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BBA APPROVAL INSPECTION TESTING CERTIFICATION
TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate
89/2149
Product Sheet 1

RONACRETE MORTAR ADMIXTURES

RONAFIX BRICK SLIP ADHESIVE MORTAR ADMIXTURE

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Ronafix Brick Slip Adhesive Mortar Admixture, a liquid admixture for sand-cement mortars.

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 moisture — Sand-cement mortar containing the product has a greater resistance to the passage of moisture than the equivalent unmodified sand-cement mortar (see section 5).

Strength and stability — Sand-cement mortar containing the product will provide a strong and durable bond to prepared concrete (see section 6).

Durability — Sand-cement mortar containing the product is not significantly affected by frost action and will be more durable than the equivalent unmodified sand-cement mortar (see section 9).

The BBA has awarded this Agrément Certificate to the company named above for the product described herein. The 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: 21 December 2010
Originally certificated on 2 February 1989

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

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

Regulations

In the opinion of the BBA, there are no requirements in these regulations relating to the use of Ronafix Brick Slip Adhesive Mortar Admixture:

The Building Regulations 2010 (England and Wales)

The Building (Scotland) Regulations 2004 (as amended)

The Building Regulations (Northern Ireland) 2000 (as amended)

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) of this Certificate.

Non-regulatory Information

NHBC Standards 2010

In the opinion of the BBA, the use of Ronafix Brick Slip Adhesive Mortar Admixture, in relation to this Certificate, is not subject to the requirements of these Standards.

Technical Specification

1 Description

1.1 Ronafix Brick Slip Adhesive Mortar Admixture is a one-part styrene butadiene rubber (SBR) aqueous dispersion, containing 47% solids, which is mixed on site with cement, specified aggregate and water.

1.2 A bonding coat of slurry primer consists of one part Ronafix Brick Slip Adhesive Mortar Admixture and one part cement.

1.3 Ronafix may be used with Portland cement CEM I 52,5R complying with the requirements of BS EN 197-1 : 2000. It must not be used with masonry cement.

1.4 Quality Control is exercised over the incoming raw materials, during the production process and on the final product.

2 Delivery and site handling

2.1 The product is delivered to site in 5, 25 and 220 litre containers bearing the manufacturer's name and the BBA identification mark incorporating the number of this Certificate.

2.2 The product should be stored under cover and protected from freezing and when stored under these conditions it has a shelf life of 9 months.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Ronafix Brick Slip Adhesive Mortar Admixture.

Design Considerations

3 General

Ronafix Brick Slip Adhesive Mortar Admixture is suitable for use in conjunction with a designed sand-cement mortar mix, as an adhesive for bonding brick slips to suitably prepared dense concrete.

4 Practicability of installation

The product should only be installed by operatives who have been trained and are experienced with this type of product.

5 Resistance to moisture

Sand-cement mortar containing the product has a greater resistance to the passage of moisture than the equivalent unmodified sand-cement mortars. When applied to the substrate the slurry primer is impervious to liquid water under the pressure conditions likely to be met in service.

6 Strength and stability

Sand-cement mortar containing the product can provide a bond between brick slips and prepared concrete, sufficiently strong to resist the loads likely to be imposed in service. The mortars have movement characteristics similar to traditional sand-cement mortars and dense concrete.

7 Properties in relation to fire

The product is an aqueous emulsion and therefore presents no fire hazard during preparation and mixing.

8 Maintenance

No maintenance is required for this product.

9 Durability

Sand-cement mortar containing the product has similar or superior performance characteristics to those of normal sand-cement mortar, is not significantly affected by frost action and will be more durable than an equivalent unmodified sand-cement mortar.

Installation

10 General

10.1 Ronafix Brick Slip Adhesive Mortar Admixture can be used in all conditions normal to sand-cement screed work, using similar techniques.

10.2 The Certificate holder maintains a comprehensive design service and manufactures a range of factory batched pre-bagged Ronafix mortars based on the mix detailed in section 12.3. Each bag of Ronafix mortar is supplied to site with a pre-diluted bottle of the Ronafix product. It is recommended that their advice is sought when any doubt exists as to the correct mix.

10.3 It is recommended that the Certificate holder is consulted regarding the on-site use of the mortar and if necessary makes periodic checks to ensure that the correct procedures are being followed.

