

Triton Chemical Manufacturing Co Ltd

Unit 3-5 Crayford Commercial Centre
Greyhound Way
Crayford
Kent DA1 4HF

Tel: 01322 318830 Fax: 01322 524017
e-mail: info@tritonsystems.co.uk
website: www.tritonsystems.co.uk



Agrément Certificate
95/3210
Product Sheet 1

TRITON CHEMICAL DAMP-PROOFING SYSTEMS

TRI-CREAM

This Agrément Certificate Product Sheet⁽¹⁾ relates to Tri-Cream, a silane/siloxane emulsion cream for forming a damp-proof course (dpc) in existing 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

Effectiveness against rising damp — when installed into suitable substrates in accordance with BS 6576 : 2005, the product forms an effective barrier against rising damp in existing walls (see section 6).

Drying time — after treatment, a 230 mm solid brick wall previously affected by rising damp should normally dry out in 6 to 12 months (see section 7).

Durability — the product will remain effective against rising damp for at least 20 years (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

A handwritten signature in black ink, appearing to read 'Simon Wroe'.

A handwritten signature in black ink, appearing to read 'Claire Curtis-Thomas'.

Date of First issue: 19 November 2013

Simon Wroe
Head of Approvals — Materials

Claire Curtis-Thomas
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

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.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
fax: 01923 665301
e-mail: mail@bba.star.co.uk
website: www.bbacerts.co.uk

©2013

Regulations

The Building Regulations 2010 (England and Wales) (as amended)



In the opinion of the BBA, the use of Tri-Cream in an existing building is not subject to these Regulations, but action to satisfy Requirement C2(a) and Regulation 7 may be necessary for a 'Material change of use' as defined in Regulation 5(a) (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):

Requirement:	C2(a)	Resistance to moisture
Comment:		The product satisfies the BBA rising damp test and adequately resists the passage of moisture. See section 6 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The product is acceptable. See section 9 and the <i>Installation</i> part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)



In the opinion of the BBA, the use of Tri-Cream in an existing building is not subject to these Regulations, but action to satisfy the Regulations and related Mandatory Standards below may be necessary for a 'Conversion' as defined in Regulation 4 (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):

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The product can contribute to a construction satisfying this Regulation. See section 9 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.3	Flooding and ground water
Standard:	3.4	Moisture from the ground
Comment:		The product satisfies the BBA rising damp test and adequately resists the passage of moisture and can contribute to satisfying these Standards, with reference to clauses 3.3.1 ⁽¹⁾⁽²⁾ , 3.4.1 ⁽¹⁾⁽²⁾ and 3.4.5 ⁽¹⁾⁽²⁾ . See section 6 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The product 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 this 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



In the opinion of the BBA, the use of the Tri-Cream in an existing building is not controlled by these Regulations, but action to satisfy Regulations 23(a)(i)(ii)(iii)(iv) and 28(a) may be necessary for a 'Material change of use' under Regulation 8 (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):

Regulation:	23(a)(b)(i)	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 9 and the <i>Installation</i> part of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		The product satisfies the BBA rising damp test and adequately resists the passage of moisture. See section 6 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: 3 *Delivery and site handling* (3.1 and 3.3) of this Certificate.

Additional Information

NHBC Standards 2013

NHBC accepts the use of Tri-Cream, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 5.1 *Substructure and ground floors*.

Technical Specification

1 Description

Tri-Cream is a ready-to-use silane/siloxane emulsion cream, used to form a barrier against rising damp where there is no dpc, or where the existing dpc has failed.

2 Manufacture

2.1 The product is manufactured in a controlled batch blending process.

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 product is supplied in 1 litre cartridges and 5 litre containers.

3.2 The product should be stored in a cool, dry place and protected from frost.

3.3 The product is not classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP4)/Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) 2009*.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Tri-Cream.

