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Certificate # L2267 Testing

Sealer Penetration Depth Comparison

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Project #:11-206-1425(bis)

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Date: November 29, 2011

Background: Customer has conducted experiments in Japan that indicate that MCI-2018 V/O penetrates up to twice as deep as MCI-2018 and Protectosil CIT. It is necessary to have first party waterproofing data and attempt to confirm results.

Purpose: The purpose of this test is to compare the penetration depth of MCI-2018, MCI-2018 V/O, Protectosil CIT, and Protectosil 300.

Method: Sealer Penetration Test

Materials:

MCI-2018 batch # 08761
MCI-2018 V/O lab sample
Protectosil 300 Lot # PRR042020115
Protectosil CIT
Concrete saw
Water
Spray bottle

Procedure:

1. Use the standard mix design for lab samples with a 0.45 water to cement ratio.
2. Cast concrete cubes that are 8 millimeters on each side. Allow them to cure for 28 days.
3. Coat each side of the cube with sealer at the standard dosage rate which is indicated in the chart below.

	Square inches/cube	Dosage (g/in^2)	Effective Dosage (ft^2/gal)	Sealer applied per cube (g)
MCI-2018	63.3	0.188	125	11.9
MCI-2018 V/O	63.3	0.188	125	11.9
Protectosil CIT	63.3	0.204	112.5	12.9
Protectosil 300	63.3	0.234	100	14.8

4. Allow the sealer to dry for 7 days.
5. Cut each cube in half, bisecting the top surface of the block, with a concrete saw.
6. Spray the interior surface of the cube with a mist of water and measure the distance between the top surface and where the block absorbs the water. Also measure the distance from the vertical edge to the absorbed water. The center of the block will absorb water which is where the sealer has not penetrated.

Results:

	Horizontal Penetration Depth (millimeters)
MCI-2018	11
MCI-2018 V/O	11
Protectosil CIT	11
Protectosil 300	10

Interpretations:

1. All of the sealers showed similar vertical absorption of the sealer at a similar rate with MCI-2018, MCI-2018 V/O and Protectosil CIT showing silane was absorption to a depth of 11 millimeters.
2. MCI-2018 V/O is the only sealer that had a uniform penetration on the vertical edge which was sealed to a depth of 9 to 11 millimeters all the around the block. This even penetration is likely a result of the thickener that holds the sealer in place on the concrete surface while it migrates.

Pictures: