)	Structure
Comment:		The system is acceptable, with reference to clauses 1.1.1[(1)(2)] and 1.1.2[(1)(2)] of this Standard. See section 6 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The system is 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 and 7.4 of this Certificate.

Standard:	3.15	Condensation
Comment:		The system can satisfy this Standard with reference to clauses 3.15.1[(1)(2)], 3.15.4[(1)(2)] and 3.15.5[(1)(2)]. See sections 8.2 and 8.3 of this Certificate.
Standard:	6.1	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The system can limit heat loss and the risk of condensation, with reference to clauses 6.1.2[(1)], 6.1.6[(1)], 6.2.3[(1)], 6.2.4[(1)], 6.2.5[(2)], 6.2.6[(2)], 6.2.10[(1)] and 6.2.11[(2)] of these Standards. See sections 8.2 and 8.3 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The system can contribute to meeting the relevant Requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
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)(iii)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The system is acceptable. See section 10 ~~a~~nd the *Installation* part of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The system can contribute to satisfying this Regulation. See section 8.3 of this Certificate.
Regulation:	**30**	**Stability**
Comment:		The system is acceptable as set out in section 6 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread – Structure**
Comment:		The system can contribute to satisfying this Requirement. See sections 7.1 and 7.2 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The system is unrestricted under this Regulation. See sections 7.1 and 7.2 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Regulation:	**40**	**Target carbon dioxide emissions rate**
Comment:		The system can limit heat loss and the risk of condensation. See section 8.3 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 section: 3 *Delivery and site handling* (3.3) of this Certificate.

Technical Specification

1 Description

1.1 IG Brick Slip Soffit Panels are prefabricated soffit panels with brick slips adhesively bonded to an MgO board, and secured to the substructure and cross battens faced with 18 mm marine plywood with stainless steel BS-S-4.8 mm x 60 mm fixings at maximum centres in both directions of 400 mm to achieve project design requirements (see Figure 1). The plywood is installed on cross battens fixed to the substructure. The substructure, cross battens, plywood and fixings (used to attach the plywood, cross battens and substructure) are outside the scope of this Certificate.

1.2 The system is available in different bond patterns. An example of these dimensions is available in Figure 1 and Table 1. The MgO board will always be 9 mm thick.

Figure 1 IG Brick Slip Soffit Panels (18 mm marine plywood, cross battens and substructure are outside the scope of this Certificate)

