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ADM 80 – Paint Additive

DESCRIPTION



ADM 80 is a solvent-free (no VOC) silane/siloxane emulsion. The product is designed as a water-repellent admixture for highly-filled external textured coatings. The silane/siloxane reacts with the fillers or aggregates within the textured coating film providing a permanent water repellent effect to the coating film.

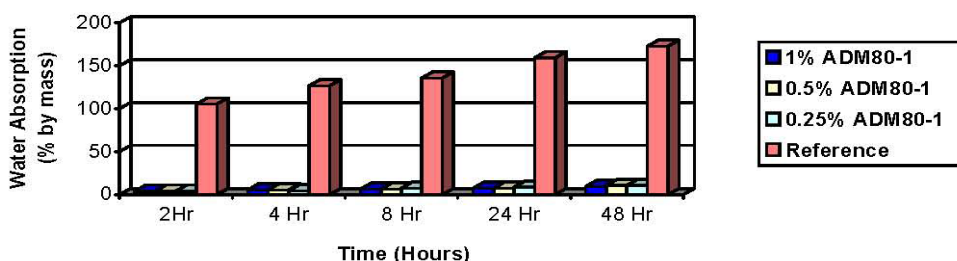
ADM 80 emulsion is compatible with most acrylic emulsion paint systems. It is highly efficient and offers excellent water repellency to the paint film resulting in a significant reduction of the water absorption of the paint film. Test results show that the water absorption of the coating is reduced by more than 95% with addition of 1% of the emulsion by total weight of the paint. .

BENEFITS / TEST RESULTS

Exterior textured coatings are popular due to their architecturally-appealing nature. Such coatings are unfortunately very permeable to water. This water permeability is a result of their high **Pigment Volume Concentration** (usually in the range of 60-80 PVC. As a consequence, these coatings show relatively poor weathering resistance. The ingress of water through the coating causes discolouration, efflorescence and general degeneration of the coating.

Exterior coatings can be made water repellent by the inclusion of ADM 80

ADM 80 is added at a concentration of 0.25-1% by weight to the coating during the final in-plant mixing stage. The resultant coating exhibits excellent surface beading (as shown in figure 1). The coating film has very low water absorption. The water resistance is developed very quickly, preventing wash-down due to rain or dew contacting the coating before cure. The water absorption through the coating is reduced by up to 95%.



The sponge water absorption tests were carried out to evaluate the water resistance of the paint film. Water absorption tests were carried out according to BS6477:1992. The water absorption of the coatings with addition of ADM 80 at

various concentrations is presented in the above chart

The results show a significant decrease in water absorption of all coatings with addition of ADM 80 relative to that of the reference. Calculation has shown that a 24-hour water absorption of the coating with addition of 1% ADM 80 was reduced by 95% relative to that of the reference. The water absorption test was extended to 2 weeks and a similar water absorption trend was obtained. This indicates that ADM 80 is a long-term water repellent additive.

As coating formulations vary, it is always recommended that a test be carried out prior to application to find the suitability of this product for the purpose.

Early Water Repellency

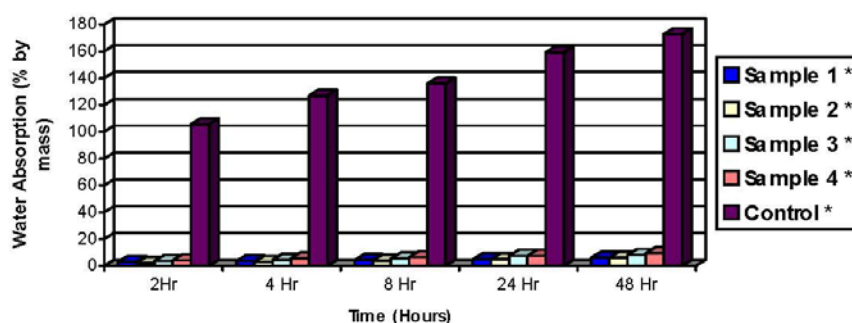


The early water repellent effect was examined by checking the beading effect according to **BS6477:1992**. Pictures on the left shows the beading effect of the film developing over time. The beading effect of the coating with addition of 1% ADM 80 was developed after about 6 hours of curing under normal curing temperature. There was no beading effect exhibited by the reference after 6 hours of curing. Although the paint film started to touch dry after 6 hours, the reference coating was easily washed off by water. The coating with the addition of ADM 80 showed a better water resistance due to the early beading effect. The reference started to show a very slight beading effect after 24 hours curing. Some beading effect of the reference was exhibited after 96 hours of curing. However, such beading is only

temporary and the water droplet was absorbed by the reference coating after a few minutes. In contrast, the coating with addition of ADM 80 showed a constant good beading effect after 6 hours of curing. These test results indicate that ADM 80 imparts sufficient early water-resistant properties to the highly filled emulsion paint film.

