



## Safeguard Chemicals Ltd

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**Agrément  
Certificate  
No 97/3363**

Designated by Government  
to issue  
European Technical  
Approvals

## SAFEGUARD CHEMICAL DAMP-PROOF SYSTEMS

Couche d'étanchéité pour murs par injection chimique  
Feuchtigkeitssperre im Wandbereich

## Product




• THIS CERTIFICATE RELATES TO THE SAFEGUARD CHEMICAL DAMP-PROOF SYSTEMS, A RANGE OF PRODUCTS FOR FORMING A DAMP-PROOF COURSE IN EXISTING WALLS, AND THE ASSOCIATED REPLASTERING.

- Installation of the damp-proofing system is carried out by Safeguard Chemicals Ltd's approved contractors in accordance with BS 6576 : 1985.
- Replastering is necessary to prevent damage to subsequent redecoration. To avoid split responsibility, this should be conducted by the installer or his approved agent.

These Front Sheets must be read in conjunction with the accompanying Detail Sheets, which provide information specific to the damp-proofing materials and the replastering specification.

## Building Regulations — Detail Sheet 1

### 1 The Building Regulations 1991 (as amended 1994) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of remedial damp-proofing (walls) with the Building Regulations. In the opinion of the BBA, the use of the Safeguard Chemical Damp-proof Systems in an existing building is not subject to these Regulations, but action to satisfy Requirement C4 and Regulation 7 may be necessary for a 'Material change of use' as defined in Regulation 5(a).

Requirement: C4	Resistance to weather and ground moisture
Comment:	The damp-proofing products satisfy the BBA rising damp test and adequately resist the passage of moisture.
Requirement: Regulation 7	Materials and workmanship
Comment:	The products are acceptable. See section 7.1 of these Front Sheets.

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## 2 The Building Standards (Scotland) Regulations 1990 (as amended)



In the opinion of the BBA, the Safeguard Chemical Damp-proof Systems, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and Technical Standards listed below.

Regulation:	10	Fitness of materials
Standard:	B2.1	Selection and use of materials and components
Comment:		The products are acceptable.
Regulation:	17	Preparation of sites and resistance to moisture
Standard:	G2.6	Resistance to moisture from the ground
Comment:		The damp-proofing products satisfy the BBA rising damp test and adequately resist the passage of moisture.

## 3 The Building Regulations (Northern Ireland) 1994 (as amended 1995)



In the opinion of the BBA, the use of the Safeguard Chemical Damp-proof Systems in an existing building is not controlled by these Regulations, but action to satisfy Regulations B2 and C5 may be necessary for a 'Material change of use' under Regulation A9.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable. The products are odourless and do not give off harmful vapours. See section 7.1 of these Front Sheets.
Regulation:	C5	Resistance to ground moisture and weather
Comment:		The damp-proofing products satisfy the BBA rising damp test and adequately resist the passage of moisture.

## Technical Specification

### 4 Description

4.1 The Safeguard Chemical Damp-proof Systems consist of solutions injected into existing walls to form a damp-proof course, and the subsequent replastering.

4.2 The products are described in the accompanying Detail Sheets.

## Design Data

### 5 General

5.1 The Safeguard Chemical Damp-proof Systems are used in existing:

- (1) solid walls of brickwork, blockwork or masonry, up to 600 mm thick
- (2) conventional cavity walls, or
- (3) walls of rubble-filled construction of any thickness

to provide a barrier against rising damp where there is no damp-proof course or where the existing damp-proof course has failed.

5.2 Replastering is necessary to retain salts in the body of the wall to prevent damage to subsequent redecoration. This should be carried out according

to the Safeguard Chemicals' Replastering Specification (see Detail Sheet 4).

### 6 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.

### 7 Durability



7.1 The processes are durable and are expected to remain effective for at least 20 years.

7.2 Safeguard Chemicals' replastering specifications are durable and equivalent to traditional plastering to BS 5492 : 1990.

## Installation

### 8 General

Installation of the Safeguard Chemical Damp-proof Systems is carried out in accordance with BS 6576 : 1985 by a Safeguard Chemicals' approved installer.

## 9 Action with respect to flooring timbers

9.1 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).

9.2 Where a suspended timber floor is supported on joists and/or a wallplate 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).

9.3 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).

