Consumer Solutions

DOWSIL™ 87 Additive and DOWSIL™ 88 Additive for Decorative Coatings

DOWSIL™

Improved Water Resistance for Decorative Coatings

Power Up YOUR COATINGS

Advantages of DOWSIL™ 87 and DOWSIL™ 88 Additives:

- Solvent-free and APEO-free
- Contribute <10 g/l VOCs when used at up to 5% by weight
- Reduce water absorption at only 2% addition by weight
- Negligible impact on water permeability, even at 5% addition by weight
- Increased contact angle for better water beading with DOWSIL™ 87 Additive
- Maintain paintable surfaces when used at up to 5% by weight
- Effective in waterborne acrylic and solvent-based decorative paints

Exterior architectural coatings serve not only to beautify, but also to protect the underlying substrate. Despite advances in coating technology, there is continued demand for improvement in the ability of exterior decorative paints for wood, masonry and other porous substrates to protect structures from damage due to water penetration. Currently available silicone resin emulsions do provide some level of water resistance but generally must be used at levels above 5% by weight in the formulation. New low-VOC, solvent-free and APEO-free additives from Dow provide a sustainable solution to this challenging problem.

Additive Options for Formulation Flexibility

Whether you are formulating a water- or solvent-based coating, Dow has a silicone-based additive that will help improve the water resistance of your formulation.

DOWSIL™ 87 Additive is a silicone resin emulsion designed for use in acrylic emulsion paints, while DOWSIL™ 88 Additive is a silane/siloxane blend that is effective at improving water resistance both in acrylic emulsion paints containing polar solvents and in solvent-based systems.

DOWSIL™ 87 and 88 Additives improve water resistance by creating a hydrophobic silicone network in the paint that repels water but is permeable to water vapor coming from the substrate. As a result, water penetration is reduced while cracking and blistering are minimized.

Better Water Beading for Visual Results

For applications where water beading is the most important characteristic of the coating, DOWSIL™ 87 Additive is an effective option. Better water beading is reflected in a higher contact angle of

water on a paint film. DOWSIL™ 87 Additive shows a marked increase in contact angles in acrylic resin formulations. Even when used at a 2% addition level, it outperforms a competitor silicone resin emulsion added at 5% by weight. In addition, DOWSIL™ 87 Additive provides improved water absorption with minimal impact on water vapor permeability.

Reduced Water Absorption at Low Use Levels

The silicone network formed by DOWSIL™ 87 and DOWSIL™ 88 Additives reduces the amount of water absorbed by a coating, even when used at an addition level of 2%. At this use level, DOWSIL™ 88 Additive is even more effective than a competitor silicone resin emulsion at an addition level of 5%. And, as with DOWSIL™ 87 Additive, this water absorption reduction is achieved with negligible impact on water vapor permeability.

More Than Additives

Our innovative, silicon-based enabling technologies can help you infuse your products with high-value performance attributes that will give you a competitive advantage in the marketplace. As a leader and innovator with a long history of success in the industry, Dow's performance-enhancing coating technology platforms are well-aligned to the needs of the increasingly competitive global coatings market. Consider what adding the following enabling technologies could do to improve your products' performance and support your business goals:

- Gloss enhancement
- Mar resistance and slip
- Impact deadening
- Heat and temperature resistance
- UV resistance
- Feel and touch
- Water resistance
- Antifouling

For More Information

Visit **consumer.dow.com** to learn how Dow's innovative coatings technology platforms can help you power up your product line.

Table 1: Properties of DOWSIL™ 87 and DOWSIL™ 88 Additives

Test	DOWSIL™ 87 Additive	DOWSIL™ 88 Additive
Appearance	Milky white	Clear to hazy
Non-volatile content, %	38 – 44	85 minimum
VOC, g/l	<200	73
VOC contribution to paint at 2% addition level, g/l	<4	1.5
VOC contribution to paint at 5% addition level, g/l	<10	3.75

Figure 1: DOWSIL™ 87 Additive increases the contact angle of water on an acrylic-based emulsion compared to a control with no additive and to a competitor silicone resin emulsion.

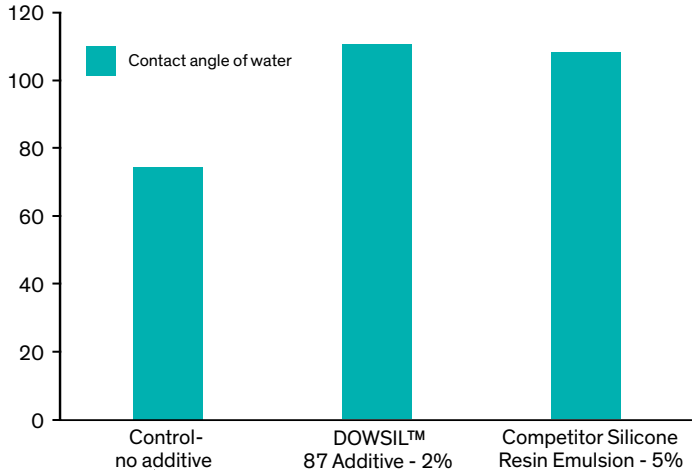
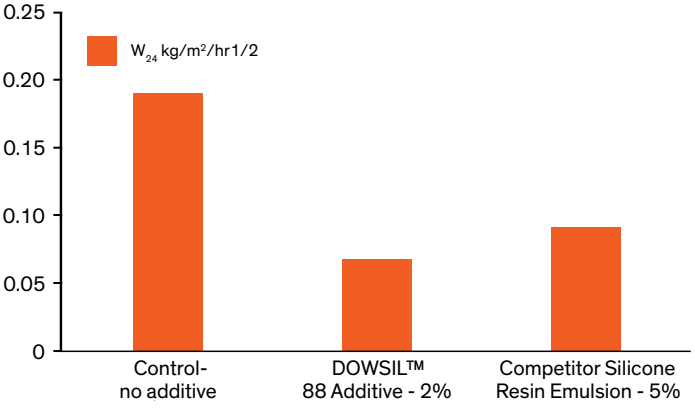


Figure 2: Water absorption reduction by DOWSIL™ 88 Additive in a high-PVC acrylic resin-based formulation compared to a control with no additive and to a competitor product.



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