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Agrément Certificate

97/3363

Product Sheet 2

SAFEGUARD DAMP-PROOF SYSTEMS

SAFEGUARD MICROSILAN

This Agrément Certificate Product Sheet⁽¹⁾ relates to Safeguard Microsilan⁽²⁾, a silicate/siliconate/silane solution for forming a damp-proof course (dpc) in existing walls, and the associated replastering.

(1) Hereinafter referred to as 'Certificate'.

(2) Safeguard Microsilan is a registered trademark.

CERTIFICATION INCLUDES:

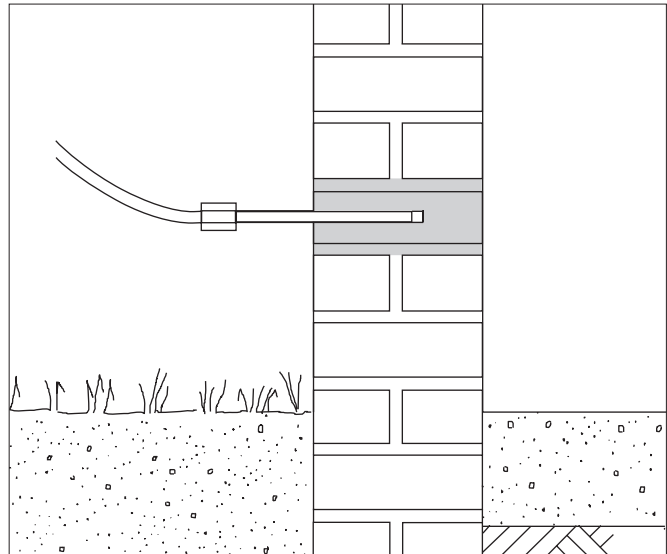
- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Effectiveness against rising damp — when injected 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

Claire Curtis-Thomas

Date of Third issue: 30 August 2018

John Albon — Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

Originally certificated on 5 October 2010

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.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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Regulations

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



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

Regulation:	8(1)	Durability, workmanship and fitness of materials
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 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 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)



In the opinion of the BBA, the use of Safeguard Microsilan in an existing building is not controlled by these Regulations, but action to satisfy Regulations 23 and 28 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 adequately resists the passage of moisture. See section 6 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, 3.4 and 3.5) of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, Safeguard Microsilan, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Section 5.1 *Substructure and ground floors*.

Technical Specification

1 Description

1.1 Safeguard Microsilan is a mixture of potassium methyl siliconate, silicate and silane micro-emulsion in concentrated form.

1.2 The product is also available as Dampcheck Plus, a pre-diluted form of Safeguard Microsilan concentrate.

1.3 The installation process involves the saturation by pressure injection of a selected course of brickwork or mortar, or an equivalent area of blockwork or stone, with the diluted fluid and the subsequent replastering (see the Appendix).

2 Manufacture

2.1 The product is manufactured by controlled 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 operated by the manufacturer are being maintained.

2.3 The management system of Safeguard Europe Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate FM01937).

3 Delivery and site handling

3.1 The injection fluid is produced by diluting the concentrate with clean water at the installer's premises. The concentrate is supplied in polythene containers of 4 litres (standard pack) and 25 litres. The standard pack is made up to a total volume of 20 or 25 litres.

3.2 The product packaging bears the trade name and product description, company contact details, hazard labelling and the BBA logo.

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

3.4 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).

3.5 To protect third parties from contact with the alkaline fluid, the working area must be coned off from the public highway during treatment (for example, when terraced houses abutting the pavement are treated).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Safeguard Microsilan.

Design Considerations

4 Use

4.1 Safeguard Microsilan is used in accordance with BS 6576 : 2005 and The Property Care Association *Code of Practice for Installation of Remedial Damp-proof Courses in Masonry Walls* in existing:

- solid walls of brickwork, blockwork or masonry
- conventional cavity walls
- walls of rubble-filled construction.

4.2 The product provides a barrier against rising damp where there is no dpc or where the existing dpc has failed.

4.3 Where existing plaster is contaminated by salts, replastering is necessary to retain the salts in the body of the wall and prevent damage to subsequent redecoration. This should be carried out in accordance with one of the Certificate holder's Replastering Specifications (see section 12.4, the Appendix, and Product Sheets 4 and 8 of this Certificate).