Design Considerations

4 Use

4.1 Tri-Cream is satisfactory for use to form a damp-proof course in accordance with BS 6576 : 2005 in existing:

- solid walls of brickwork, blockwork or natural stone (including flint), up to 600 mm thick
- conventional cavity walls, or
- walls of rubble-filled construction of any thickness.

4.2 The installation process involves delivering a set amount of the product into a series of holes drilled into the mortar course, and the subsequent replastering.

4.3 Replastering is necessary to retain salts in the body of the wall to prevent damage to subsequent redecoration. This must be carried out in accordance with the Trimix Replastering Specification (see Product Sheet 4 of this Certificate).

5 Practicability of installation

The product is designed to be installed only by installers who have been trained and approved by the Certificate holder.

6 Effectiveness against rising damp



When installed in the substrates defined in section 4.1, in accordance with BS 6576 : 2005, the product forms an effective barrier against rising damp.

7 Drying time

After treatment, a 230 mm thick solid brick wall previously affected by rising damp should normally dry in 6 to 12 months provided normal heating is used during the winter months. A thicker wall may take longer. Where hygroscopic salts are present, the wall may not dry completely but the replastering system will prevent damage to internal decorations.

8 Maintenance

The product does not require maintenance.

9 Durability



Excluding use in new repair work (where highly-alkaline mortars are present), the process is expected to remain effective for at least 20 years.

Installation

10 General

10.1 Installation of Tri-Cream is carried out by the Certificate holder's approved contractors in accordance with BS 6576 : 2005 and The Property Care Association *Code of Practice for Installation of Remedial Damp-proof Courses in Masonry Walls*.

10.2 Replastering is necessary to prevent damage to subsequent redecoration. To avoid split responsibility, this should be conducted by the approved contractor or its approved agent.

10.3 The original survey may have identified other possible causes of dampness, and measures to rectify these must be taken as necessary.

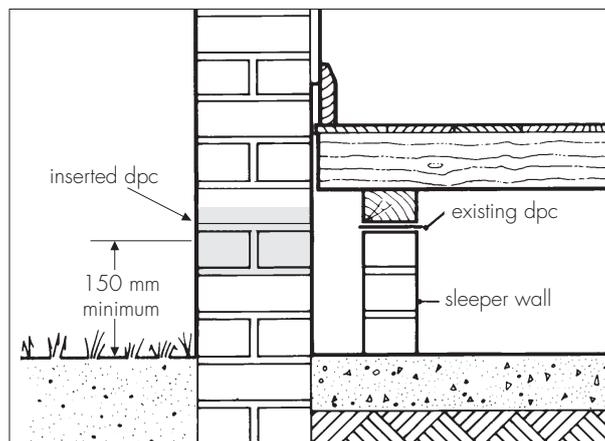
11 Precautions

Tri-Cream is water-based and presents no flammability hazards.

12 Timber floor — inspection, preparation and repair

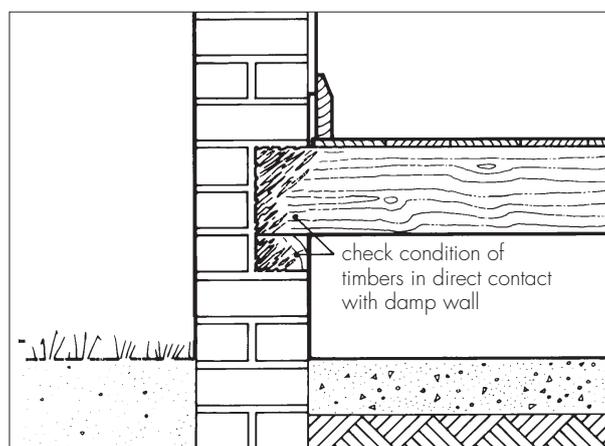
12.1 Where a suspended timber floor is independently supported on sleeper walls, with an effective dpc and showing no signs of dampness, these need not be treated (see Figure 1).

