



Performance evaluation Dry-Treat S-Tech 40M™ Water repellency on bricks

Silsta Test Report number: 07-2016

- 1) Water absorption of treated bricks was determined as a measure for water repellency. Water absorption was tested using a graduated RILEM test tube according to the RILEM test procedure II.4 (water absorption under low pressure). Evaluation was done for coverage rates of 125 g/m² and 250g/m². Treatment of bricks and tests were done in duplicate, experimental details can be found in the Annex.

Time	Water absorption ml (Test 1) 125 g/m ²	Water absorption ml (Test 2) 125 g/m ²	Water absorption ml (Test 1) 250 g/m ²	Water absorption ml (Test 2) 250 g/m ²	Water absorption ml (ref. untreated)
15 minutes	0.0	0.0	0.0	0.0	>4
30 minutes	0.0	0.0	0.0	0.0	>4
1 hour	0.0	0.0	0.0	0.0	>4
2 hours	0.0	0.0	0.0	0.0	>4
4 hours	0.0	0.0	0.0	0.0	>4
24 hours	0.2	0.1	0.3	0.0	>4

Table 1) Water absorption test results

A reduction of more than 90%, versus an untreated reference, for the 1 hour value is generally considered as a good performing water repellent treatment. A value of less than 1ml after 24 hours is considered as excellent protection for a porous substrate like bricks. This is achieved with Dry-Treat S-Tech 40M™ at both coverage rates tested.

- 2) Depth of penetration is the key performance criteria for durability of a penetrating sealer.

Treatment	Depth of penetration (mm)
S-Tech 40M™ at 125g/m ²	>20
S-Tech 40M™ at 250g/m ²	>20

Table 2) Depth of penetration test results

A high depth of penetration (>5mm) is generally a good indication for protection against efflorescence of bricks.

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Annex Experimental Details

Commercial red bricks, with a smooth terracotta like surface (18cm*6cm*8cm, Brico, Belgium) were treated with Dry-Treat S-Tech 40M™ with a brush in one coat. Amount of product applied was controlled by means of a balance. Samples were then stored at 20°C and 50% RH for a minimum of 1 week to allow complete cure of the product. The RILEM test was carried out using graduated (to 0.1ml) horizontal test tubes with a water contact surface area of 25mm diameter and a water level of 125 mm at test start. Demineralised water was used for the tests. The tubes were fixed by means of putty to the brick (tubes and putty supplied by Ludwig Mohren KG, Germany).

The depth of penetration was determined by cutting treated bricks with a diamond disc and marking the untreated core with a water soluble dye. The distance of the stained core to the treated surface indicates the depth of penetration of the sealer. The distance was measured with a ruler to the closest mm. For the bricks used in this test, only an upper value is reported if the penetration depth exceeds 20mm. The bricks used are hollow and deeper penetration of the product is limited by the cavities in the bricks.

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