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Agrément Certificate  
**02/3976**  
Product Sheet 1

### REMEDIAL DAMP-PROOF SYSTEM

### DRYWALL SILANE DIFFUSION DPC SYSTEM

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the DryWall Silane Diffusion DPC System, for use in forming a damp-proof course in existing walls.

#### 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

**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 5).

**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 6).

**Durability** — the DryWall DPC System will remain effective against rising damp for at least 20 years (see section 8).

The BBA has awarded this Agrément Certificate to the company named above for the system described herein. The system 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

Simon Wroe  
Head of Approvals — Materials

Greg Cooper  
Chief Executive

Date of First issue: 3 June 2009

Originally certificated on 24 December 2002

*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](http://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

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



In the opinion of the BBA, the use of the DryWall Silane Diffusion DPC System in an existing building is not subject to these Regulations, but action to satisfy Requirement C2 and Regulation 7 may be necessary for a 'Material change of use' as defined in Regulation 5(a).

Requirement:	C2(a)	Resistance to moisture
Comment:		The product satisfies the BBA rising damp test and adequately resists the passage of moisture. See section 5 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 8 and the <i>Installation</i> part of this Certificate.

## The Building (Scotland) Regulations 2004 (as amended)



In the opinion of the BBA, the DryWall Silane Diffusion DPC System, 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.

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The product can contribute to a construction satisfying this Regulation. See sections 7 and 8 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.4	Moisture from the ground
Standard:	3.10	Precipitation
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 3.4.1 <sup>(1)(2)</sup> , 3.4.5 <sup>(1)(2)</sup> and 3.10 <sup>(1)(2)</sup> respectively. See section 5 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for this product under Regulation 9 also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).

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



In the opinion of the BBA, the use of the DryWall Silane Diffusion DPC System in an existing building is not controlled by these Regulations, but action to satisfy Regulations B2, B3 and C4 may be necessary for a 'Material change of use' under Regulation A9.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 8 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The product does not normally require maintenance. See section 7 of this Certificate.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		The product satisfies the BBA rising damp test and adequately resists the passage of moisture. See section 5 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 and 2.3).

# Non-regulatory Information

## NHBC Standards 2008

NHBC accepts the use of the DryWall Silane Diffusion DPC System, when installed and used in accordance with this Certificate, in relation to *NHBC Standards for conversion and renovation*.

## Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, the DryWall Silane Diffusion DPC System, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual, Section 6 Additional guidance for conversions*.

# Technical Specification

## 1 Description

1.1 The DryWall Silane Diffusion DPC System is a concentrated silane/siloxane cream for insertion by a low-pressure application pump or gun.

1.2 The product is manufactured by a batch blending process. Quality control is exercised over raw materials, during production and on the final product.

## 2 Delivery and site handling

2.1 The product is supplied in 600 ml cartridges and should be stored in a cool, dry place and protected from frost.

2.2 The product is not classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP3)*.

# Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the DryWall Silane Diffusion DPC System.

# Design Considerations

## 3 Use

3.1 The DryWall Silane Diffusion DPC System is satisfactory for use in existing walls as a remedial damp-proof course where there is no damp-proof course or where the damp-proof course has failed.

3.2 The product is for use in accordance with BS 6576 : 2005 in existing:

- solid walls of brickwork, blockwork or masonry, up to 600 mm thick
- walls of conventional cavity construction, or
- walls of rubble-filled construction.

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

3.4 Replastering is necessary to retain salts in the body of the wall and prevent damage to subsequent redecoration. Reference should be made to the Appendix for details of the replastering specification.

## 4 Practicability of installation

The product should only be installed by damp-proofing installers who have been trained and approved by the Certificate holder.

## 5 Effectiveness against rising damp



When installed in the substrates defined in section 3.2, in accordance with BS 6576 : 2005, the product forms an effective barrier against rising damp.

## 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, 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 out completely but the replastering system will prevent damage to internal decorations.

## 7 Maintenance



As the product is incorporated within a wall structure and has suitable durability, maintenance is not required.

## 8 Durability



Silicone masonry surface water repellents for masonry are known to be effective for 12 years. These products are applied to the surface of a wall, but a dpc application saturates the wall in depth. Therefore, the system will remain effective against rising damp for at least 20 years.

