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Agrément Certificate
21/5933
Product Sheet 1

APEX BRICKCUTTERS (MIDLANDS) LIMITED

LIGHTWEIGHT BRICK CLAD INSULATED PANEL

This Agrément Certificate Product Sheet[1] relates to the Lightweight Brick Clad Insulated Panel, comprising cement/wood particle board with an injected core of polyurethane foam, with fired clay brick slips attached with epoxy adhesive, for use as decorative brick slip cladding over openings in buildings subject to height restrictions.

(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

Resistance to weathering — the bond between the brick slips and the composite board is durable and stable when subjected to freeze/thaw cycling (see section 6).

Strength and stability — the product is suitable for use in locations where there is little possibility of impact or abrasion damage (see section 7).

Behaviour in relation to fire — the reaction to fire classification of the product has not been declared to BS EN 13501-1 : 2018 and its use is restricted (see section 8).

Durability — provided the product is designed, installed and used in accordance with this Certificate, it will have a service life in excess of 60 years (see section 12).

The BBA has awarded this Certificate to the company named above for the product described herein. This product 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: 14 September 2021

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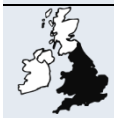
Regulations

In the opinion of the BBA, the Lightweight Brick Clad Insulated Panel, 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 product is acceptable for use as set out in sections 7.1 to 7.8 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The product is restricted by this Requirement. See sections 8.1 to 8.3 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See sections 10.2 and 10.3 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The product can contribute to satisfying this Requirement. See section 9 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
Comment:		The product is restricted by this Regulation. See sections 8.1 and 8.3 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 product can contribute to satisfying these Regulations. See section 9 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Durability, workmanship and fitness of materials**
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	1.1(a)(b)	Structure
Comment:		The product is acceptable, with reference to clauses 1.1.1(1)(2) and 1.1.2(1)(2) of this Standard. See sections 7.1 to 7.8 of this Certificate.
Standard:	2.6	Combustibility
Comment:		The product is restricted by this Standard, with reference to clauses 2.6.4(1)(2), 2.6.5(1) and 2.6.6(2). See section 8.1 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The product is restricted by this Standard, with reference to clause 2.7.1(1)(2). See sections 8.1, 8.2, 8.4 and 8.5 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 6.1.1(1), 6.1.2(2) and 6.1.6(1). See section 9 of this Certificate.

Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 6.2.3(1) and 6.2.5(2). See section 9 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product 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:	**12**	**Building standards applicable to conversions**
Comment:		Comments in relation to the product 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 product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**30**	**Stability**
Comment:		The product is acceptable as set out in sections 7.1 to 7.8 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The product is restricted by this Regulation. See sections 8.1 to 8.3 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Comment:		The product can contribute to satisfying this Regulation. See section 9 of this Certificate.
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Comment:		The product can contribute to satisfying this Regulation. See section 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 section: 3 *Delivery and site handling* (3.1) of this Certificate.

Additional Information

NHBC Standards 2021

In the opinion of the BBA, the Lightweight Brick Clad Insulated Panel, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

Technical Specification

1 Description

1.1 The Lightweight Brick Clad Insulated Panel is made of composite units of cement/wood particle board with an injected core of polyurethane foam, with fired clay brick slips bonded to the board with epoxy resin (see Figure 1).

1.2 The maximum available continuous length of the product is 3000 x 1200 mm width, with a span of up to 2400 mm and a thickness of 70 or 80 mm. The fair-faced soffit (brick slips) can be in the range of 20 to 30 mm thickness. Therefore, the maximum thickness of the product is 110 mm (80 + 30 mm).

