

Manchester Brick and Precast

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Agrément Certificate

00/3674

Product Sheet 2

MANCHESTER BRICK AND PRECAST PRODUCTS

BRICK OR BLOCK FACED STRUCTURAL UNITS

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the facing of structural units such as arches, lintels and panels with bonded cut bricks or blocks. The Certificate covers the effectiveness of the bond between the facing bricks/blocks and the substrate, and not the structural performance of the unit itself.

AGRÉMENT 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 frost damage — the bond between the facing bricks or blocks and the prefabricated structure, using either epoxy adhesive or the positively-keyed process, is durable and stable when subjected to freeze-thaw cycling (see section 5).

Durability — cut bricks or blocks attached to precast units using either epoxy adhesive or the positively-keyed process will retain their adhesion, giving a service life equivalent to that of other similar brick masonry (see section 7).



The BBA has awarded this Agrément 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

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

Date of First issue: 6 March 2009

Originally certificated on 24 January 2000

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, Brick or Block Faced Structural Units, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	C2(a)(b)	Resistance to moisture
Comment:		Walls incorporating the products can meet this Requirement provided design and construction are in accordance with section 3.1 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable. See section 7 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The products can contribute to a construction satisfying this Regulation. See sections 6 and 7 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.10	Precipitation
Comment:		Walls incorporating the products can comply with this Standard provided design and construction are in accordance with section 3.1 of this Certificate, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ to 3.10.5 ⁽¹⁾⁽²⁾ .
Regulation:	12	Building standards – conversions
Comment:		All comments given for these products under Regulation 9 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) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable. See section 7 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The products do not normally require maintenance. See section 6 of this Certificate.
Regulation:	C4(a)(b)	Resistance to ground moisture and weather
Comment:		Walls incorporating the products can meet this Regulation provided design and construction are in accordance with section 3.1 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 2 *Delivery and site handling* (2.1).

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of Manchester Brick and Precast Brick or Block Faced Structural Units, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Manchester Brick and Precast Brick or Block Faced Structural Units, when installed and used in accordance with this Certificate, satisfy the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *External walls – masonry*.

General

This Certificate relates to Brick or Block Faced Structural Units, comprising of arches, lintels and panels faced with bonded cut bricks or blocks.

Technical Specification

1 Description

1.1 The bricks or blocks used for facing the structural units are normally to BS EN 771-1 : 2003, BS EN 771-2 : 2003, or BS EN 771-3 : 2003 : 1981. Other bricks, not covered by these Standards, can also be used, but they must be suitable for the required end use. The bricks and blocks are cut and used to face structural units such as arches for lintels in either of two factory-controlled processes:

- bonding, using epoxy adhesive, to galvanized steel mesh frameworks or to reinforced concrete units
- mechanical attachment by use of the positively-keyed process. In this process a mould is lined with bricks or blocks into which a 'key' has been cut. Concrete subsequently poured into the mould flows into the key and, when set, mechanically secures the bricks or blocks to the finished unit.

1.2 Quality control is exercised over the raw materials, during manufacture, and on the final product.

2 Delivery and site handling

2.1 The products are supplied shrink-wrapped and are suitable for off-loading using mechanical grabs or by fork-lift trucks.

2.2 The shrink-wrapping bears the product type, class, designation, production code and the BBA identification mark incorporating the number of this Certificate.


2.3 The products should be stored clear of the ground on a dry, level area and should be protected from rain and snow until required for building, in accordance with normal good practice.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Brick or Block Faced Structural Units.

Design Considerations

3 General

 3.1 Walls built incorporating Brick or Block Faced Structural Units should be designed and constructed in accordance with the relevant parts of BS 5628 : 2005.

3.2 No assessment has been made of the contribution of epoxy-bonded cut bricks or blocks to the fire resistance of the structure on which they are incorporated.

3.3 No assessment has been made of the structural properties of the units to which the bricks or blocks are attached.

4 Practicability of installation


The faced structural units are designed to be installed by contractors experienced with these type of products.

5 Resistance to frost damage


5.1 The type of facing brick chosen for a particular exposure situation should comply with BS 5628-3 : 2005 , Table 12.

5.2 The bond between the facing bricks or blocks and the prefabricated structure, using either epoxy adhesive or the positively-keyed process, is durable and stable when subjected to freeze-thaw cycling.

6 Maintenance

 Should damage to the bonded cut bricks or blocks occur, the damaged section is removed back to sound substrate and repaired. The Certificate holder should be consulted on the technique to be used.

7 Durability

 Cut bricks or blocks attached to precast units using either epoxy adhesive or the positively-keyed process will retain their adhesion, and have a service life equivalent to that of other similar brick masonry.

Installation

8 General

8.1 Walls built using Brick or Block Faced Structural Units should be designed and constructed in accordance with the relevant parts of BS 5628 : 2005.

8.2 The products are resistant to damage when handled on site in accordance with BS 5628-3 : 2005, Annex A.

9 Supervision

The level of supervision during installation of the products, as with all masonry, must be sufficient to ensure the quality of workmanship described in BS 5628-3 : 2005 and BS 8000-3 : 2001.

Technical Investigations

10 Tests

Tests on the bond between the cut bricks or blocks and the structural units were carried out to determine:

- bond strength of cut bricks to galvanized steel mesh
- effect of heat ageing on bond strength
- effect of freeze/thaw on bond strength
- resistance of bond to alkalis.
- bond strength of cut bricks to concrete units
- effect of thermal shock on bond strength
- resistance of bond to acids

11 Investigations

The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the material used.

Bibliography

- BS 5628-1 : 2005 *Code of practice for the use of masonry — Structural use of unreinforced masonry*
BS 5628-2 : 2005 *Code of practice for the use of masonry — Structural use of reinforced and prestressed masonry*
BS 5628-3 : 2005 *Code of practice for the use of masonry — Materials and components, design and workmanship*
BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*
BS EN 771-1 : 2003 *Specification for masonry units — Clay masonry units*
BS EN 771-2 : 2003 *Specification for masonry units — Calcium silicate masonry units*
BS EN 771-3 : 2003 *Specification for masonry units — Aggregate concrete masonry units (dense and light-weight aggregates)*

12 Conditions

12.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

12.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

12.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

12.4 In granting this Certificate, the BBA is not responsible for:

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

12.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.