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

Figure 1 Suspended timber floor on sleeper wall

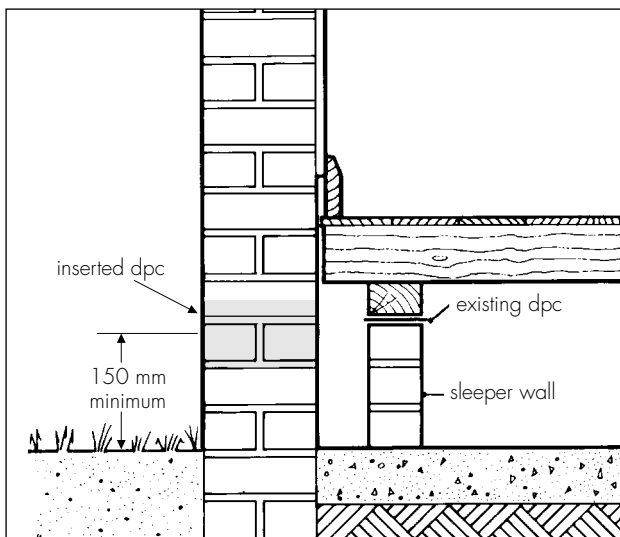


Figure 2 Check embedded timber for decay

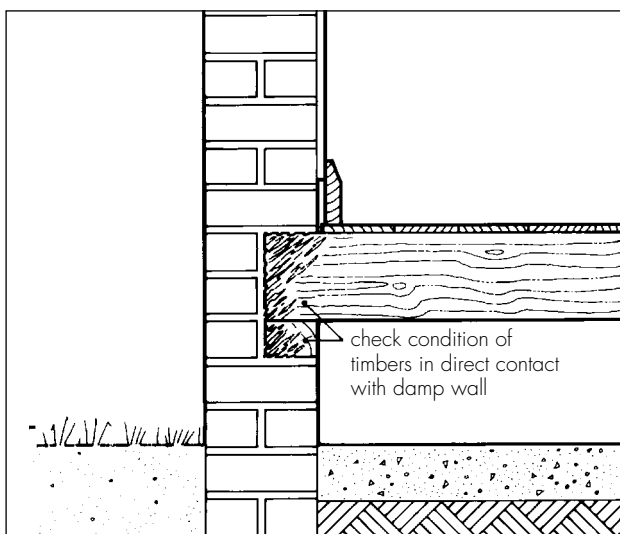


Figure 3 Isolation of timber joists from damp wall

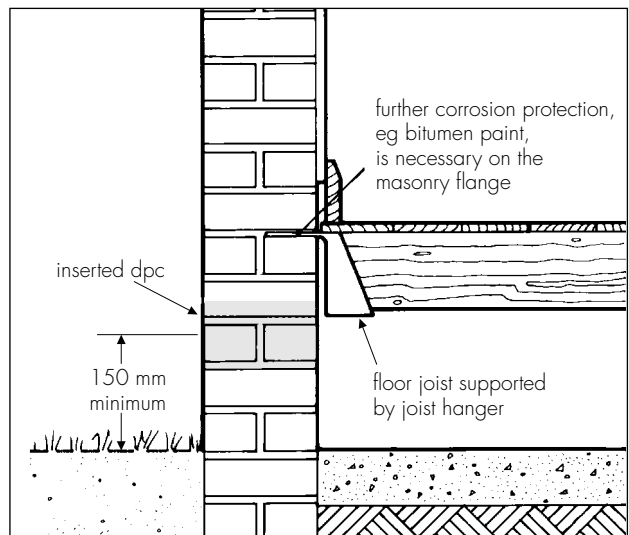
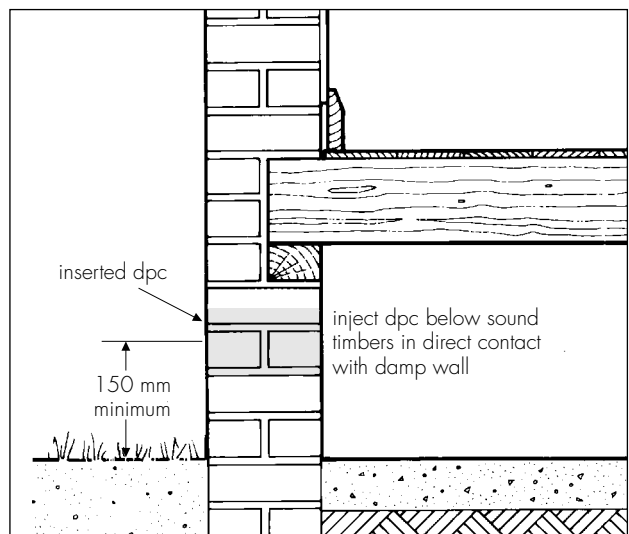


Figure 4 Inject dpc below wallplate



## 10 Preparation

10.1 The course to be injected is chosen so that the position of the horizontal damp-proof course complies, as far as is practicable, with the recommendations of BS 6576 : 1985, clauses 4.3 and 4.4 (see section 9.4 of these Front Sheets).