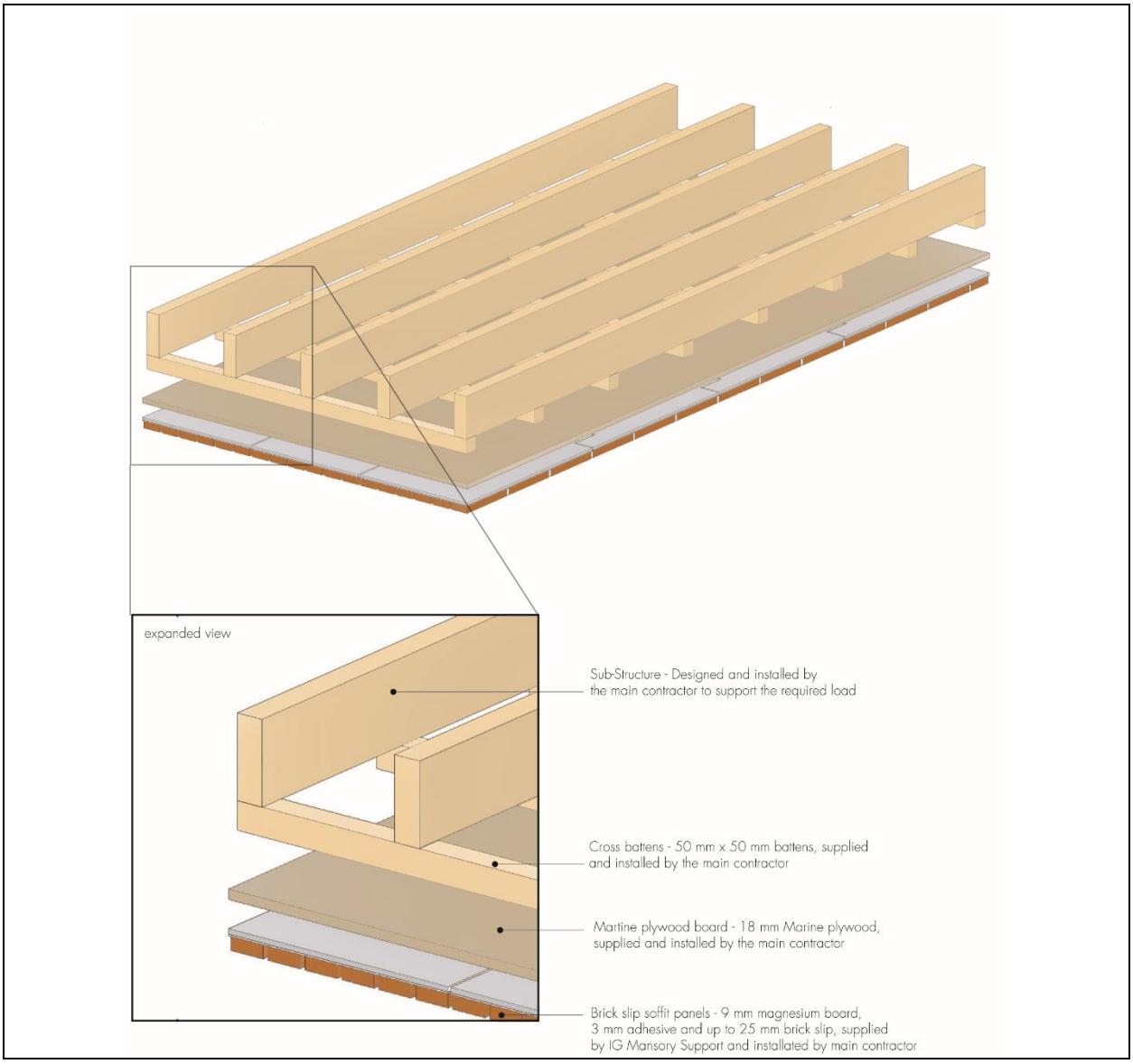


Table 1 IG Brick Slip Soffit Panels

Maximum overall length of soffit panel (mm)	890
Width of soffit panel (mm)	660
Thickness of MgO board (mm)	9
Mass per unit area with brick slip ($kg \cdot m^{-2}$)	70

Materials

1.3 The MgO board is 9 mm thick Multi-Pro XS and the subject of BBA Certificate 15/5255. The board must be screw fixed to cross battens with stainless steel BS-S-4.8 mm x 60 mm fixings at 400 mm spacing of fixings.

1.4 The brick slip panel is created from 25 mm thick brick slips cut from standard brick masonry units to BS EN 771-1 : 2011 or BS EN 771-2 : 2011, and bonded to the MgO board using 3 mm thick Chemfix Metofix 3-1 adhesive(1) in the factory controlled environment.

(1) Chemfix Metofix 3-1 is the subject of BBA Certificate 12/4893.

1.5 Ancillary items for use with the system, but outside the scope of this Certificate, are:

- the substructure — designed and installed to support the combination of design permanent actions due to the weight of cross battens, plywood, MgO board, adhesive and brick slips, and design wind action, limiting the deflection of the panel to span/500
- cross battens — 50 x 50 mm battens at a maximum of 400 mm centres to provide a gradient of 1:200 to run off any water ingress. The battens should comply with *NHBC Standards* 2019, Chapter 7.2, in regards to timber treatment
- plywood board — 18mm thick marine plywood board to be screw fixed to the underside of the battens with stainless steel BS-S-4.8 mm x 60 mm fixings. All screws must be countersunk into the plywood board to allow full contact with IG Brick Slip Soffit Panels. The exposed and cut edges of the marine plywood board must be treated to comply with *NHBC Standards* 2019, Chapter 7.2
- pointing mortar.

2 Manufacture

2.1 The MgO board is cut into specific profiles by a CNC Machine.

2.2 The brick slips are cut from bricks and factory-bonded to the soffit panels using Chemfix Metofix 3-1.

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 system of the Keystone Group has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 and BS EN ISO 14001 : 2015 by BSI (Certificates FM 523686, IG, ISO 9001 : 2015; FM 21541, Keystone Lintels Ltd, ISO 9001 : 2015 and EMS553955, Keystone Group, ISO 14001 : 2015).

3 Delivery and site handling

3.1 The system is delivered to site or to builders' merchants at specified lengths, each carrying a label bearing the Certificate holder's name. The BBA logo incorporating the number of this Certificate is marked on each soffit panel.