Figure 1 Lightweight Brick Clad Insulated Panel

1.3 The product consists of the following components (see Figure 2):

Composite board

- Cement/wood particle board – combination of 8 mm thick cement particle board and an injected core of polyurethane foam by Euroform. CE marked in accordance with harmonised standard EN 13986 : 2004

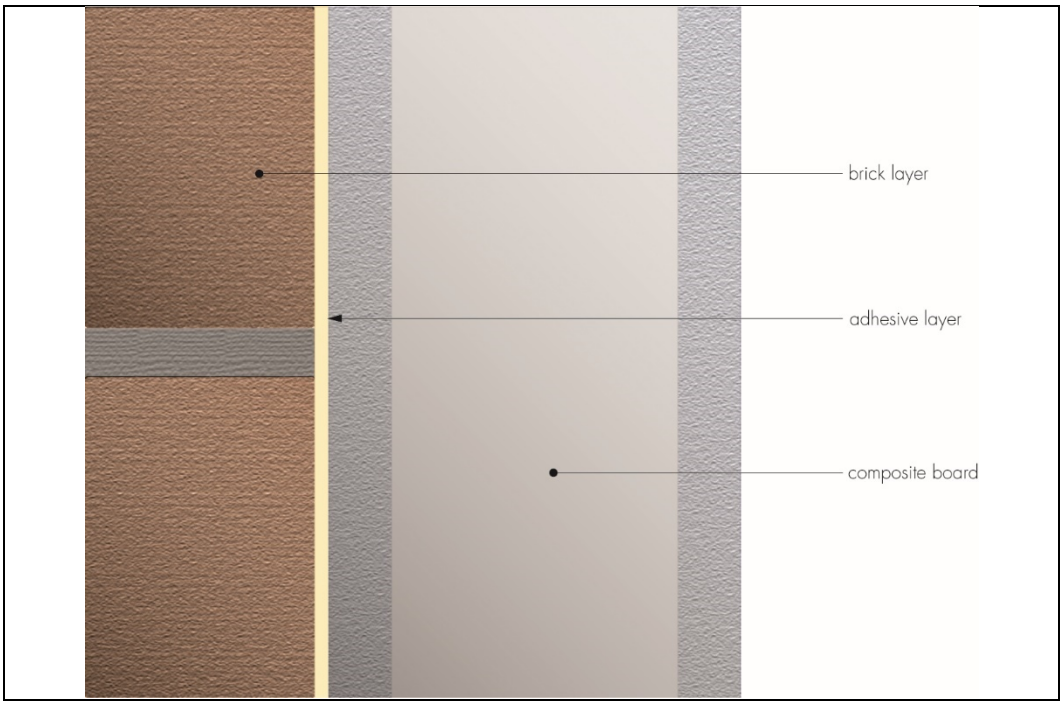
Adhesive

- Adhesive – Metolux Metofix 3-1 and Metofix 3-1 GRP, solvent-free, two-component epoxy adhesive (subject of BBA Certificate 12/4893)

Brick slip

- Brick slips – 30 mm wide and cut from bricks manufactured in accordance with BS EN 771-1 : 2011 and BS 4729 : 2005.

Figure 2 Components of Lightweight Brick Clad Insulated Panel



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

- PVC trims
- masonry support system or lintel

- expansion joint mastic sealant
- wall ties
- weep vents
- cavity trays
- dpc.

2 Manufacture

2.1 The product is composed of cement/wood particle board, adhesive and brick slips. The product is formed by sandwiching foam between a cement particle board, then brick slips are bonded to the board using epoxy adhesive.

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

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

3 Delivery and site handling

3.1 The panels are delivered in shrink-wrap, with edge protectors and banded packaging used for initial transit and temporary protection. Each panel should be stored flat (no more than 11 panels high for up to 100 mm thickness, 10 high for 110 mm) over suitable stillage to a slight fall (to allow rain runoff). Bearers should be at 600 mm (maximum) centres (end bearers not more than 150 mm from edge of panel), and aligned vertically between individual packs in accordance with the Certificate holder's guidelines.

3.2 The components should be stored in dry, sheltered conditions at least 150 mm off the ground, and covered with opaque polyethylene sheeting or tarpaulin until the panels and components are to be used for erection.

3.3 The panels can withstand the normal loads associated with site handling and installation. Damaged panels should not be used.