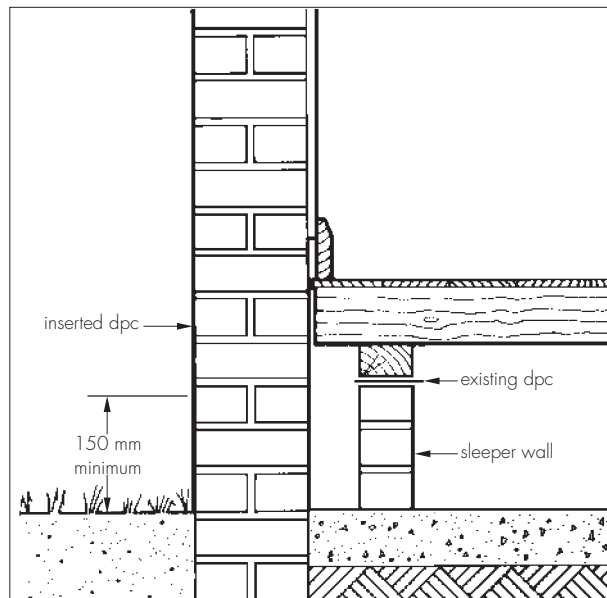
## 9 General

Installation of the DryWall Silane Diffusion DPC System should be carried out in accordance with BS 6576 : 2005, the Property Care Association Code of Practice COP02, and this Certificate.

## 10 Action with respect to flooring timbers

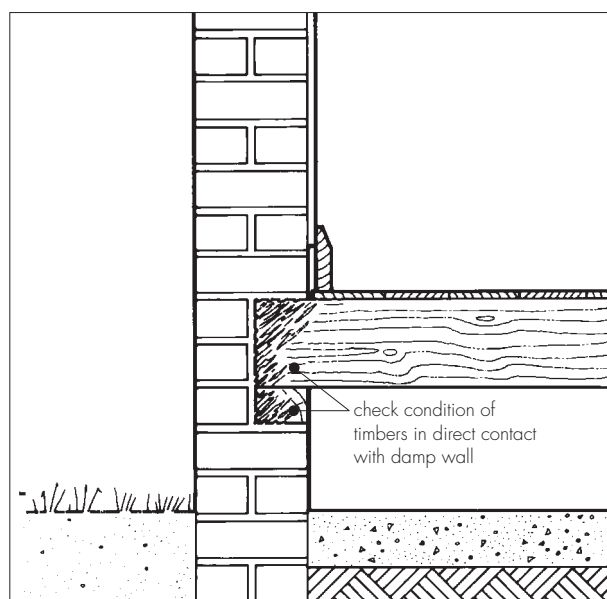
10.1 Where a suspended timber floor is independently supported on sleeper walls, with an effective damp-proof course and showing no signs of dampness, these need not be treated (see Figure 1).

Figure 1 Suspended timber floor on sleeper wall



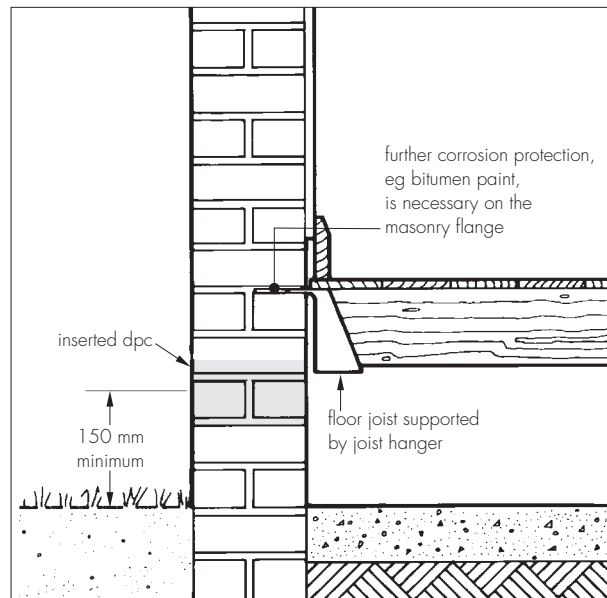
10.2 Where a suspended timber floor is supported on joists and/or a wall plate bearing on, or embedded in, the wall, there is a possibility of decay, particularly where concealed timbers are in contact with the damp wall. The condition of these timbers should be ascertained and remedial action taken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