3.2 Reasonable care must be taken during unloading, stacking and storage to avoid damage to the soffit panels. The soffit panels that have suffered deformation or damage must not be used. Any concerns over the bond between the brick and the MgO board must be repaired by the Certificate holder. Any repair to the soffit panels must only be carried out by the Certificate holder.

3.3 The soffit panels must be stored off the ground in such a manner as to avoid the risk of either mechanical damage or contamination by corrosive substances.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on IG Brick Slip Soffit Panels.

Design Considerations

4 Use

4.1 IG Brick Slip Soffit Panels are satisfactory for use on external or internal soffits of buildings.

4.2 It is important for designers, planners, contractors and/or installers to ensure that the installation of the soffit panels is in accordance with the Certificate holder's instructions and the information given in this Certificate.

4.3 The substructure and fixings used for attaching the plywood, cross battens and substructure must be designed by an appropriately qualified design engineer on a project specific basis.

5 Practicability of installation

The system is designed to be installed by a competent general builder, or a contractor, experienced with these types of system.

6 Structural performance

6.1 IG Brick Slip Soffit Panels have adequate strength and stiffness to sustain their own weight and wind actions, providing the substructure, plywood and cross battens are designed and installed by an appropriately qualified individual to withstand the loads and limit the deflections.

6.2 The characteristic wind loads on the system should be calculated in accordance with BS EN 1991-1-4 : 2005. Special consideration should be given to locations with high wind-load pressure coefficients. In accordance with BS EN 1990 : 2002, a partial factor of 1.5 should be used to determine the design wind load to be resisted by the system.

6.3 An assessment of the structural performance for a particular building must be carried out by a suitably qualified and experienced individual to confirm that the proposed system provides adequate resistance to design wind loads.

6.4 The characteristic bond resistance between the soffit panels and brick-slip interface derived from test results is 68.5 $kN \cdot m^{-2}$.

6.5 In addition to the requirements specifically referred to in this Certificate, structures of brickwork or blockwork in which the soffit panels are incorporated must be designed and constructed in accordance with BS EN 1996-1-1 : 2005 and BS EN 1996-1-2 : 2005, and their UK National Annexes, and the following technical specifications of the national Building Regulations, as appropriate:

England and Wales — Approved Document A1/2, Part C, Section 1
Scotland — Section 1, Small Building Guide
Northern Ireland — Technical Booklet D *Structure*, Section 3.

7 Properties in relation to fire

7.1 All components of the system are not classified as non-combustible or of limited combustibility in accordance with BS EN 13501-1 : 2018.

7.2 In England, Wales and Northern Ireland, the products are not classified as non-combustible or of limited combustibility and may be used on buildings at any proximity to a boundary. For 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 7.3.

7.3 The products should not be used on buildings in England and Wales 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 Scotland, the products may be used on buildings with no storey at a height of more than 11 m above the ground and more than 1 m from the boundary. With minor exceptions, the products should be included in calculations of unprotected area.

8 Condensation risk

Surface condensation

8.1 External soffits will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.7 $W \cdot m^{-2} \cdot K^{-1}$ at any point and the junctions with walls are in accordance with the relevant requirements of *Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings* TSO 2002 or BRE Information Paper IP 1/06.

8.2 External soffits can adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2011 (Section F.5.3), including provision of an air vapour control layer (AVCL) on the warm side of the insulated soffit and a well-ventilated 50 mm air cavity between the insulation and the soffit panel.

8.3 Further guidance on limiting the risk of surface condensation can be found in:

England and Wales — Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings or Accredited Construction Details (version 1.0)
Scotland — Accredited Construction Details (Scotland)
Northern Ireland — Accredited Construction Details (version 1.0).

Interstitial condensation

8.4 External soffits can adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2011 (Section F.5.3), including provision of an AVCL on the warm side of the insulated soffit and a well-ventilated 50 mm air cavity between the insulation and the soffit panel.

9 Maintenance and Repair

9.1 If the brick finish becomes damaged or stained the advice of the Certificate holder should be sought.

9.2 Regular checks should be made on the installed system, including:

- visual inspection of the brick-slips for signs of disbondment. Dislodged slips must be re-fixed using Chemfix Metofix 3-1 adhesive
- visual inspection of architectural details designed to shed water to confirm that they are performing properly
- visual inspection to ensure that water is not leaking from external downpipes or gutters; such leakage could penetrate behind the brick slips
- direct jet cleaning of the brick slips should be avoided.