Assessment and Technical Investigations

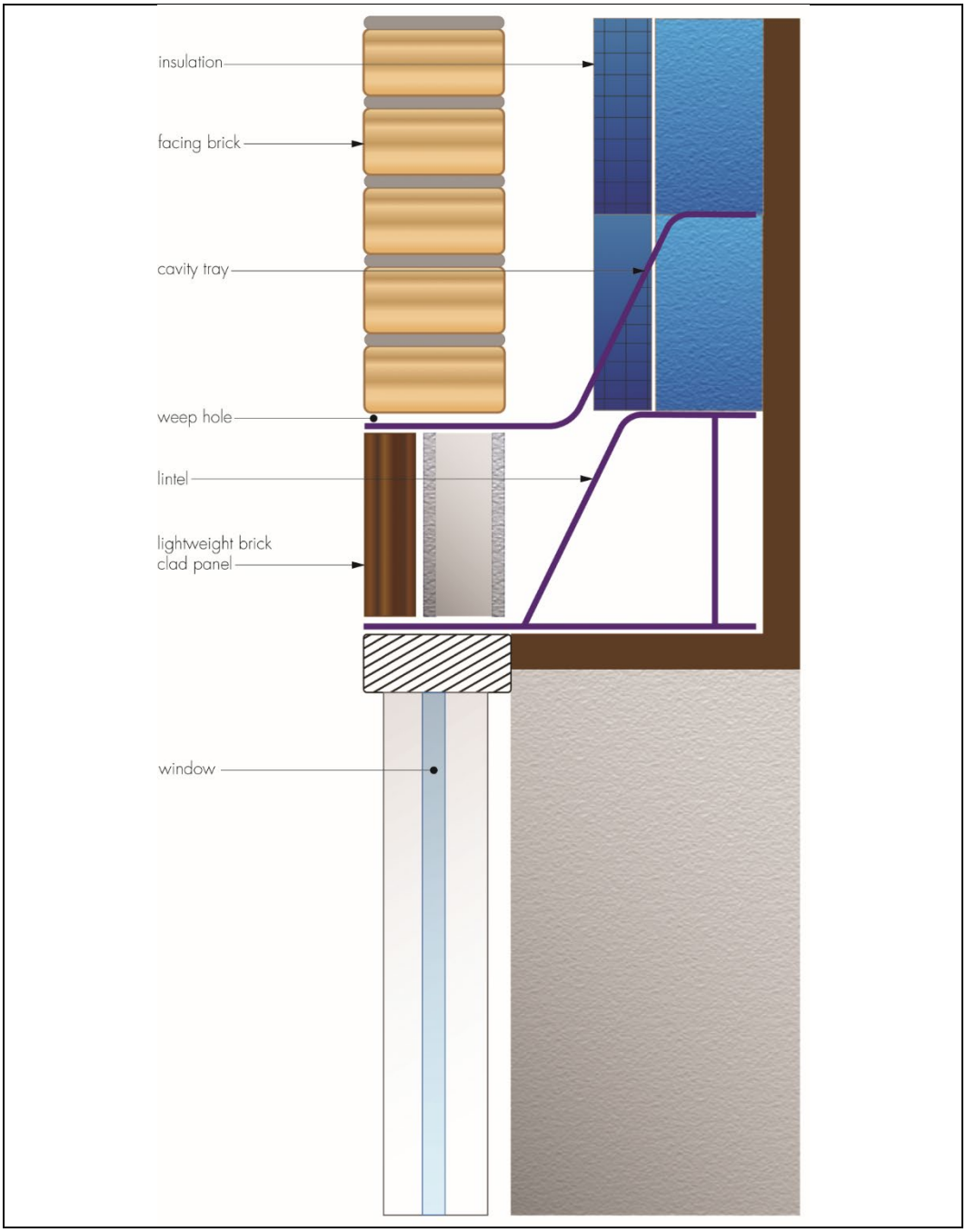
The following is a summary of the assessment and technical investigations carried out on the Lightweight Brick Clad Insulated Panel.

