



Technical Data Sheet

DOWSIL™ IE 6686 Water Repellent

Integral water repellent for inorganic construction materials

Features & Benefits

- Microencapsulation of silicone resin
- Easy to dilute in water
- Easy to mix in water-based slurry (mortar-concrete)
- Silicone resins react chemically within inorganic materials such as cementitious matrixes and provide integral water repellent treatment
- DOWSIL™ IE 6686 Water Repellent can be used as supplied or diluted in water prior to use
- Can be added at levels ranging from 0.4 to 1 weight % vs cement content
- When used as an additive to cementitious matrixes, DOWSIL IE 6686 Water Repellent can impart the following benefits:
 - Significant reduction in capillary absorption of water leading to resistance against water absorption throughout the material
 - Significant reduction of ingress and transfer of water-soluble salts through the matrix (i.e. efflorescence)
 - Little impact on mechanical properties of set materials
 - Little impact on cement setting time
 - Little impact during foaming process of foamed formulations

Composition

- Core shell microencapsulation
- Active based on silicone resin

Applications

- Admixture for cement-based construction materials for improved water resistance (including pavers, foamed concrete, mortars, fiber reinforced cement boards)

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test ¹	Property	Unit	Result
CTM 0176B	Appearance		Milky White
	Composition		Resin based
CTM 0862	Active Content	%	30
CTM 0007	pH		2.5–5
CTM 0001	Density	g/ml	0.99

1. CTMs (Corporate Test Methods) correspond to standard ASTM tests in most instances. Copies of CTMs are available upon request.

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Description	DOWSIL IE 6686 Water Repellent is a 30% active microencapsulation containing alkoxy silicone resin. Silicone resins are well known for their ability to provide hydrophobicity and decrease dramatically the water ingress within cementitious materials. Resin supplied in emulsion can chemically react with cement hydrate. Some alcohol is released upon reaction of the resin.
How To Use	<p>It is advised to stir DOWSIL IE 6686 Water Repellent prior to its application. DOWSIL IE 6686 Water Repellent can be used as supplied or can be diluted in water before use. The water should be added to the emulsion with low shear mixing. Deionized water is recommended for dilution. After dilution, it is advised to make sure the pH is maintained in the 3–7 range.</p> <p>DOWSIL IE 6686 Water Repellent can be used as an admixture to cementitious mixtures at levels between 0.1 to 0.25% by weight of DOWSIL IE 6686 Water Repellent, as supplied, based on the dry composition weight.</p> <p>If calculated to cement mass, an addition level of DOWSIL IE 6686 Water Repellent between 0.4 and 1.0% vs cement is advised.</p> <p>Tested as integral water repellent in EN1 196-1 mortar, addition of 0.25% DOWSIL IE 6686 Water Repellent vs dry mortar weight was shown to have limited impact on mechanical properties. It is however strongly advised to carry out an evaluation of DOWSIL IE 6686 Water Repellent addition on the physical properties of the targeted cement-based materials prior to any use in full scale application.</p>
Handling Precautions	PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM , OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.
Usable Life And Storage	<p>DOWSIL IE 6686 Water Repellent should be stored under dry conditions out of direct sunlight.</p> <p>When stored at or below 40°C (104°F) in the original unopened containers, DOWSIL IE 6686 Water Repellent has a usable life of at least 12 months from the date of manufacture.</p>
Packaging Information	DOWSIL IE 6686 Water Repellent is available in 200 kg drums and 20 kg pails.
Limitations	This product is neither tested nor represented as suitable for medical or pharmaceutical uses.
Disposal	DOWSIL IE 6686 Water Repellent can be disposed in accordance with local regulations.

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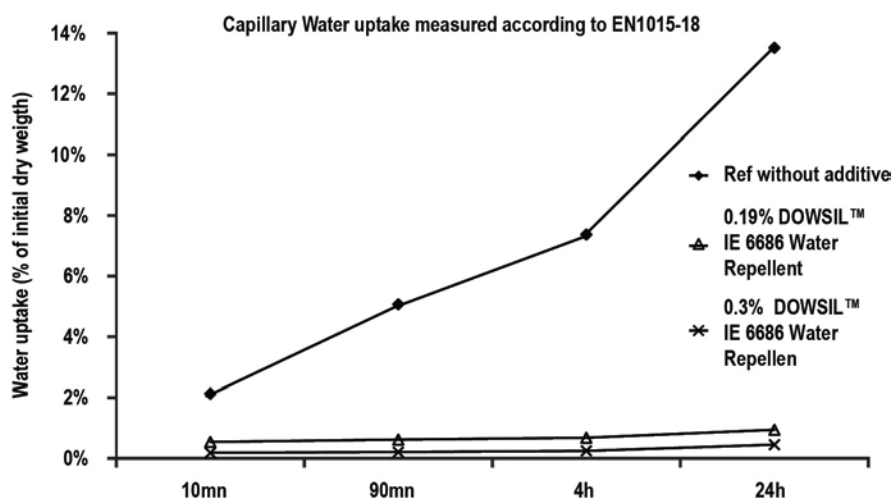
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Health And Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.



Capillary water absorption (reported as percentage of initial dry mortar weight) measured according to EN 1015-18 of 4*4*16 cm³ Cement-Lime based mortar specimens modified with 0.19% and 0.3% of DOWSIL IE 6686 Water Repellent vs dry mortar weight. Ref: European Coating Journal, May 2016.

<http://www.consumer.dow.com>

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