Consumer Solutions

Siloxane Damp-proofs, Protects Masonry

Architects and engineers have long realized the advantages of waterproofing compounds in preventing or retarding the passage of water with a damp-proof course (DPC) that can block moisture migration up a wall. The use of silicon-based, water-repellent materials – such as DOWSIL™ 1-6184 Water Repellent can deliver long-term protection to masonry substrates DOWSIL™ 1-6184 Water Repellent is a low VOC, multifunctional, self-crosslinking, water-soluble siloxane.

When formulated in water, DOWSIL™ 1-6184 Water Repellent can be injected into masonry to create a DPC by using a proprietary recirculating pump generating constant pressure. The solution should be injected until a continuous band of solution-saturated wall is achieved. DOWSIL™ 1-6184 Water Repellent can also be used as a penetrating material for the surface treatment of absorbent substrates such as brick, mortar, limestone and sandstone. The formulated product can be applied by brush, roller or flood coating until the substrate is fully saturated.

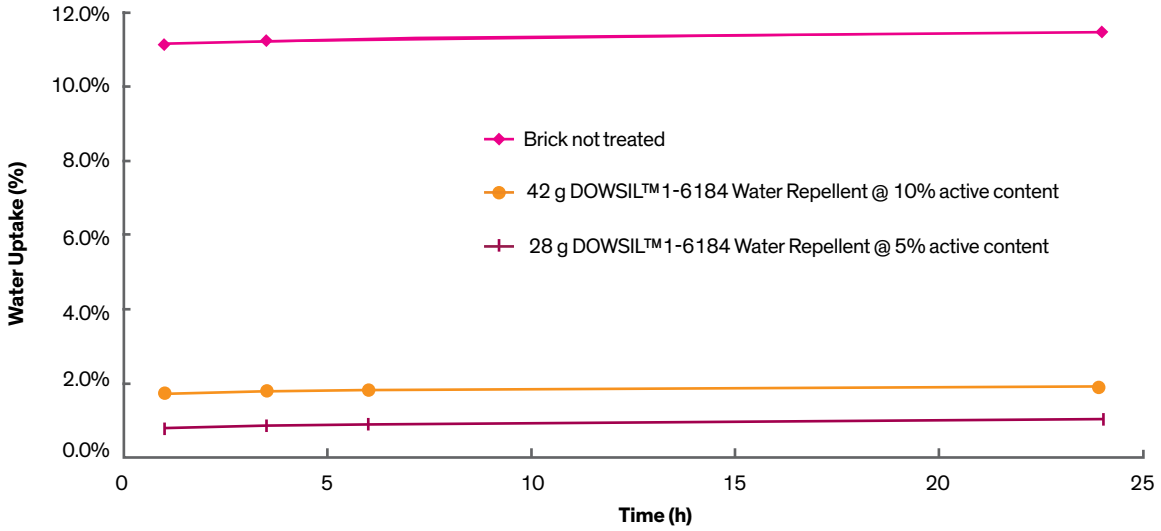
Test of DOWSIL™ 1-6184 Water Repellent on Single Bricks

Test Matrix

Degree of humidity penetration (DFG) of the specimens
- 60%
- 95%

Active agent content of grout
- 7.5% per mass

Time between injection and beginning of WDL Test
- 2 days
- 14 days



Test of DOWSIL™ 1-6184 Water Repellent on Masonry Specimen

Test Matrix

Degree of humidity penetration (DFG) of the specimen
- 95%

Active agent content of grout
- 7.5% per mass

Time between injection and beginning of WDL Test
- 2 days



Understanding Damp Course Failure

The two most common causes for damp course failure are deterioration due to age and bridging the damp course with internal concrete floors or external paths and earth levels. "Rising damp" occurs most commonly in brick and stone foundations of buildings that lack an adequate damp course or older buildings in which the damp-proof course (DPC) has failed.

Even the toughest foundation substrates are vulnerable to the damaging long-term effects of ground moisture or rising damp. Rising damp develops because the DPC in a wall is ineffective, allowing moisture from the ground to soak upward into the porous masonry materials by capillary action. Capillary rise is a natural phenomenon that can be stopped only by the introduction of an impermeable barrier in the base of the wall.

Moisture alone causes some materials to deteriorate: plaster softens, paint peels, steel reinforcing rods and nails rust and timber rots. Damp conditions also encourage mold and insect pests such as termites. However, ground moisture also contains salts that cause a microscopic attack on the masonry materials. The salts crystallize as the moisture evaporates. The enormous pressure created by individual salt crystals growing within the pores will physically break down the matrix of masonry surrounding each salt crystal. Over time, the process repeats itself and eventually the masonry breaks down and crumbles. Some of the salts can cause a chemical reaction that also destroys the internal structure of the masonry.

The symptoms of dampness due to rising damp could include one or all of the following:

- Paint does not adhere to the wall.
- Wallpaper lifts and stains appear on the walls.
- Plaster flakes away or feels soft and spongy; bubbles and white powder or crystals appear.
- Skirting boards and floorboards rot.
- Mortar crumbles and falls out between bricks and stonework.
- Salt deposits in the form of stains or white powder appear on walls.

As a world leader in silicon-based technology with over a half-century of pioneering materials experience, Dow is dedicated to bringing you technologies that meet the changing needs of the water repellents market. Find out how Dow can help make your substrates longer lasting, more durable and able to withstand the toughest environments.

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Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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