Design Considerations

4 Use

4.1 The Lightweight Brick Clad Insulated Panel is satisfactory for use as a decorative brick-slip-clad arch over openings , with height restrictions (see section 8) in conjunction with load bearing stainless steel lintels (see Figure 3).

Figure 3 General cross-section of Lightweight Brick Clad Insulated Panel



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

4.3 As with any form of cavity wall construction, where buildings need to comply with *NHBC Standards* 2021, specifiers should observe the requirements of these Standards.

5 Practicability of installation

The product is designed to be installed by a competent general builder, or a contractor, experienced with this type of product.

6 Resistance to weathering

6.1 The type of facing brick chosen for a particular exposure situation should comply with PD 6697 : 2019, Table 15.

6.2 The bond between the facing brick and composite board is durable and stable when subjected to freeze/thaw cycling.

6.3 The product is suitable for use in all exposure conditions up to 'Very Severe', in accordance with PD 6697 : 2019. Designers must provide a specification for the abutting bricks, mortar type and striking, cavity trays and stop ends appropriate for the exposure zone.

7 Strength and stability

7.1 The product has adequate strength and stiffness to sustain its own weight, providing it is installed by an appropriately qualified individual. The product is non-load bearing and must be used in conjunction with load bearing stainless steel cavity lintels.

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

7.3 An assessment of the structural performance for each 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.

7.4 The characteristic bond resistance between the backing board and brick slip interface for a weathered sample was 128 $kN.m^{-2}$ in accordance with BS EN 1015-12 : 2016. The test report can be requested from the Certificate holder.

7.5 The characteristic bond resistance between the backing board the insulation was 90.6 $kN.m^{-2}$ in accordance with BS EN 1015-12 : 2016. The detailed test report can be requested from the Certificate holder.

7.6 The compressive strength of the product, derived from tests in accordance with BS EN 772-1 : 2011, was 750 $kN{\cdot}m^{-2}$ for 2400 (L) x 95 (THK) x 210 (W) mm and 720 $kN{\cdot}m^{-2}$ for 500 (L) x 95 (THK) x 210 (W) mm. The detailed test report can be requested from the Certificate holder.

7.7 The characteristic flexural load at failure of the product with 2400 x 95 x 210 mm dimensions is 1.1kN in accordance with BS EN 846-9 : 2016. The detailed test report can be requested from the Certificate holder.

7.8 In addition to the requirements specifically referred to in this Certificate, brickwork or blockwork structures in which the product is 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, PD 6697 : 2019 and the technical specifications of the national Building Regulations, as appropriate.

Impact resistance

7.9 Soft and hard body impact tests were carried out, which confirmed that the product is suitable for Use Categories II, III and IV as defined in EAD 090062-00-0404 : 2018 table G.2 (partially reproduced in Table 1, below).

Table 1 Use Categories

Use Category	Description
I	a zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use
II	a zone liable to impacts from thrown or kicked objects, but in public locations where the height of the system 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
III	a zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects
IV	a zone out of reach from ground level.

8 Behaviour in relation to fire

8.1 The Certificate holder has not declared a reaction to fire classification for the product to BS EN 13501-1 : 2018.

8.2 With minor exceptions, the product should be included in calculations of unprotected area.

8.3 In England, Wales and Northern Ireland, the product may be used on buildings with no storey 18 m or more above the ground and 1 metre or more from a boundary.

8.4 In Scotland, the product may be used on buildings more than 1 m from a boundary.

8.5 In Scotland, the product should not be used on any building 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 m^2, or on any hospital or residential care building with a total storey area more than 200 m^2.

8.6 Designers should refer to the relevant national Building Regulations and 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.

9 Thermal performance

Lintel junctions incorporating the product can help to limit excessive heat loss and allow use of the psi-values (ψ-value) shown in Table 2 of this Certificate, in carbon emission rate calculations. For other lintel junction designs, the thermal performance should be numerically analysed in accordance with BS EN ISO 10211 : 2017 and BR 497 : 2016, using the thermal conductivity values below.