4.4 Safeguard Microsilan has no effect on expanded polystyrene or bitumen.

5 Practicability of installation

The product should be installed by contractors with experience in the treatment of rising damp using the methods described in this Certificate.

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 out 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

As the product is confined within the wall and has suitable durability (see section 9), maintenance is not required.

9 Durability



The product will remain effective for at least 20 years.

Installation

10 General

10.1 Installation of Safeguard Microsilan after dilution is by pressure injection and must be carried out by the Certificate holder's approved installers in accordance with BS 6576 : 2005 and the requirements of The Property Care Association *Code of Practice for Installation of Remedial Damp-proof Courses in Masonry Walls*.

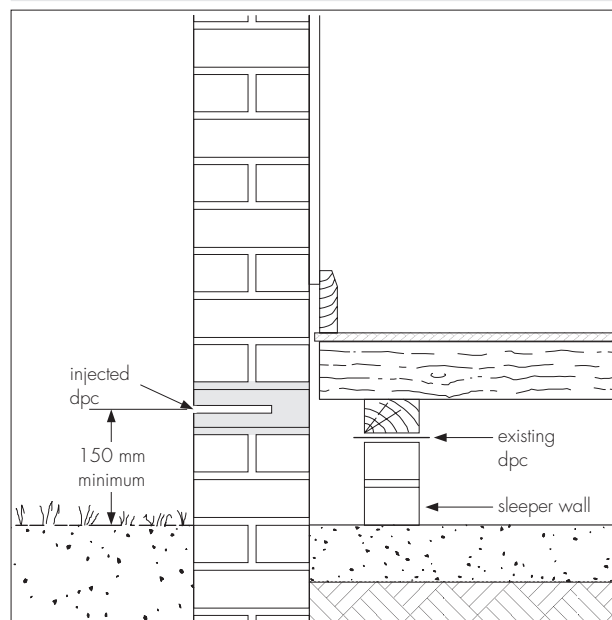
10.2 The original survey may have identified other possible causes of dampness, and measures to rectify these must be taken as necessary.

10.3 To avoid split responsibility, any replastering carried out should be conducted by the installer or its approved agent.

11 Timber floor — inspection, preparation and repair

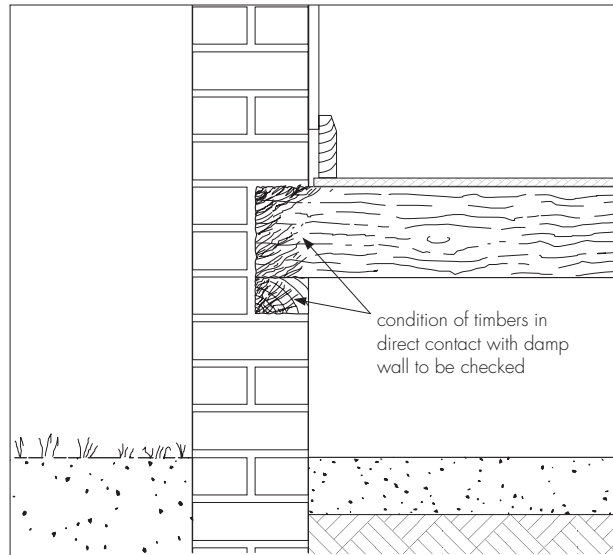
11.1 Where a suspended timber floor is independently supported on sleeper walls, with an effective dpc and showing no signs of dampness, these need not be treated (see Figure 1).

Figure 1 Suspended timber floor on sleeper wall



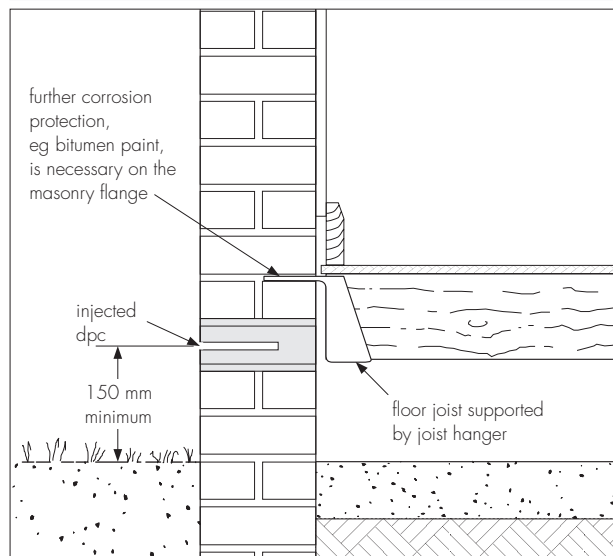
11.2 Where a suspended timber floor is supported on joists and/or a wall plate bearing on, or embedded, in the wall, there is a possibility of decay, particularly where concealed timbers are in contact with the damp wall. The condition of these timbers should be ascertained and remedial action taken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

