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BBA BRITISH BOARD OF AGRÉMENT
TECHNICAL APPROVALS FOR CONSTRUCTION

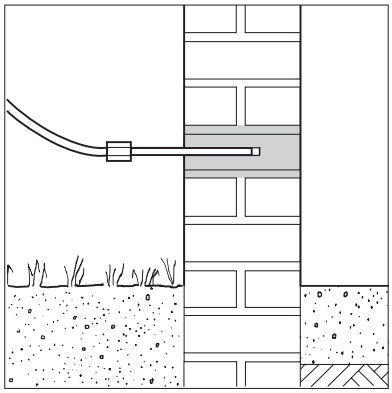
Wykamol Group

MICROTECH PRESSURE INJECTION DPC SYSTEM

Certificate No 02/3961

DETAIL SHEET 4

Product



- *THIS DETAIL SHEET RELATES TO MICROTECH PRESSURE INJECTION DPC SYSTEM, A SILICONE MICROEMULSION IN CONCENTRATED FORM.*
- *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, *respectively.*

Technical Specification

1 Description

1.1 Microtech Pressure Injection DPC System is a solvent-free silicone microemulsion concentrate based on silanes and oligomeric alkylalkoxy siloxanes. The concentrate is manufactured by a controlled batch-blending process. Regular quality control checks are conducted on the final product.

1.2 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.

1.3 Microtech Pressure Injection DPC Fluid is produced by diluting the concentrate with tap water (1:19 by volume) at the installer's premises. The injection fluid should be used within 24 hours of dilution.

2 Delivery and site handling

2.1 The fluid is supplied in 1 litre and 1.25 litre containers, bearing the manufacturer's mark and application instructions.

2.2 The fluid should be stored at temperatures of below 30°C and out of direct sunlight.

2.3 The fluid has a flashpoint of 25°C and is classified as 'Flammable' and 'Irritant' under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP3). The injection fluid poses no flammability hazard and is classified as `Irritant'. 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

The Microtech Pressure Injection DPC Fluid has no effect on expanded polystyrene or bitumen.

4 Odour

The diluted fluid is odourless and gives off no harmful vapours.

5 Durability

Silicone masonry surface water repellents 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 Microtech process is expected to remain effective for at least 20 years.

Installation

6 Precautions

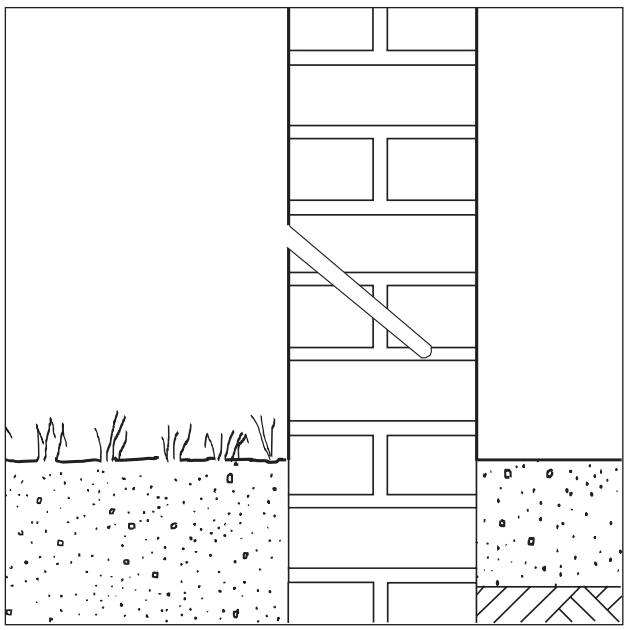
Microtech Pressure Injection DPC concentrate is flammable but the injected dpc fluid poses no flammability hazards.

7 Procedure

Mortar

7.1 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 Figure1).

Figure 1 Angled drilling into the mortar course



Brickwork

7.2 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 7.1). Percussion drills should not be used on half brick walls.

Solid stone

7.3 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.

Injection

7.4 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 application rate in typical 225 mm thick solid brickwork is approximately 3.5 litres per metre of wall. The nozzles are removed and subsequent holes are similarly injected.

Different wall types

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

7.6 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 redrilling to deepen the hole by 100 mm to 120 mm, and reinjecting.

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

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

7.9 Rubble infill walls are normally treated by injecting both the solid external walls in a similar manner to brickwork construction (see section 10.2). One set of holes can then be drilled through into the centre of the wall and the rubble infill treated.

Technical Investigations

The following is a summary of the technical investigations carried out on the Microtech Pressure Injection DPC System.

8 Tests

Tests were carried out by the BBA to determine:

effectiveness against rising damp, to MOAT No 39 : 1988, Method 4.3.1.3
substantivity of injection treatment, to BBA test specification
total and active solids contents, to BWPDA DP4, Method 2.1
specific gravity, to BS 3900-A12 : 1975
flashpoint, to BS 3900-A9 : 1986
in-can stability of injection fluid, to BBA test specification.

9 Investigations

An assessment was made of Wykamol's safety assessment on Microtech under the Control of Substances Hazardous to Health (COSHH) Regulations 1999.

Bibliography

BS 3900-A9 : 1986 *Methods of test for paints — Tests on liquid paints — Determination of flashpoint (closed cup equilibrium method)*
BS 3900-A12 : 1975 *Methods of test for paints — Tests on liquid paints — 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*

BWPDA DP4 *Methods of analysis for damp-course fluids*

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On behalf of the British Board of Agrément

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