- injected PUR foam: 0.030 $W \cdot m^{-1} \cdot K^{-1}$
- cement bonded particleboard: 0.23 $W \cdot m^{-1} \cdot K^{-1}$
- brick slips: 0.77 $W \cdot m^{-1} \cdot K^{-1}$.

Table 2 Junction psi-values

Junction type	Approved ψ-value ($W \cdot m^{-1} \cdot K^{-1}$)(1)	Default ψ-value ($W \cdot m^{-1} \cdot K^{-1}$)(2)
E1 (lintels with perforated base plate)	0.50	1.0
E2 (other lintels, including other steel lintels)	0.30	1.0

(1) Lintel design conforms to guidance in the Accredited Construction Details v1.0.
(2) Where a junction detail has not been calculated in accordance with BS EN ISO 10211 : 2017 and BR 497 : 2016 and the construction deviates from that described in footnote (1) and/or (2) the default psi-value should be used.

10 Condensation

10.1 To limit the risk of condensation, it is essential that the thermal insulation and vapour check continuity is achieved effectively during installation.

Surface condensation

10.2 The surface condensation risk should be established by numerical modelling in accordance with BRE Information Paper IP 1/06.

10.3 Further guidance on limiting the risk of surface condensation can be found in documents supporting the national Building Regulations.

11 Maintenance

11.1 Should damage to the bonded brick work occur, that section of the brick work must be removed back to sound substrate and repaired. The Certificate holder should be consulted as to the method of repair to be utilized.

11.2 The brick colour is not prone to fading and the only obvious future repairs may be at the joint faces, which may require re-pointing. However, if pointing has been carried out in a suitable manner and the correct mix proportions are used in relation to the exposure factor, then this should not be the case for many years.

11.3 Guttering, flashing, downpipes and other detailing must be maintained to prevent localised saturation causing efflorescence, algal growths or associated staining.

11.4 Any adhered decorative features, such as uPVC trims, should be inspected for signs of cracking and replaced when necessary.

12 Durability

12.1 Provided that the product is designed, installed and used in accordance with this Certificate, it will have a service life in excess of 60 years.

12.2 The brick slips will have an equivalent durability to the bricks from which they were cut (see section 1.3).

12.3 Any decorative uPVC trims attached below the brick slips for a decorative finish are not expected to have a service life of 60 years and will need to be replaced during the service life of the product, similar to standard uPVC fenestration components. The SIP panel underneath the PVC should not be left exposed for extended periods of time.