Figure 2 Checking embedded timbers for decay



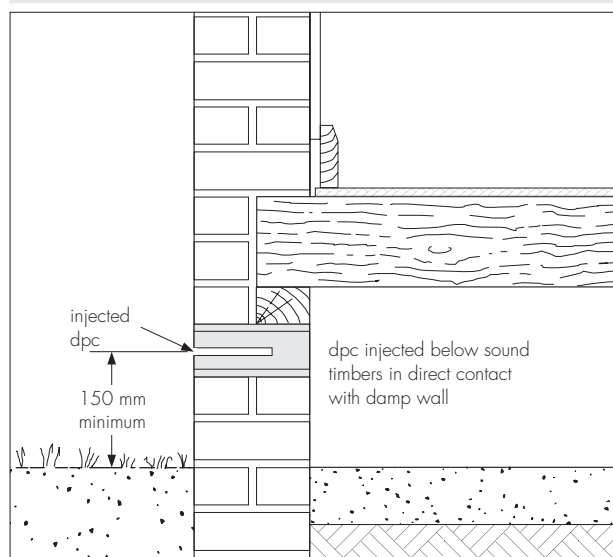
11.3 If damage is limited to the joist ends, the floors may be re-formed, using sleeper walls or joist-hangers, to isolate the timbers from the damp wall (see Figure 3).

Figure 3 Isolation of timber joists from damp wall



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

Figure 4 Injection of dpc below wall plate



12 Preparation

12.1 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 11.4 of this Certificate).

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

12.3 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.

12.4 Internal skirting and flooring are removed, as necessary, to expose the area for treatment. Externally, the proposed dpc line is exposed, where necessary, by removing any facing material. Internal plastering affected by hygroscopic salts is removed from the area to be treated to a height of at least 300 mm above the maximum level of the rising damp (subject to a 1 m minimum height). Where the plaster appears to be in sound condition, the extent of plaster to be removed may be minimised by delaying the removal of contaminated plaster until the drying period is complete, at which point the plaster contaminated by hygroscopic salts should be removed and replaced with plaster to one of the Certificate holder's replastering specifications (see the Appendix and Product Sheets 4 and 8 of this Certificate).

12.5 It should be noted that, where the plaster is contaminated and left to dry out for an extended period rather than being replaced at the time of the dpc installation, there is a risk of damage to future decorations.

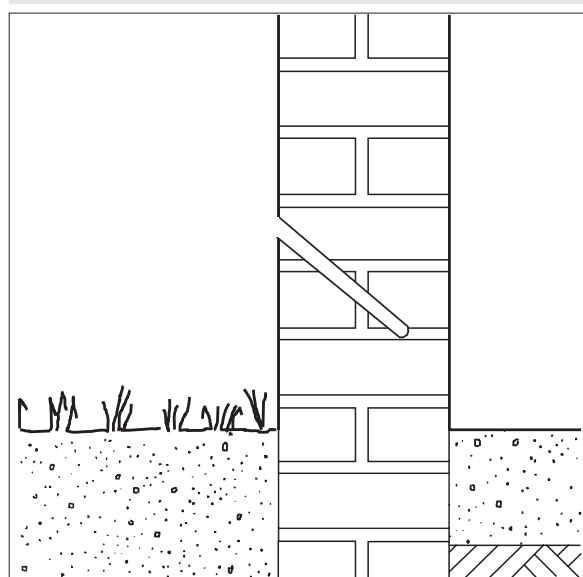
13 Procedure

13.1 Holes may be drilled using a variety of methods (see sections 13.2 to 13.10), but in all cases the final hole depth should be as deep as possible, while leaving at least 40 mm of undisturbed masonry on the opposite face.