Figure 1 Suspended timber floor on sleeper wall



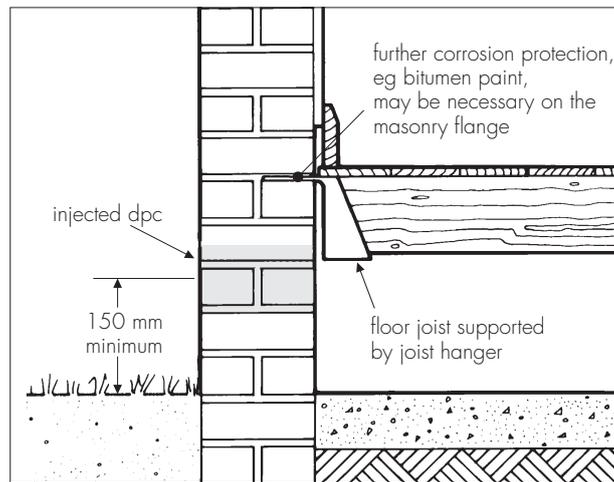
12.2 Where a suspended timber floor is supported on joists and/or a wall plate bearing on or embedded in the wall, there is a possibility of decay, particularly where concealed timbers are in contact with the damp wall. The condition of these timbers should be ascertained and remedial action taken if necessary (see Figure 2).

Figure 2 Check embedded timber for decay



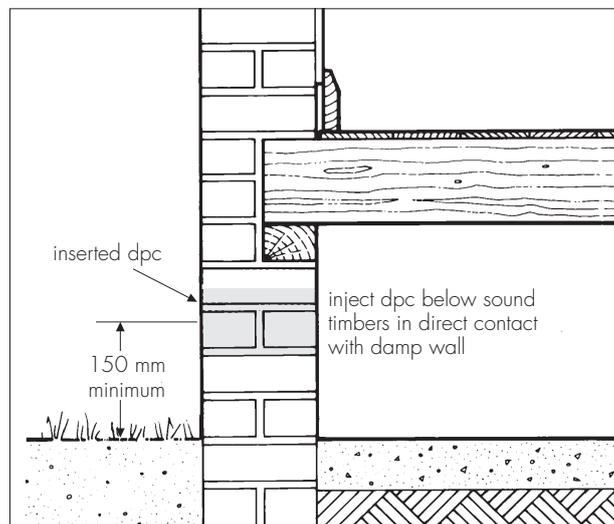
12.3 If damage is limited to the joist ends, the floors may be re-formed, using sleeper walls or joist-hangers, to isolate the timbers from the damp wall (see Figure 3).

Figure 3 Isolation of timber joists from damp wall



12.4 If the timbers are sound, the existing floor may be retained provided the dpc is formed below the timber joists and/or wall plate (see Figure 4).

Figure 4 Inject dpc below wall plate



13 Preparation

13.1 The course to be injected is chosen so that the position of the horizontal dpc complies, as far as is practicable, with the recommendations of BS 6576 : 2005, clause 8.3 (see section 12.4 of this Certificate).

13.2 Internal walls on solid floors are treated as close to the floor as possible.

13.3 Complementary vertical dpc's are positioned, where necessary, to isolate treated walls from the effects of rising damp in adjoining walls or to maintain continuity between horizontal dpc's at different levels.

13.4 Internal plastering which may be affected by hygroscopic salts is removed from the area to be treated to a height of 300 mm above the maximum level of the rising damp. Internal skirtings and flooring are also removed, as necessary, to expose the area for treatment. Externally, the proposed dpc line is exposed, where necessary, by removing any facing material.

14 Procedure

14.1 Untreated walls are isolated by the installation of a vertical dpc throughout the thickness of the wall.

14.2 Particular care is taken to avoid bridging the dpc, either internally or externally. Where external rendering has been removed, it is restored, ending in a bellcasting above the injected dpc.

14.3 The original survey may have identified other possible causes of dampness, and measures to rectify these are taken as necessary.

14.4 Holes 12 mm in diameter are drilled at intervals of 120 mm or less along the selected mortar course, to depths for various wall thicknesses as shown in Table 1.