13 Reuse and recyclability

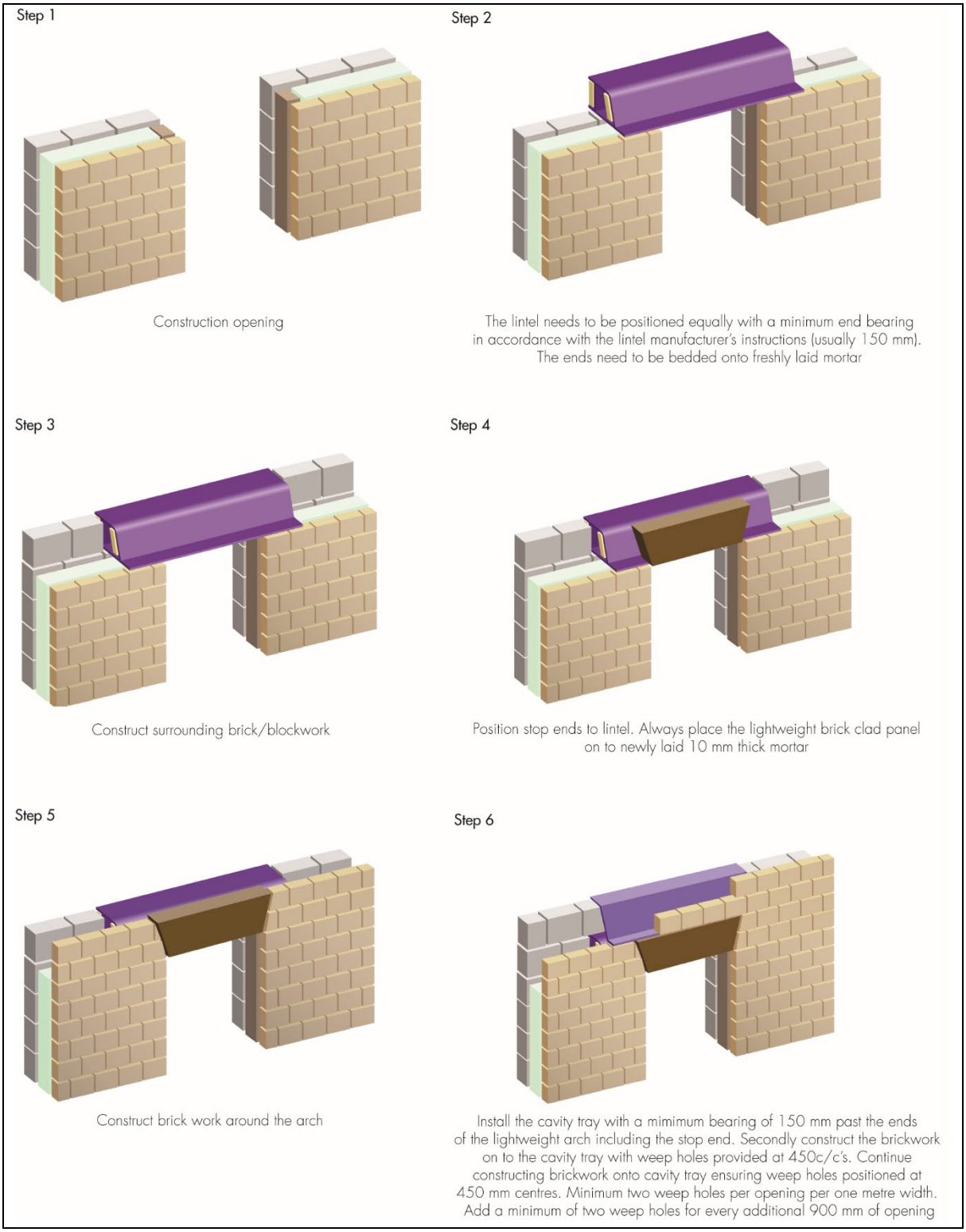
The product contains fired clay, which can be recycled.

Installation

14 General

14.1 The product is non-structural and must be supported by a steel cavity lintel; the lintel is placed in position, and levelled using slate packing or stainless steel shims if required. The product is laid on a full bed of mortar, seated central to the opening. The product should be in place before the adjacent brickwork is constructed around the product. This will allow for the variation in size of the traditional brickwork panels either side of the arch. Where cavity trays are positioned over the lintel or combined lintels are used, stop ends and weep holes must be provided in the infill brick work adjacent to the product. Where cavity trays are positioned above the product, weep holes at 900 mm c/c (minimum of two per opening), stop ends and weep holes in the brickwork adjacent to the product must be provided – the lintel should have a suitable profile and durability, and proprietary stop ends and weep holes in the brick work adjacent to the product must be provided. Recommended by the Certificate holder – Figure 4 explains the laying order for the product.

Figure 4 Laying order of the Lightweight Brick Clad Panel



14.2 Setting out of the product should be done using the face brickwork, and not the backing board. It is expected that, in some cases, the backing board will protrude beyond the edges of the brick slips; in this instance, the brick to brick dimension should be used to gauge spacing, and the joints between the backing board adjusted accordingly, to ensure continuity of the joint profile. Quality of workmanship on site should be in accordance with BS 8000-3 : 2020.

14.3 For most situations, M4 mortar (designation iii) is used, but in severe exposure locations M6 (designation ii) mortar may be required. Design and technical advice should be sought from the Certificate holder in these cases. The Certificate holder recommends the use of bucket handle joints with the product.

