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Attention: Editor

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PRODUCT RELEASE

Cortec® Delivers Powerful MCI® Water/Oil/Stain Repellant While Meeting Regulatory Demands

Cortec® has again met the demands of an ever-changing regulatory landscape, now with the successful reformulation of MCI® POWR 100, a powerful three-in-one concrete surface treatment for water repellency, oil/stain resistance, and corrosion protection. This multi-functionality makes MCI® POWR 100 particularly beneficial for commercial buildings, parking garages, bridges, and industrial floors exposed to high levels of oils, greases, or water.

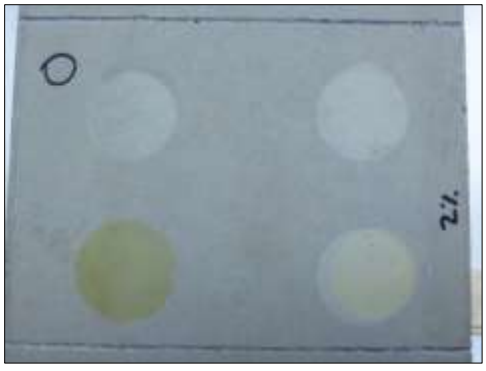
MCI® POWR 100 works in three ways. First, the silane component of MCI® POWR 100 provides water repellency by chemically reacting with the cementitious substrate under proper application, decreasing the ingress of aggressive materials. Second, the oleophobic additive modifies the concrete surface to increase resistance to oil and food stains. Third, the MCI® component penetrates deep into the substrate, forming a protective, molecular barrier on embedded reinforcement to reduce the rate of corrosion at the rebar surface.

To reassure customers that the new formulation does not negatively impact the water, oil, and stain resistance of MCI® POWR 100, the product underwent multiple tests—in some cases being assessed alongside a standard silane sealer. The results of testing showed that MCI® POWR 100 still delivered the required water, oil, and stain resistance characteristics, while performing competitively and sometimes superior to a traditional silane sealer in water and oil repellency traits.[1]

Oil Resistance

In the oil contact angle test, one concrete panel was treated with a standard silane sealer and another one with MCI® POWR 100. Drops of mineral oil were then carefully placed on the concrete surfaces and their angles measured to determine oil resistance. The oil contact angle on the standard silane panel was 0°, while the panel treated with MCI® POWR 100 was 110°. This exceeded the required 90° angle considered to be hydrophobic, leading to the logical conclusion that MCI® POWR 100 was therefore oleophobic, as well.

A second test evaluated how quickly it took for drops of mineral oil to penetrate a concrete surface treated with MCI® POWR 100. This showed that treated concrete had an estimated 2-3 week "oil resiliency" against significant staining from pooling oil.



Stain Resistance

A third test evaluated staining of mayonnaise, hot sauce, mustard, and coffee and found that the majority of the stains could be removed after rinsing and light scrubbing on a surface treated with MCI® POWR 100.

Water Repellency

A fourth test once again evaluated a standard silane sealer alongside MCI® POWR 100 in Rilem testing to find that MCI® POWR 100 offered slightly better hydrophobicity (water-resistance) than the standard silane. Based on test results, it was calculated that MCI® POWR 100 had a hydrophobicity

corresponding to only 0.197 L/m² of water penetration per week under a water pressure equal to 98 mph (157 km/h) of wind-driven rain.

A final test measured the depth of the hydrophobic layer created on the concrete after seven days of curing with either MCI® POWR 100 or a standard silane sealer. The concrete blocks were cracked and wetted with water to determine the depth of hydrophobicity. Both blocks performed similarly, with the silane-sealed block measuring an average hydrophobic layer depth of 10.11 mm (0.59 mm standard deviation) and the block treated with MCI® POWR 100 showing an average 10.60 mm hydrophobic depth (0.89 standard deviation).

The results of these tests show that Cortec's MCI® POWR 100 continues to meet the necessary repellency requirements and remains an excellent choice for those who want to combine corrosion protection in one surface treatment with water, oil, and stain resistance.

To learn more about MCI® POWR 100, please visit:
https://www.cortecvci.com/Publications/PDS/MCI-POWR-100.pdf


MCI POWR 100

References:

1. ***Cortec® Laboratories, "MCI POWR 100 Efficacy Testing." Project #: 19-024-1916.public. 19 Feb. 2019, Saint Paul, MN.***

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