Table 1 Depth of hole required/application rate

	Wall thickness (mm) ⁽¹⁾			
	115	230	345	460
Drill hole depth (mm)	100	210	320	430
Application rate per 10 m of wall length (litres) ⁽²⁾	0.9	1.9	2.9	3.9

(1) For thicker walls the depth of hole should be to within 40 mm of the opposite face.

(2) Application rates for rubble, porous or highly-absorbent masonry may vary.

14.5 Solid walls of brick or stone should be drilled/treated from one side only in a single operation. The selected mortar course is drilled at the prescribed centres to the appropriate depth (see Table 1). Where this is not possible advice should be sought from the Certificate holder.

14.6 For preference, cavity walls should be treated from both sides but, if the thickness of the individual leaves permits, may be treated from one side. When undertaking treatment from one side, the drill must pass completely through the selected mortar course, then across the cavity and to a depth of 100 mm in the other leaf. The cavity must be clear before treatment.

14.7 If possible, in random stone and rubble infill walls, the mortar course is followed at the appropriate selected level, or drillings may be made into porous stone. Where the variable thickness of stone walls and the possibility of rubble infill dropping and blocking injection holes causes difficulties, it may be necessary to drill to 50% of the wall thickness, from both sides at a corresponding height. Alternatively, additional holes are drilled adjacent to obstructed holes to ensure that an adequate volume of the product is introduced to the wall.

14.8 The installation process consists of loading the product into the applicator gun or low-pressure pump and inserting the gun delivery tube into the full length of the predrilled hole. Each hole is backfilled fully with the product to within 10 mm of the surface by slowly squeezing the gun trigger. When treating cavity walls from one side it is essential that the holes in each leaf are filled.

14.9 The treated walls are left for a period of at least 14 days to allow initial drying out. Internal plastering is applied in accordance with the details given in Product Sheet 4 of this Certificate.

14.10 Particular care must be taken to avoid bridging the dpc either internally or externally. Where external rendering has been removed, it must be restored, ending in a bellcasting above the injected dpc.

14.11 Holes in the external wall surfaces are plugged with sand/cement mortar coloured to match the existing wall surface, or with plastic plugs.

Technical Investigations

15 Tests

Tests were carried out on Tri-Cream and the results assessed to determine:

- effectiveness against rising damp
- total and active solids content
- specific gravity
- substantivity
- storage stability.

16 Investigations

16.1 The manufacturing process was evaluated, and the raw material specifications, formulation and quality control procedures were established.

16.2 Existing data on the effectiveness of silicone-based products as a chemical dpc were evaluated.

16.3 Existing data on the effectiveness and durability of similar materials used as external surface water repellents were evaluated and an assessment was made of the durability of the installed product.

16.4 A visit was made to a site in progress to assess the practicability of installation.

16.5 A user survey of owners of treated sites was carried out to assess the product's performance in use.

16.6 An assessment was made of the presence of odour and the materials available for replastering.

Bibliography

- BS 3900-A19 : 1998 *Methods of test for paints — Determination of density by the pyknometer method*
- BS 6576 : 2005 *Code of practice for diagnosis of rising damp in walls of buildings and installation of chemical damp-proof courses*
- BS 8481 : 2006 *Design, preparation and application of internal gypsum, cement, cement and lime plastering systems — Specification*
- BS EN 197-1 : 2011 *Cement — Composition, specifications and conformity criteria for common cements*
- BS EN 13139 : 2002 *Aggregates for mortar*
- BS EN 13914-2 : 2005 *Design, preparation and application of external rendering and internal plastering — Design considerations and essential principles for internal plastering*
- BWPDA DP4 *Methods of analysis for Damp-proof Course Fluids*
- MOAT No 39 : 1988 *The assessment of damp-proof course systems for existing buildings*
- Property Care Association COP09/09 *Code of Practice for Installation of Remedial Damp-proof Courses in Masonry Walls*

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.