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

10.3 Complementary vertical damp-proof courses are 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.

10.4 Internal plastering 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 skirting, flooring, etc is also removed, as necessary, to expose the area for treatment. Externally, the proposed damp-proof course line is exposed, where necessary, by removing any facing material.

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## 11 Procedure

The installation of the various damp-proofing fluids is summarised in the accompanying Detail Sheets.

## 12 General

### Untreated walls

12.1 Untreated walls are isolated by the injection of a vertical dpc throughout the thickness of the wall. Vertical dpc's are also used to maintain continuity between horizontal dpc's at different levels.

### Treated walls

12.2 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 Detail Sheet 4 of this Certificate.

### Bridging the damp-proof course

12.3 Particular care is taken to avoid bridging the damp-proof course, either internally or externally. Where external rendering has been removed, it is restored, ending in a bell casting above the injected damp-proof course.

### External wall finish

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

### Other sources of dampness

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

## Technical Investigations

The following is a summary of the technical investigations carried out on the Safeguard Chemical Damp-proof Systems.

## 13 Investigations

13.1 The manufacturing processes were examined, and the raw material specifications, formulations and quality control procedures were established.

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

13.3 An examination was made of data on the effectiveness and durability of similar materials used as external surface water repellents, and an assessment was made of the durability of the injection system.

13.4 Visits were made to sites to assess the practicability of installation.

13.5 Assessments were made of the presence of odour and the materials available for replastering.

13.6 Other specific tests and investigations on the products are detailed in the *Technical Investigations* part of the appropriate Detail Sheets.

## Additional Information

The management systems of Safeguard Chemicals Ltd have been assessed and registered as meeting the requirements of BS EN ISO 9002 : 1994 by the British Standards Institution Quality Assurance (QAS 2567/350, Certificate No FM1937).

## Bibliography

BS 5492 : 1990 *Code of practice for internal plastering*

BS 6576 : 1985 *Code of practice for installation of chemical damp-proof courses*

BS EN ISO 9002 : 1994 *Quality systems — Model for quality assurance in production, installation and servicing*

## Conditions of Certification

### 14 Conditions

14.1 Where reference is made in this Certificate to any Act of Parliament, Regulation made thereunder, Statutory Instrument, Code of Practice, British Standard, manufacturer's instruction or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certificate.

14.2 The quality of materials and the method of manufacture have been examined and found satisfactory by the BBA and must be maintained to this standard during the period of validity of this Certificate. This Certificate will remain valid for an unlimited period provided:

- (a) the specification of the product is unchanged; and
- (b) the manufacturer continues to have the product checked by the BBA.

14.3 This Certificate will apply only to the product that is installed, used and maintained as set out in this Certificate.

14.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of patent or similar rights subsisting in the product; and
- (b) the legal right of the Certificate holder to market, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

14.5 It should be noted that any recommendations relating to the safe use of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory or Common Law duties of care, or of any duty of care which exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory or Common Law duties 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 use of this product.



In the opinion of the British Board of Agrément, the Safeguard Chemical Damp-proof Systems are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 97/3363 is accordingly awarded to Safeguard Chemicals Ltd.

On behalf of the British Board of Agrément

Date of issue: 17th June 1997

Director

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For technical or additional  
information, tel: 01923 670844.  
For information about Agrément  
Certificate validity and scope, tel:  
**Hotline: 01923 662900**

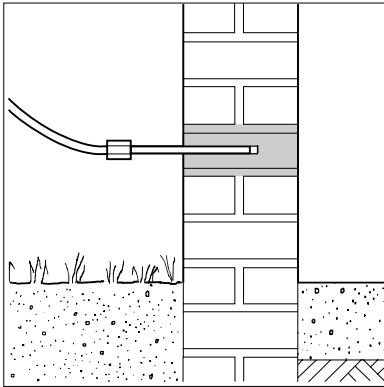


Safeguard Chemicals Ltd

Certificate No 97/3363

**DETAIL SHEET 2****SAFEGUARD HYDRACHECK**

## Product



• THIS DETAIL SHEET REPLACES CERTIFICATE No 95/3157 AND RELATES TO SAFEGUARD HYDRACHECK, A SILICONATE/SILICATE SOLUTION FOR FORMING A DAMP-PROOF COURSE IN EXISTING WALLS.

• Installation is by pressure injection in accordance with BS 6576 : 1985.

*This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification.*

## Technical Specification

### 1 Description

1.1 Safeguard Hydracheck is a concentrated silicate/siliconate solution. The concentrate is manufactured by a controlled batch-blending process. Regular quality control checks are carried out for:

appearance  
specific gravity  
silicone solids content.

1.2 The 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.

1.3 The injection fluid is produced by diluting the concentrate with clean water at the installer's premises. The standard pack is made up to a total volume of 25 litres.