Mortar

13.2 Holes from 10 to 16 mm in diameter are drilled to predetermined depths at intervals of between 120 and 150 mm along the selected course, avoiding the perpend. Preferably, holes are drilled horizontally into a mortar bed joint to a depth of at least half, but no more than two-thirds, of the wall's thickness. Alternatively, they may be drilled into the bricks at an angle of depression of 25 to 45° terminating in a mortar bed joint at the level of the required dpc (see Figure 5).

Figure 5 Angled drilling into the mortar course



Brickwork

13.3 Holes from 10 to 16 mm in diameter are drilled to predetermined depths at intervals of between 120 and 150 mm along the selected course. Two holes are drilled in each stretcher and one in each header at a spacing of 120 to 150 mm. If a brick course proves to be too dense to allow adequate penetration of fluid, drilling may be carried out in the adjacent mortar course (see section 13.2). Percussion drills should not be used on half-brick walls.

Solid stone

13.4 In solid or cavity walls of conventional construction in blockwork or stone, the drilling and injection procedure is adjusted to accommodate variations in the density, porosity and structure. For porous stones, such as sandstone, the stone itself may be drilled, whereas for hard, impervious stones (eg flint), the mortar may be drilled. In each case, a procedure is chosen to ensure a continuous unbroken treatment along the length of the wall.

Rubble-fill

13.5 In walls with a rubble-filled cavity, the two masonry leaves are first injected using the techniques described in sections 13.2 to 13.4. The holes in one leaf are then re-drilled to penetrate into the rubble core and additional fluid is injected.

Injection

13.6 The solution is injected at pressures up to 350 kPa for mortar injection and 500 kPa for brickwork. Nozzles fitted with pressure-tight seals are inserted into the drilled holes and injection is continued until complete saturation is achieved and the fluid begins to exude from the substrate. The nozzles are removed and subsequent holes are similarly injected. Generally, for 230 mm thick walls, approximately 2.6 litres of product are used to inject each metre run.

Different wall types

13.7 Walls 115 mm thick are injected from one side only.

13.8 Solid walls 230 mm thick are normally treated from both sides but if access is restricted they may be drilled and injected progressively from one side using a sequence of drilling, injecting, re-drilling to deepen the hole by 100 to 120 mm, and re-injecting.

13.9 Solid walls of greater thickness may be treated from one or both sides. In each case, the progressive injection technique is used.

13.10 Cavity walls are normally treated from both sides, but if the thickness of the individual leaves permits, injection from one side at increasing depths is conducted.

14 Finishing

14.1 Where existing plaster has been removed at the same time as the installation of the remedial dpc, the treated walls should be left for as long as possible (traditionally at least 14 days) to allow initial drying out. Internal plastering is applied in accordance with one of the Certificate holder's replastering specifications (see the Appendix and Product Sheets 4 and 8 of this Certificate).

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 bell casting above the injected dpc.

14.3 Holes in the external wall surfaces are plugged with sand/cement mortar coloured to match the existing wall surface.

Technical Investigations

15 Tests

15.1 Tests were carried out to determine early water repellency.

15.2 An examination of the test data on the following features was carried out on related products:

- effectiveness against rising damp
- substantivity of injection treatment.

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 examination was made of existing data on the effectiveness of silicone-based products as a chemical dpc.

16.3 An assessment was made of the materials available for replastering.

Bibliography

BS 6576 : 2005 + A1 : 2012 *Code of practice for diagnosis of rising damp in walls of buildings and installation of chemical damp-proof courses*

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*

BS 8481 : 2006 *Design, preparation and application of internal gypsum, cement, cement and lime plastering systems — Specification*

BS EN 13139 : 2002 *Aggregates for mortar*

BS EN 13914-2 : 2016 *Design, preparation and application of external rendering and internal plastering — Internal plastering*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

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.

A1 Description

Renderguard Gold is a combined waterproofing, salt retardant and plasticiser additive for use in sand/cement replastering mixes applied after the removal of the existing contaminated plaster and insertion of a remedial dpc.

A2 Delivery and site handling

A2.1 The packaging, shelf-life and storage requirements are given in Table A1.

Table A1 Packaging arrangements, shelf-life and storage requirements

Product	Packaging details	Shelf-life and storage requirements
Renderguard Gold	1, 4 and 25 litre containers	12 months when stored in a dry place. Protect from frost, high temperature and direct sunlight

A2.2 The product should not be swallowed or splashed into the eyes. If splashing occurs, eyes should be washed with copious quantities of clean water and medical attention sought.