9.3 Damaged areas must be repaired using the appropriate components and procedures detailed in the Certificate holder's installation instructions and the advice of the Certificate holder should be sought.

10 Durability

10.1 Provided that IG Brick Slip Soffit Panels are designed, installed and used in accordance with the temperature and humidity conditions described in section 8, they will have a service life of at least 50 years.

10.2 The brick slips will have an equivalent durability to the bricks from which they were cut (see section 1.4).

11 Reuse and recyclability

The brick slips contain fired clay which can be recycled.

Installation

12 General

12.1 Weep holes must be installed along the lower perimeter of the marine plywood board at 450 mm centres.

12.2 Brick slips should be pointed using the same mortar as the rest of the brickwork. Pointing of the soffit panels should be conducted using a pointing gun and should not take place in wet weather or in temperatures below 3°C. During installation the soffit panel is held in place, before fixing, using a support jig. Once the fixings are in place the support jig can be used on the next soffit panel.

13 Procedure

13.1 IG Brick Slip Soffit Panels are typically fixed to the underside of the supporting plywood at maximum 400 mm centres using the stainless steel BS-S-4.8 mm x 60 mm fixings.

Installation of substructure, cross battens and plywood (outside the scope of this Certificate)

Substructure

13.2 The appropriately treated timbers should be attached to the substrate to support the combination of design permanent actions due to the weight of cross battens, plywood, MgO board, adhesive and brick slip and design wind action, limiting the deflection of the panel to span/500.

Cross battens

13.3 50 x 50 mm cross battens are installed underneath the substructure at a maximum 400 mm centre spacing. The timber used as battens must be treated appropriately. The cross battens need to have a slight gradient of 1:200 to 'run off' any water ingress. The fixings used must be stainless steel and designed by an appropriately qualified engineer for tension, pull-out and pull-through.

13.4 18 mm marine plywood is installed under the cross battens using BS-S-4.8 mm x 60 mm stainless steel fixings. All screws must be sunk into the plywood board to allow full contact with IG Brick Slip Soffit Panels. Suitability of the substructure must be confirmed by the competent person on site.

Installation of IG Brick Slip Soffit Panels

13.5 Before installing Brick Slip Soffit Panels, the installer should ensure the marine plywood board surface is flat and free from any dampness, dust, blemishes and bumps. The installer should also check the dimensions and cross reference with the layout drawing to ensure that the area is compatible and suitable (diagonal checks are required to ensure the area is square).

13.6 Each panel is supplied with a panel number to indicate the starting point. The first panel is positioned at the datum point, then supported by the support jig. Each pre-cut interlocking panel allows for a 5 mm clearance gap around adjoining edges to connecting panels. Care must be taken to maintain this gap throughout.

13.7 A 5 mm clearance gap must be left to allow for a soft joint along the perimeter of the soffit panels where they abut to other elements of the building. Each panel should be fixed with stainless steel BS-S-4.8 mm x 60 mm fixings, as per the designed fixing pattern. The fixings must be as close as possible to the centre line of the batten. The fixings must start at least 50 mm from the edge of the panel, then be no more than 300 mm apart. A minimum of 4 fixings must be installed per panel. The fixings must sufficiently sink into the MgO board but the fixing head should not sink beneath the surface as this will affect the structural quality of the board.

13.8 The process should be repeated until the area is completely covered. The alignment should be checked by taking regular measurements from the datum point. The gaps must then be pointed so that they allow for weep holes along the lower perimeter of the marine plywood board at 450 mm centres.

Technical Investigations

14 Tests

Tests were carried out on the system and the results assessed to determine:

- bond strength after accelerated ageing
- pull-out resistance of fixings
- pull-through resistance of fixings.

15 Investigations

15.1 An assessment was made of data relating to:

- calculations to establish minimum temperature factors and the Ψ values of typical constructions incorporating the system, undertaken to BRE Information Paper IP 1/06
- durability
- practicability of installation.

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*

BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*

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 1990 : 2002 *Eurocode — Basis of structural design*

BS EN 1991-1-4 : 2005 *Eurocode 1 : Actions on structures — General actions — Wind actions*

BS EN 1996-1-1 : 2005 + A1 : 2012 Eurocode 6: *Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
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 of 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 1363-1 : 2012 *Fire resistance tests — General requirements*

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

BS EN ISO 14001 : 2015 *Environmental management systems — Requirements with guidance for use*

Conditions of Certificate

Conditions

1. This Certificate:

- relates only to the product 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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 or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA, UKNI or CE marking.

6. Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.

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