1.4 The product is also available as Aquacheck, a pre-diluted form of Hydracheck concentrate.

### 2 Delivery and site handling

2.1 The concentrate is supplied in polythene containers of 3.6 litres (standard pack) and 25 litres.

2.2 The concentrate and injection fluid are classified as 'Corrosive' and 'Irritant', respectively, under the Chemicals (Hazard, Information and Packaging for Supply) Regulations 1994. Precautions are necessary during handling,

dilution and injection, to minimise contact from spillage or leakage. The normal precautions (use of goggles or visor, gloves, protective clothing and prompt removal of contaminated clothing) should be strictly observed during the handling of the concentrate. If fluid comes into contact with the skin it must be washed off promptly. If it comes into contact with the eyes they should be flushed with cold water for 10 minutes, and medical attention sought.

## Design Data

### 3 General

3.1 Safeguard Hydracheck is satisfactory for use in accordance with BS 6576 : 1985, in existing:

- (a) solid walls of brickwork, blockwork or masonry, up to 600 mm thick
- (b) walls of conventional cavity construction, or
- (c) walls of rubble-filled construction

to provide a barrier against rising damp where there is no damp-proof course or where the existing damp-proof course has failed.

3.2 Replastering is necessary to retain salts in the body of the wall to prevent damage to subsequent redecoration. Safeguard Chemicals' Replastering Specification (see Detail Sheet 4) is satisfactory for this purpose.

3.3 The solution has no effect on expanded polystyrene or bitumen.

### 4 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.

### 5 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. The Hydracheck process is expected to remain effective for at least 20 years.

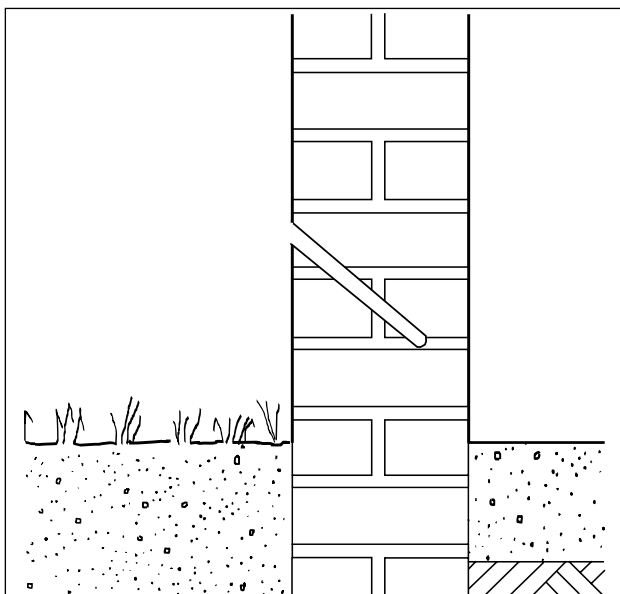
## Installation

### 6 Procedure

#### Mortar

6.1 Holes, from 10 mm to 16 mm in diameter, are drilled to predetermined depths at intervals of between 120 mm and 150 mm along the selected course, avoiding the perpends. 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 damp-proof course (see Figure 1).

Figure 1 Angled drilling into the mortar course



6.2 Holes, from 10 mm to 16 mm in diameter, are drilled to predetermined depths at intervals of between 120 mm and 150 mm along the selected course. Two holes are drilled in each stretcher and one in each header to an average spacing of approximately 120 mm, with a maximum of 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 6.1). Percussion drills should not be used on half-brick walls.

#### Solid stone

6.3 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, but in each case the procedure chosen ensures a continuous unbroken treatment along the length of the wall.

#### Rubble-fill

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

#### Injection

6.5 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.

#### Different wall types

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

6.7 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 and re-drilling to deepen the hole by 100 mm to 120 mm, and re-injecting.

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

6.9 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.

## Technical Investigations

The following is a summary of the technical investigations carried out on Safeguard Hydracheck.

### 7 Tests

Tests were carried out by the BBA to determine:  
effectiveness against rising damp, to MOAT No 39 : 1988, method 4.3.1.4  
substantivity of injection treatment, to BBA test specification  
total and active solids contents, to BBA test specification  
specific gravity, to BS 3900 : Part A12 : 1975(1991).

### 8 Investigations

8.1 A re-examination was made of the data and investigations on which the previous Certificate No 95/3157 was based. The conclusions drawn from the original data remain valid.

8.2 An assessment was made of Safeguard Chemicals Ltd's safety assessment on Safeguard Hydracheck under the Control of Substances Hazardous to Health (COSHH) Regulations 1994.