14.4 The perpendicular and bed joints of the backing board should be fully filled with mortar. The depth of the slips should be left free, ready for pointing, once the bedding mortar has set sufficiently for the product to remain stable. Immediately after each unit is laid, excess mortar should be struck off from the external face of the unit and the internal face of the board, to keep the cavity free from obstructions.

14.5 A dpc or cavity tray with stop ends must be installed above the product over all openings in external cavity walls and should be in accordance with BS EN 1996-2 : 2006 and PD 6697 : 2019. Where the lintel does not require a dpc, it should have a suitable profile, durability, and proprietary stop ends adhered to the surface of the lintel in accordance with the Certificate holder's recommendations.

14.6 Weep holes must be provided in the outer leaf above the product to drain moisture from the cavity. A minimum of two weep holes should be provided per unit. For fair-faced masonry, weep holes should be provided at each end, and every 450 mm if applicable. Stop ends should be included on the supporting lintel and weep holes in the infill brickwork adjacent to the product.

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

14.8 Wall tie specification and placement should be in accordance with BS EN 1996-2 : 2006 and PD 6697 : 2019 in a cavity wall situation. Where relevant, ties should have a minimum embedment of 50 mm into each leaf. Ties should be level or slightly sloping to the outer leaf. Specification of ties should be to architects' and engineers' requirements.

14.9 Brick slips should be pointed using the same mortar as the rest of the brickwork, but only after removal of the temporary propping and after the full load has been applied to the lintel. Pointing lintel soffits should be conducted using a pointing gun. Pointing should not take place in wet weather or in temperatures below 3°C.

14.10 If the face of the brick slips has been contaminated with mortar smudges or other means, the wall should be pre-wetted with water, and the residue of mortar treated by careful application of a 10% hydrochloric acid solution using a paintbrush. For lighter brick colours, a 5% hydrochloric acid solution is recommended by the Certificate holder. The application of the acid breaks down the cementitious components but, in the solutions suggested, is not damaging to clay bricks. Adjacent features, such as metal windows and the area at the foot of the wall, should be protected from splashing by the chemicals. When vanadium is present, hydrochloric acid-based cleaners must not come into contact with it otherwise a dark stain will result which will become fixed on the surface. Usage of a high-pressure hose is not recommended.

Technical Investigations

15 Tests

Tests were carried out and the results assessed to determine:

- compressive strength
- bond strength after accelerated ageing
- flexural resistance
- soft and hard body impacts.

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 data relating to practicability of installation.

Bibliography

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

BRE Report BR 497 : 2016 *Conventions for calculating linear thermal transmittance and temperature factors*

BS 4729 : 2005 + A1 : 2016 *Clay bricks of special shapes and sizes — Recommendations*
BS 8000-3 : 2020 : *Workmanship on building sites — Code of practice for masonry*

BS EN 771-1 : 2011 + A1 : 2015 *Specification for masonry units — Clay masonry units*
BS EN 772-1 : 2011 + A1 : 2015 : *Methods of test for masonry units — Determination of compressive strength*

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

BS EN 1015-12 : 2016 *Methods of test for mortar for masonry — Determination of adhesive strength of hardened rendering and plastering mortars on substrates*

BS EN 1990 : 2002 + A1 : 2005 *Eurocode 1 — Basis of structural design*
NA to BS EN 1990 : 2002 + A1 : 2005 UK National Annex to *Eurocode 1 — Basis of structural design*

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 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 1996-2 : 2006 : *Design of masonry structures — Design considerations, selection of materials and execution of masonry*

BS EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*

BS EN ISO 10211 : 2017 *Thermal bridges in building construction — Heat flows and surface temperatures — Detailed calculations*

EAD 090062-00-0404 : 2018 *Kits for external wall claddings mechanically fixed*

EN 13986 : 2004 + A1 : 2015 *Wood-based panels for use in construction — Characteristics, evaluation of conformity and marking*

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

17 Conditions

17.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

17.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

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

17.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

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

17.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.