Resistance to water-borne stains was examined according to **BS EN438-2:1991**. The attached shows the stain resistance of the coating with 1% ADM 80 and the reference. The coating with ADM 80 showed almost no stains whereas the reference showed a heavy stain on the coating. The stain-resistant property is due to the excellent water-repellences of the coating from the ADM 80 addition.

Durability

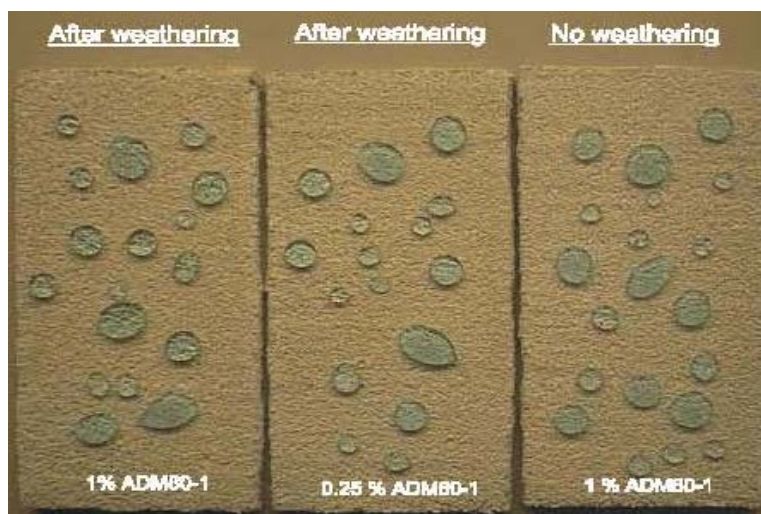


The durability of the coatings with addition of ADM 80 was examined by QUV weathering tester (Q-Panel Company). The accelerated weathering test was performed for 4000 hours. The attached chart has shown that there is no significant change in water absorption of the coating after the weathering test.

Note:

- Sample 1 : Freshly coated panel with fresh coating containing 1% ADM 80
- Sample 2: Panel coated with coating containing 1% ADM 80 and the coated panel has undergone QUV weathering test for 4000 hours.
- Sample 3: Panel coated with coating containing 1% ADM 80 and the coating was aged at 50°C for 2 months before application.
- Sample 4: Panel coated with coating containing 1% ADM 80 and the coating was aged at ambient conditions for 12 months before application.
- Control: Control was freshly coated with fresh reference coating containing no ADM 80

The below confirms that there is no significant change in water repellency for the panel after 4000 hours-accelerated weathering.



USE INSTRUCTION

The following instructions should be followed when using ADM 80

Stir ADM 80 before use.

Add the correct amount (0.25 - 1% by weight) during the final blending of the coating. Blend thoroughly to ensure even dispersion.

The product is water-based and all equipment can be cleaned with water.

TYPICAL DATA

Appearance:	Milky white liquid with slight odour
Solids content:	50% by weight
Specific Gravity:	1.0 gm/ml
pH value:	7-8
Solubility in water:	Nil
Flash point:	>100°C

IMPORTANT NOTE

As products and the conditions of use vary, it is always recommended that a pilot trial should be carried out prior to using TDADM80 to determine the suitability of this product for the purpose.

HANDLING & STORAGE

ADM 80 is classified as a non-hazardous material according to the criteria of Worksafe Australia. However, as with all chemical products, good industrial hygiene procedures should be followed when using this product.

The product should be stored in closed containers in a cool dry place away from any fire sources.

The product has a shelf life of 12 months in a sealed container stored at a temperature below 25oC.

PACKAGING

ADM80-1 is available in 20 and 200 litre plastic drums or 1,000 litre plastic bulky bin. Other size containers may be available on request.