A2.3 The product's packaging bears the BBA logo incorporating the number of this Certificate.

A3 Design Considerations

A3.1 Renderguard Gold is an additive for sand/cement mixes and is satisfactory for application to walls of all types of masonry where there has been rising damp and remedial dpc treatment has been conducted.

A3.2 The additive mixes are applied at a thickness of 12 mm using the normal procedures defined in BS 8481 : 2006 and BS EN 13914-2 : 2016, and finished using 3 mm Carlite finish, multifinish or similar.

A3.3 The plaster has good resistance to mechanical damage.

A3.4 Normal methods for fixing and chasing can be used, but the surface should be restored using Renderguard Gold additive sand/cement mix.

A4 Installation

General

A4.1 The standard of installation of the product should comply with BS 8000-0 : 2014.

A4.2 Where existing plaster has been removed at the same time as the installation of the remedial dpc, the treated walls should be left for as long as possible (traditionally at least 14 days) to allow initial drying out before replastering.

Preparation

A4.3 Details such as timber skirting are removed.

A4.4 Mortar joints are raked out to a depth of 15 mm.

A4.5 Timber fixing grounds present in the masonry are removed.

A4.6 If the background offers little suction, a bonding aid may be applied to the surface and the wall replastered. For suitable products, advice can be sought from the Certificate holder.

A4.7 Where masonry is unstable this must be made good prior to the application of the render. Where it is not possible to obtain a proper bond between the wall fabric and render, eg with cob walling, expanded metal lath must be fixed to the wall surface before application.

Mixing

A4.8 The water must be clean and free from oil, dirt or other detrimental chemicals (water suitable for drinking should be used, if available).

First coat

A4.9 A mix of three parts sand to one part cement using gauging water containing Renderguard Gold is prepared⁽¹⁾. The sand should be specified as washed, sharp sand, loam-free, suitably graded for plastering to BS EN 13139 : 2002. The cement should be fresh and free flowing.

(1) Mix one part Renderguard Gold with 24 parts water — a minimum of water is used to ensure a dense coat. Not more than 8 litres should be used per 50 kg of dry mix.

A4.10 The mix is compacted into joints and rendered to give an overall thickness of 12 mm, without over-trowelling. When the cement obtains its first set, the surface is scratched to form a key.

Second coat

A4.11 The mix, as for the first coat but with additive-free water, is applied to a thickness of 12 mm without overtrawelling, giving an overall thickness of 25 mm. This coat should be applied before the first coat has finally set, to obtain a satisfactory adhesion between the coats. The surface should be scratched to form a key for the finishing plaster.

Finish coat

A4.12 The finish coat should be Carlite finish, multi-finish or similar, applied to a thickness of 3 mm. Other finishes are acceptable provided they are porous. The surface must not be polished.

Miscellaneous

A4.13 To prevent any damp within a solid floor being transferred into the soft setting coat, renders and plasterwork extending behind the skirting should not make contact with the floor.

A4.14 Gypsum plaster or lightweight premix plasters must not be used to bond metal angle beads to corners.

A4.15 It should be noted that the walls will take a considerable time to dry out and it is possible that sufficient moisture would ingress into any new joinery to cause fungal decay. Therefore, where conventional timber skirting is to be fixed, this should be cut to size and fully worked, with a minimum of three brush coats of wood preservative applied.

A4.16 Skirting that has been removed but is still sound should have a minimum of two to three coats of a HSE approved fungicide applied to the unpainted surfaces. For suitable products, advice can be sought from the Certificate holder. It is also recommended that the back and bottom of skirting are given two coats of a bituminous paint, or backed with joinery liner.

A4.17 Where practicable, all joinery should be fixed by the use of masonry nails. If not, inert fixing grounds (eg plastic) should preferably be used, but timber may be used provided it is cut to size and fully worked and treated with a suitable HSE-approved timber and masonry fungicide before insertion into the damp masonry (the Certificate holder's Technical Department should be contacted for advice).

A4.18 It is important that the specification is strictly adhered to and not varied in any way. No other additives must be added to the mix, unless approved by the Certificate holder. Lightweight gypsum premix backing or bonding plasters (eg Carlite) must not be used.