## Bibliography

BS 3900 *Methods of test for paints*  
Part A12 : 1975(1991) *Determination of density*


BS 6576 : 1985 *Code of practice for installation of chemical damp-proof courses*

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



On behalf of the British Board of Agrément

Date of issue: 17th June 1997



Director

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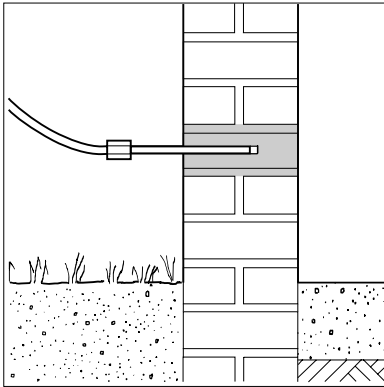


Safeguard Chemicals Ltd

Certificate No 97/3363

**DETAIL SHEET 3****SAFEGUARD MICROSILAN**

## Product



• THIS DETAIL SHEET RELATES TO SAFEGUARD MICROSILAN, A SILICATE : SILICONATE : SILANE MICROEMULSION CONCENTRATE FOR FORMING A DAMP-PROOF COURSE IN EXISTING WALLS.

• After dilution with water it is installed by pressure injection in accordance with BS 6576 : 1985.

*This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification.*

## Technical Specification

### 1 Description

1.1 Safeguard Microsilan is a mixture of potassium methyl silicate, silicate and silane microemulsion in concentrated form, and is manufactured by a controlled batch-blending process. Regular quality control checks are carried out for:

appearance  
specific gravity  
silicone solids content.

1.2 The 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.

1.3 The injection fluid is produced by diluting the concentrate with clean water at the installer's premises. The standard pack is made up to a total volume of 25 litres.

1.4 The product is also available as Dampcheck Plus, a pre-diluted form of the concentrate.

### 2 Delivery and site handling

2.1 The concentrate is supplied in polythene containers of 4 litres (standard pack) and 25 litres.

2.2 The concentrate and injection fluid are classified as 'Corrosive' and 'Irritant', respectively, under the Chemicals (Hazard, Information and Packaging for Supply) Regulations 1994. Precautions are necessary during handling,

dilution and injection, to minimise contact from spillage or leakage. The normal precautions (use of goggles or visor, gloves, protective clothing and prompt removal of contaminated clothing) should be strictly observed during the handling of the concentrate. If fluid comes into contact with the skin it must be washed off promptly. If it comes into contact with the eyes they should be flushed with cold water for 10 minutes, and medical attention sought.

## Design Data

### 3 General

3.1 Safeguard Microsilan is satisfactory for use in accordance with BS 6576 : 1985, in existing:

- (a) solid walls of brickwork, blockwork or masonry, up to 600 mm thick
- (b) walls of conventional cavity construction, or
- (c) walls of rubble-filled construction

to provide a barrier against rising damp where there is no damp-proof course or where the existing damp-proof course has failed.

3.2 Replastering is necessary to retain salts in the body of the wall to prevent damage to subsequent redecoration. Safeguard Chemicals' Replastering Specification (see Detail Sheet 4) is satisfactory for this purpose.

3.3 The solution has no effect on expanded polystyrene or bitumen.

## 4 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.

## 5 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. The Microsilan process is expected to remain effective for at least 20 years.

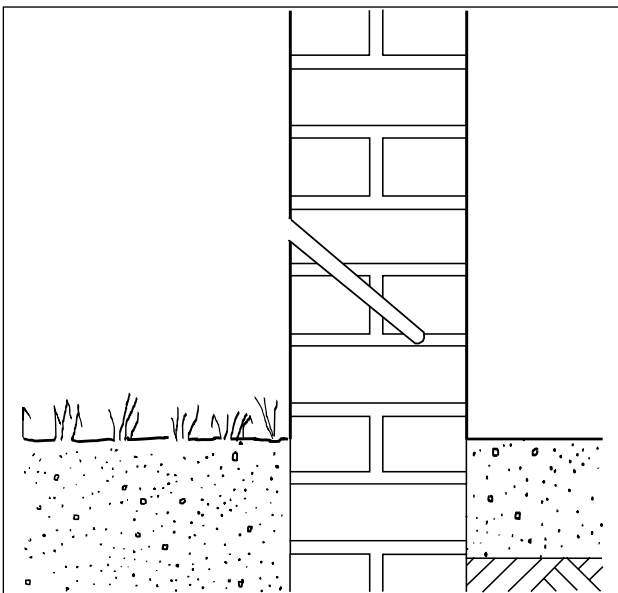
## Installation

### 6 Procedure

#### Mortar

6.1 Holes, from 10 mm to 16 mm in diameter, are drilled to predetermined depths at intervals of between 120 mm and 150 mm along the selected course, avoiding the perpends. 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 damp-proof course (see Figure 1).

Figure 1 Angled drilling into the mortar course



#### Brickwork

6.2 Holes, from 10 mm to 16 mm in diameter, are drilled to predetermined depths at intervals of between 120 mm and 150 mm along the selected course. Two holes are drilled in each stretcher and one in each header to an average spacing of approximately 120 mm, with a maximum of 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 6.1). Percussion drills should not be used on half-brick walls.

#### Solid stone

6.3 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, but in each case the procedure chosen ensures a continuous unbroken treatment along the length of the wall.

#### Rubble-fill

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

#### Injection

6.5 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.

#### Different wall types

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

6.7 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 and re-drilling to deepen the hole by 100 mm to 120 mm, and re-injecting.

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

6.9 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.

## Technical Investigations

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

### 7 Tests

7.1 Tests were carried out by the BBA to determine early water repellency to BS 6477 : 1992.

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

effectiveness against rising damp  
substantivity of injection treatment.

### 8 Investigations

An assessment was made of Safeguard Chemicals Ltd's safety assessment on Safeguard Microsilan under the Control of Substances Hazardous to Health (COSHH) Regulations 1994.

## Bibliography

BS 6477 : 1992 *Specification for water repellents for masonry surfaces*

BS 6576 : 1985 *Code of practice for installation of chemical damp-proof courses*



On behalf of the British Board of Agrément

Date of issue: 17th June 1997

Director

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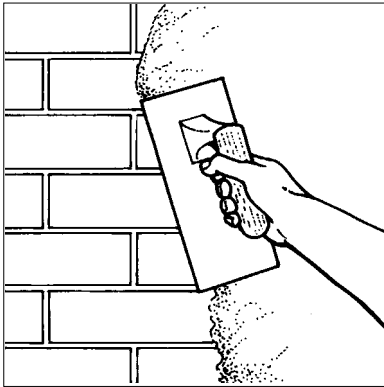
Certificate No 97/3363

**DETAIL SHEET 4**

## SAFEGUARD CHEMICALS' REPLASTERING SPECIFICATION



### Product



• THIS DETAIL SHEET RELATES TO SAFEGUARD CHEMICALS' REPLASTERING SPECIFICATION, A RANGE OF REPLASTERING PRODUCTS FOR USE ON EXISTING INTERNAL WALLS FOLLOWING THE INSERTION OF A CHEMICAL DPC SYSTEM.

*This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification.*

### Technical Specification

#### 1 Description

1.1 Safeguard Chemicals' Replastering Specification range of products consists of:

- Safeguard Renderguard Gold — a combined waterproofing, salt retardant and plasticiser additive for use in sand/cement replastering mixes.
- Safeguard DR5 Premix — a specially formulated dry mix of 1 part cement to 3 parts of graded sand, with water-resistant properties.

1.2 All products are manufactured by controlled batch blending processes. Regular quality control checks are conducted on the final products.

#### 2 Delivery and site handling

2.1 The packaging, shelf life and storage requirements are given in Table 1.

*Table 1 Packaging arrangements, shelf life and storage requirements*

Product	Packaging details	Shelf life and storage requirements
Safeguard Renderguard Gold	1, 5 and 25 litre containers	Two years when stored in a dry place. Protect from frost, high temperature and direct sunlight.
Safeguard DR5 Premix	25 kg bags	Six months when stored in a cool, dry place.

2.2 The integral waterproofers are innocuous in normal use. However, these should both be swallowed or splashed into the eyes. If splashing occurs, eyes should be washed with copious quantities of clean water and medical attention sought.

2.3 Each product's packaging bears the BBA identification mark incorporating the number of this Certificate.

### Design Data

#### 3 General

3.1 Safeguard Renderguard Gold additive for sand/cement mixes and Safeguard DR5 Premix are satisfactory for application to walls of all types of masonry where there has been rising damp and remedial dpc treatment has been conducted.

3.2 The Safeguard Renderguard Gold additive mixes and Safeguard DR5 Premix are applied at a thickness of 12 mm using the normal procedures defined in BS 5492 : 1990, and finished using 3 mm Carlite finish, multifinish or similar.

3.3 The plasters have good resistance to mechanical damage.

3.4 Normal methods for fixing and chasing can be used, but the surface should be restored using Safeguard DR5 Premix or the Safeguard Renderguard Gold additive sand/cement mix appropriately.

#### 4 Resistance to salt transfer

Where rising damp has created a high salt content in walls and an effective chemical dpc remedial treatment has been conducted, and where no other source of water ingress exists, the Safeguard Chemicals' Replastering Specification will provide an effective barrier against salt transfer.

#### 5 Durability

The durability of Safeguard Chemical Ltd's Replastering Specification is equivalent to traditional plastering to BS 5492 : 1990.