Figure 2 Checking embedded timber for decay



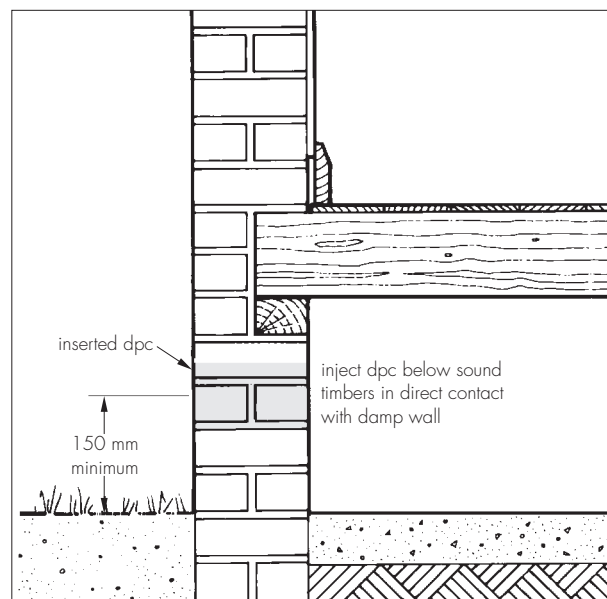
10.3 If damage is limited to the joist ends, the floors may be re-formed, using sleeper walls or joist-hangers, to isolate the timbers from the damp wall (see Figure 3).

Figure 3 Isolation of timber joists from damp wall



10.4 If the timbers are sound, the existing floor may be retained provided the inserted damp-proof course is formed below the timber joists and/or wall plate (see Figure 4).

Figure 4 Injected dpc below wall plate



## 11 Preparation

11.1 The course to be treated should be chosen so that the position of the horizontal damp-proof course complies, as far as practicable, with the recommendations of BS 6576 : 2005.

11.2 Internal walls on solid floors should be treated as close to the floor as possible.

11.3 Complementary vertical damp-proof courses should be positioned, where necessary, to isolate treated walls from the effects of rising damp in adjoining walls or to maintain continuity between horizontal damp-proof courses at different levels.

11.4 Internal plastering affected by hygroscopic salts should be removed from the area to be treated to a minimum height of one metre above the dpc level or 300 mm above the salt line (whichever is higher). Internal skirtings and flooring should be also removed, as necessary, to expose the area for treatment. Externally, the proposed damp-proof course line should be exposed, where necessary, by removing any facing material.

## 12 Procedure

12.1 Untreated walls should be isolated by the insertion of a vertical dpc throughout the thickness of the wall.

12.2 Particular care should be taken to avoid bridging the damp-proof course, either internally or externally. Where external rendering has been removed, it should be restored, ending in a bellcasting above the injected damp-proof course.

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

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

Wall thickness <sup>(1)</sup> (mm)	115	230	345	460
Depth of hole (mm)	90	190	310	430

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

12.5 Solid walls of brick or stone should be drilled and 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.

12.6 Cavity walls should, preferably, 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 90 mm in the other leaf. The cavity must be clear before treatment.

12.7 If possible, in random stone and rubble infill walls, the mortar course should be 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 should be drilled adjacent to obstructed holes to ensure that an adequate volume of the product is introduced to the wall.

12.8 The treatment 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 pre-drilled 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.

12.9 Holes in the external wall surfaces should be plugged with sand/cement mortar coloured to match the existing wall surface or with plastic plugs.

12.10 The treated walls should be left for a period of at least 14 days to allow initial drying out. Internal plastering should be applied using a renovating plaster as described in the Appendix.

## Technical Investigations

### 13 Tests

Tests were carried out by the BBA to determine:

- effectiveness against rising damp, generally to MOAT No 39 : 1988, Method 4.3.1.4
- total and active solids content to a BWPDA Damp-proofing DP4, Method 2.1
- specific gravity to BS 3900-A19 : 1998
- substantivity to MOAT No 39, Method 4.3.2
- storage stability.

### 14 Investigations

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

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

14.3 Existing data on the effectiveness and durability of similar materials used as external surface water repellents were examined and an assessment was made of the durability of the injection material.

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

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

14.6 Assessments were made of the presence of odour.

## 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*

MOAT No 39 : 1988 *The assessment of damp-proof course systems for existing buildings*

BWPDA DP4 *Methods of analysis for Damp-proof Course Fluids*

Property Care Association COPO2 *Code of Practice for Installation of Remedial Damp-proof Courses in Masonry Walls*

## 15 Conditions

15.1 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.

15.2 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.

15.3 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.

15.4 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.

15.5 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.