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Agrément Certificate
16/5328
Product Sheet 1

BRICK-SLIP ADHESIVE

BRICK-FIX 3-1

This Agrément Certificate Product Sheet(1) relates to Brick-Fix 3-1, an epoxy adhesive used for bonding cut bricks and pavers and the fixing of brick slips to cast concrete structural units, stainless steel or powder-coated lintels, cement-bonded particle board or GRP substrates under factory conditions. It may also be used on site for the replacement of damaged brick slips.

(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 — the product achieves a bond of acceptable strength to the substrates described in this Certificate (see section 6).

Resistance to frost damage — the epoxy bond is durable and stable when subjected to freeze/thaw cycling (see section 7).

Durability — the product is durable and capable of bonding cut bricks and pavers and fixing brick slips to the substrates listed in section 4, all of which can have a service life equivalent to similar brick masonry or pavers (see section 9).

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 Second issue: 14 December 2021

Originally certificated on 8 June 2016

Hardy Giesler
Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.
The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

Regulations

In the opinion of the BBA, the use of Brick-Fix 3-1 is not subject to the national Building Regulations.

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 and 3.3) of this Certificate.

Additional Information

NHBC Standards 2021

In the opinion of the BBA, Brick-Fix 3-1, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards, Chapters 2.1, Requirement R3.

Technical Specification

1 Description

Brick-Fix 3-1 is a solvent-free, two-component epoxy adhesive.

2 Manufacture

2.1 Brick-Fix 3-1 is manufactured using batch-blending processes.

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 being operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 The product is packaged in polypropylene containers, with the hardener component housed in the dish lid, in 5 and 20 kg pack sizes.

3.2 The product has a shelf-life of two years from the date of manufacture, when stored in unopened containers in dry conditions at temperatures of between 5 and 25°C.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the product under the *CLP Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures.* Users must refer to the relevant Safety Data Sheet(s).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Brick-Fix 3-1.

Design Considerations

4 Use

4.1 Brick-Fix 3-1 is supplied by the manufacturer to third-party fabricators for use in the following applications:

- bonding of cut bricks for use in walling applications where angled bricks to BS 4729 : 2005 (types AN, PL or similar) would normally be used
- bonding of cut pavers for use where pavement designs and murals are required in pedestrian areas with occasional low-speed vehicular access
- bonding of brick slips to:
  - cast concrete structural units
  - GRP substrates
  - perforated stainless steel or powder-coated galvanised steel lintels (perforations to be no more than 40 mm apart and the area of perforations to be no more than 3% of the total bonding area)
  - cement particle board to BS EN 634-1 : 1995 and BS EN 634-2 : 2007, and CE / UKCA marked in accordance with EN 13986 : 2004.

4.2 The aforementioned applications relate to factory-based processes carried out by third-party fabricators. On-site repairs to factory-made units which have been damaged on site may also be possible. The advice of the manufacturer should be sought.

4.3 The adhesive achieves a durable bond providing that the surfaces are properly prepared (in accordance with section 11.1) and that the application and curing of the adhesive is in accordance with the Certificate holder's instructions and section 11.

4.4 This Certificate covers the performance of the Brick-Fix 3-1 adhesive only. It does not cover the performance of finished products manufactured by third-party fabricators using the product.

5 Practicability of installation

The product is used under factory conditions for the assembly of bonded masonry units. The on-site installation of such units is outside the scope of this Certificate.

6 Strength

6.1 Cut and bonded bricks and pavers have similar flexural strengths to the bricks and pavers from which they were manufactured.

6.2 The bond between bricks slips and the substrates itemised in section 4.1 has satisfactory strength and can withstand loadings likely to be encountered in service.

7 Resistance to frost damage

The epoxy bond is durable and stable when subjected to freeze-thaw cycling. The freeze-thaw resistance of actual bonded masonry units will depend on the intrinsic freeze-thaw resistance of the constituent masonry units themselves.

8 Maintenance

The epoxy bond is durable and does not require maintenance.

9 Durability

The product is durable and satisfactory for bonding cut bricks and pavers, and for fixing brick slips to concrete, GRP or cement-bonded particle board substrates, and stainless steel or powder-coated lintels. Factory-bonded products will have a service life commensurate with that of the materials from which they were manufactured.

Installation

10 General

Installation of factory-made products using Brick-Fix 3-1 is outside the scope of this Certificate.

11 Bonding procedure

11.1 The bonding procedures carried out by third-party fabricators may vary according to the specific substrates used. However, the general procedures outlined in sections 11.2 to 11.4 should be followed.

11.2 Substrates to be adhered should be sound, clean and dry, and free from loose material, laitance and contamination (for example oil and grease). Smooth surfaces to be bonded should be abraded and/or profiled to provide a key for the adhesive.

11.3 The product is mixed at a ratio of 3:1 (by weight) base to hardener. Mixing can be accomplished by a slow-speed mixer or by hand, employing a smooth board and a wide blade scraper.

11.4 The mixed product is applied by trowel, spatula or scraper to a minimum thickness of 1 mm. Surfaces to be bonded should be brought together with firm pressure while the product is still mobile and tacky. Components should be supported during curing to prevent slippage.

11.5 Pot life will depend upon the quantity mixed and the ambient temperature (see Table 1).

Table 1 Product pot life

Product and unit size	**Ambient temperature (°C)**		
	5	**15**	**30**
5 kg unit	2 hours	30 mins	15 mins
20 kg unit	1.5 hours	25 mins	10 mins

11.6 Product coverage for the 5 kg units at an applied thickness of 1 mm is approximately 3.3 m^2.

Technical Investigations

12 Tests

Tests were carried out on Brick-Fix 3-1, and the results assessed to determine:

- flexural strength of cut and bonded bricks after exposure to heat ageing, thermal shock and freeze-thaw conditioning
- bond strength of brick slips adhered to the following substrates after exposure to heat ageing, thermal shock and freeze-thaw conditioning:
  - cast concrete
  - GRP substrates
  - perforated stainless steel and powder-coated galvanised steel lintels
  - cement-bonded particle board to BS EN 634-1 : 1995 and BS EN 634-2 2007, CE marked in accordance with BS EN 13986 : 2004.

13 Investigations

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

BS 4729 : 2005 + A1 : 2016 *Clay bricks of special shapes and sizes — Recommendations*

BS EN 634-1 : 1995 *Cement-bonded particle boards. Specification — General requirements*

BS EN 634-2 : 2007 *Cement-bonded particleboards. Specifications — Requirements for OPC bonded particleboards for use in dry, humid and external conditions*

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

14 Conditions

14.1 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 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.

14.2 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.

14.3 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.

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

14.5 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.

14.6 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.

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