## Installation

### 6 General

6.1 A remedial chemical damp-proofing treatment (see the appropriate Detail Sheet) is conducted in accordance with BS 6576 : 1985.

6.2 The standard of installation should comply with BS 8000 : Part : 1995.

6.3 Replastering should not normally be conducted for at least 14 days after the remedial dpc installation.

6.4 If the background is impermeable and offers little suction (ie where rising damp has occurred in the mortar joints), the joints are raked out to provide a mechanical key and/or a bonding aid is applied to the surface and the wall replastered immediately.

### 7 Application

#### Preparatory work

7.1 Details such as timber skirtings should be removed as described in the specification.

7.2 Plaster is removed back to masonry to a height as described in the specification, but should not be less than a height of 1 metre or 500 mm above the maximum level of the rising dampness/salt contaminated plaster, whichever is the greater.

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

7.4 Timber fixing grounds present in the masonry are removed.

#### Mixing

7.5 The water must be clean, free from oil, dirt or other injurious chemicals (water suitable for drinking, if available).

#### Renderguard specification

##### First coat

7.6 A mix of three parts sand to one part cement using gauging water containing Safeguard Renderguard is prepared<sup>(1)</sup>. The sand should be specified as washed, sharp sand, loam-free, satisfying the requirements for M grading as laid down in BS 882 : 1992. The cement should be fresh and free flowing.

(1) Mix one part Renderguard Gold with between 24 and 39 parts water — 1:24 gives maximum water resistance and 1:39 is suitable for general plastering applications.

7.7 A minimum of water is used to ensure a dense coat; an approximation is not more than 8 litres per 50 kg of dry mix.

7.8 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, this surface is scratched to form a key.

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

##### Finish coat

7.10 This should be a mix of Carlite finish, multifinish or similar, applied to a thickness of 3 mm. Other finishes are acceptable provided they are porous. The surface must not be polished.

#### Premix specification

##### First coat

7.11 The Safeguard Premix is prepared with a minimum of clean gauging water containing Renderguard (no more than 3.5 litres per 25 kg of dry mix)<sup>(1)</sup>. The Premix is applied without over-trowelling, to a thickness of 10 mm. At first set the surface is scratched to form a key.

(1) Mix one part Renderguard Gold with between 24 and 39 parts water — 1:24 gives maximum water resistance and 1:39 is suitable for general plastering applications.

##### Second coat

7.12 The mix, as for the first coat but with additive-free water, is applied to a thickness of 10 mm without over-trowelling. This coat should be applied before the first coat has finally set, to obtain satisfactory adhesion between the coats. The surface should be scratched to form a key for the finishing plaster.

##### Finish coat

7.13 A 3 mm thick coat of Carlite finish, multifinish or similar is applied. Other finishes are acceptable provided they are porous.

7.14 The entire contents of the bag must be thoroughly mixed with water to give a maximum slump of 150 mm in accordance with BS 1881 : Part 102 : 1983. The wet mix must be used within two hours (unused material must be discarded). The rendering coat must be protected during curing from frost and rapid drying.

#### Miscellaneous

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

7.16 To prevent any damp within a solid floor being transferred into the soft setting coat, renders and plasterwork may extend behind the skirtings but should not join the finished floor level.

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

7.18 Where conventional timber skirtings are to be fixed, these should be cut to size and fully worked, with a minimum of three brush coats of wood preservative applied. 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 the new joinery to cause fungal decay.

7.19 Skirting that has been removed but is still sound should have a minimum of three coats of Deepwood 20 Inorganic Boron Wood Preservative (HSE 5514) applied to the unpainted surfaces. It is also recommended that the back and bottom of skirtings are given two coats of a bituminous paint, or backed with joinery liner.

7.20 Where practicable, all joinery should be fixed by the use of masonry nails. If not, inorganic fixing grounds should be used, ie plastic, but timber may be used provided it is cut to size and fully worked and immersed for a minimum of 24 hours in Deepwood 20 Inorganic Boron Wood Preservative before being inserted into the damp masonry.

7.21 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 manufacturer. Lightweight gypsum premix backing or bonding plasters (eg Carlite) must not be used.

## Technical Investigations

The following is a summary of the technical investigations carried out on Safeguard Chemicals Ltd's Replastering Specification.

### 8 Investigations

8.1 A re-examination was made of the data and investigations on which the Appendices to Safeguard Chemicals Ltd's previous chemical dpc Certificate was based. The conclusions drawn from the original data remain valid.

8.2 An assessment was made of Safeguard Chemicals Ltd's safety assessments on Safeguard Renderguard Gold and Safeguard Premix under the Control of Substances Hazardous to Health (COSHH) Regulations 1994.