11 Preparation

11.1 Brick slips may be of fired clay or calcium silicate. The surface of the slips should provide some mechanical key and it is recommended that smooth, hard materials, particularly calcium silicate, be provided with moulded features on the back face. Care should be taken to ensure that brick slips are free of dust, particularly if they have been cut. The manufacturer of the brick slips should be consulted regarding the suitability, durability and frost resistance of their products.

11.2 It is important that areas intended to receive the product are adequately prepared. Concrete surfaces must provide a strong mechanical key either by having suitable ribs formed during casting or by removing the laitance. This may be achieved by using a set retarder and thoroughly brushing and washing the surface or by scabbling or other means of mechanical removal.

11.3 All surfaces to be bonded must be cleaned of dust and other contamination such as mould oil. Concrete surfaces should not be painted with a bituminous damp-proofing.

12 Mixing

12.1 The mortar constituents are mixed in a pan type force action mixer; an ordinary drum type mixer should not be used.

12.2 Aggregates should be clean and dry with a sharp texture and depending on the required thickness, comply with the requirements of a fine aggregate 0/2 or 0/4 in accordance with BS EN 12620 : 2002. Allowance must be made for moisture in damp aggregates and the amount of water added to the mix adjusted accordingly.

12.3 A typical mix for brick slip bonding is given. The mix is based on dry aggregate;

Portland cement (kg)	— 50
Fine aggregate 0/2 or 0/4 (kg)	— 125
Ronafix (litres)	— 14
Water (litres)	— 4[1]

(1) Due to the differing moisture content and grading of sands available on site, the quantity of water shown in the mix designs can only be taken as approximate. The quantity of water must be kept to the minimum compatible with workability and compaction.

12.4 The mortar will remain workable for 40 to 50 minutes, depending on ambient conditions. A mix must not be re-gauged once it has begun to stiffen.

13 Application

13.1 Application must be strictly in accordance with the Certificate holder's instructions.

13.2 Mixed mortar can be applied in temperatures between 5°C and 25°C.

13.3 All surfaces to be bonded, including the backs of the brick slips, are first dampened and then brush-coated with slurry primer mixed in the proportions of one part cement to one part Ronafix. The mortar is applied while the slurry primer is still wet/tacky. If drying of the slurry primer occurs, the surface should be cleaned and a slurry primer coat re-applied.

13.4 The mixed mortar is applied by 'buttering' the back of each brick slip with sufficient mortar to give a mortar thickness of between 6 mm and 12 mm and firmly applying the slip to the primed concrete surface. Periodic checks should be made to ensure that complete contact is being obtained at the bonded surfaces.

13.5 Where brick slips abut brick infill panels, bricks must be supported by at least two-thirds of their width and due consideration must be made of the depth of both the bricks and the brick slips.

13.6 Temporary support must be provided to prevent slipping of the brick slips where the bottom course is unsupported.

13.7 Movement joints must be provided at a maximum spacing of 5 metres horizontally; at storey heights, at structural joints and where slips abut concrete frames or conventional brickwork. Joints must extend through the mortar bed and be filled within 12 mm of the face with a compressible filler strip such as foamed polyethylene. The remaining 12 mm is filled with a flexible sealant such as a two-part polysulfide sealant. The sealant manufacturer should be consulted regarding the suitability and installation their product.

13.8 Joints between brick slips should be pointed with a conventional sand-cement mortar once the bonding mortar has set, normally at least 24 hours after the mortar has been applied.

Technical Investigations

14 Tests

14.1 As part of the assessment resulting in the issue of the original Certificate:

Tests were carried out to investigate:

- strength of bond to brick slips and concrete
- resistance to the effects of temperature cycling
- resistance to freeze/thaw

Independent test reports relating to the following were examined:

- resistance to the effects of water immersion
- resistance to freeze-thaw cycling
- resistance to temperature cycling.

14.2 As part of the assessment resulting in the issue of the previous Certificate, tests were carried out to assess the maintenance of product quality and to re-examine the bond strength to concrete.

15 Investigations

15.1 A re-examination was made of the data and investigations on which the previous Certificates were based. The conclusions drawn from the original data remain valid.

15.2 Regular factory inspections have been carried out to ensure that quality is being maintained.

15.3 A user survey was conducted to evaluate performance in use.

Bibliography

BS 882 : 1983 *Specification for aggregates from natural sources for concrete*

BS EN 197-1 : 2000 *Cement — Composition, specifications and conformity criteria for common cements*

BS EN 12620 : 2002 *Aggregates for concrete*

Conditions of Certification

16 Conditions

16.1 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.

16.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

16.3 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.

16.4 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.

16.5 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.

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