## Bibliography

BS 882 : 1992 *Specification for aggregates from natural sources for concrete*

BS 1881 *Testing concrete*

Part 102 : 1983 *Method for determination of slump*

BS 5492 : 1990 *Code of practice for internal plastering*

BS 6576 : 1985 *Code of practice for installation of chemical damp-proof courses*

BS 8000 *Workmanship on building sites*

Part 10 : 1995 *Code of practice for plastering and rendering*



On behalf of the British Board of Agrément

Date of issue: 17th June 1997

Director

# Electronic Copy



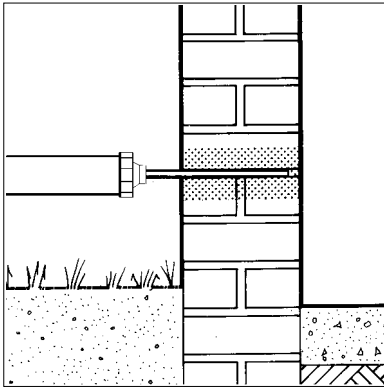
Safeguard Chemicals Ltd

Certificate No 97/3363

DETAIL SHEET 5

DRYZONE

## Product



• THIS DETAIL SHEET RELATES TO DRYZONE, A CONCENTRATED SILANE-SILOXANE CREAM FOR INSERTION INTO MORTAR COURSES TO FORM A REMEDIAL DAMP-PROOF COURSE IN EXISTING WALLS.

• Installation of Dryzone is carried out in accordance with BS 6576 : 1985.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification.

## Technical Specification

### 1 Description

1.1 Dryzone is a concentrated viscous silane/siloxane emulsion cream, and is manufactured by a controlled batch-blending process. Regular quality control checks are carried out on the final product.

1.2 The Dryzone cream is packed in a foil cartridge, for insertion into the Safeguard Dryzone applicator gun.

1.3 The process involves delivering a set amount of Safeguard Dryzone cream via the applicator gun into a series of holes drilled into the mortar course and the subsequent replastering.

### 2 Delivery and site handling

2.1 Dryzone is supplied in 600 ml foil cartridges.

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

2.3 The product is classified as Irritant under the Chemicals (Hazard Information and Packaging for Supply) Regulations 1994.

## Design Data

### 3 General

3.1 Dryzone is satisfactory for use in accordance with BS 6576 : 1985, 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

to provide a barrier against rising damp where there is no damp-proof course or where the existing damp-proof course has failed.

3.2 Replastering is necessary to retain salts in the body of the wall to prevent damage to subsequent redecoration. Safeguard Chemicals' Replastering Specification (see Detail Sheet 4) is satisfactory for this purpose.

### 4 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.

### 5 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. The Dryzone process is expected to remain effective for at least 20 years.

## Installation

### 6 Procedure

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

6.2 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.

Table 1 Depth of hole required

Wall thickness <sup>(1)</sup>	4½"	9"	13½"	18"
	(115 mm)	(230 mm)	(345 mm)	(460 mm)
Depth of hole	100 mm	190 mm	310 mm	430 mm

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

6.3 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.

6.4 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 Dryzone is introduced to the wall. Drill holes can be capped with Dryzone Injection Plugs.

6.5 The injection process consists of loading the Dryzone cartridge into the applicator gun and inserting the gun delivery tube into the full length of the predrilled hole. Each hole is backfilled fully with Dryzone 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.

## Technical Investigations

The following is a summary of the technical investigations carried out on Dryzone.

### 7 Tests

Tests were carried out by the BBA to determine: effectiveness against rising damp to MOAT No 39 : 1988, Method 4.3.1.4<sup>(1)</sup> effectiveness against rising damp to a BBA/Safeguard Chemicals Limited method

total and active solids content to a BBA test specification

specific gravity to BS 3900-A19 : 1998 flashpoint to BS 3900-A9 : 1986.

(1) Method 4.3.1.4 test procedure : the small scale pillar test was set up as shown in Figure 7 of MOAT No 39 with the exception that the water level was raised above the untreated mortar line. The test samples were subjected to the following procedure:

Day	Test procedure
0	base separated from pillar, treated and allowed to cure
2	Base replaced under pillar
21	Dwell period introduced — water removed from trough
28	Dwell period ended. Trough refilled with water

### 8 Investigations

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

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

8.3 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.

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

## Bibliography

BS 3900-A9 : 1986 *Methods of test for paints — Tests on liquid paints — Determination of flashpoint (closed cup equilibrium method)*

BS 3900-A19 : 1998 *Methods of test for paints — Determination of density by the pycnometer method*

BS 6576 : 1985 *Code of practice for installation of chemical damp-proof courses*

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



On behalf of the British Board of Agrément

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Chief Executive