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Aqua Seal and Shield

Hydrophobic Sealer

Technical Data Sheet

Water repellent for masonry surfaces

Features & Benefits

- Imparts water repellency to a wide variety of substances
- Can be applied by vacuum impregnation or surface treatment (brushing/ rolling/ dipping) for the surface treatment of wood
- Reduces water absorption into the substrate, thus reducing spalling due to freeze-thaw and efflorescence, thereby increasing the life of the substrate
- Impregnation of wood with Aqua Shield reduces capillary water absorption of treated surfaces
- Impregnation of wood with Aqua Shield enhances release of tannins.
- Colorless and non-yellowing protection preserves the natural appearance of inorganic substrates
- Penetrating and breathable
- Low VOC
- Nonflammable

Composition

- Water dilutable potassium methyl silicate solution
- Clear to slightly yellow

Applications

- As a surface treatment in applications that utilize its ability to impart a water repellent surface and reduce water absorption
- For use on bricks, sandstone, limestone, and ceramics
- As water repellent for wood surfaces impregnation

Typical Properties

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

CTM ¹	Property	Unit	Result
0332	Total Solids Content, 90 min at 150°C (302°F)	percent	40–45
0332	Silicone Solids Content	percent	24
0001A	Specific Gravity at 25°C (77°F)		1.29
0090A	Flash Point, Open Cup	°C (°F)	> 93.8 (200)

Typical Properties (Cont.)

CTM	Property	Unit	Result
00077	pH		13
	Density	lb/gal (g/L)	10.8 (1290)
	Solvent (Thinner)		Water
	Volatile Organic Compound Content	lb/gal (g/L)	< 0.417 (< 50)

Description

Aqua Shield is a water-dilutable solution of potassium methyl designed to impart water repellency to a wide variety of surfaces. Supplied at a concentration of 40 percent in water, Aqua Shield is usually diluted to a concentration of 3 percent or less before application. Aqua Shield reacts with carbon dioxide in the air to form an insoluble water-resistant treatment within 24 hours.

How To Use

As a Surface Treatment

Aqua Shield is diluted to a concentration of 3 percent solids or less prior to application. To prepare a 3 percent solution, mix one gallon (3.78 liters) of Aqua Shield, as supplied, with 13 gallons (49.2 liters) of water.

Do not use concentrations higher than 3 percent solids unless prior testing indicates a necessity. For formulations aimed at being applied for wood impregnation, Aqua Shield can be diluted in water to reach a concentration of 5% to 10% solid content. The use of higher concentrations than required may result in the formation of a white residue on the surface. Users should test the concentration to be applied on the substrate prior to use.

After application of the silicone solution, allow the treated surface to dry for at least 24 hours to develop maximum water repellency. This interval may be shortened somewhat by force-drying at temperatures up to 175°C (350°F). While this removes the water quickly, time must be allowed for the curing reaction between Aqua Shield and the surface being treated. Carbon dioxide streams do not appear to reduce the cure time appreciably.

Application Methods

Dilute solutions of Aqua Shield can be applied by dipping, spraying, or brushing.

Application Precautions

- Always test the concentration on a small sample of the material to determine the suitability of your specific use.
- Surfaces to receive the water-soluble silicone should be lightly dampened immediately prior to application.
- This water-soluble silicone does not wet surfaces that have been previously treated with silicone or another water repellent treatment.
- When spraying Aqua Shield, great care should be taken to protect nearby vegetation or articles from overspray. The material is very caustic. It will damage or kill vegetation and will stain or etch glass, plastic, aluminum and most metals. If contact does occur, wash immediately with water.

How To Use (Cont.)

Application Precautions (Cont.)

- If a white precipitate of potassium carbonate should form because of over-application of the water repellent and washing with water does not remove it, it may be necessary to scrub the surface.

Wood Impregnation Instructions

In formulation aimed at being applied by vacuum impregnation. Aqua Shield can be diluted such as to reach active content as low as 1%.

In formulation aimed at being applied by brushing/rolling/dipping, Aqua Shield can be diluted such as to reach active content ranging between 5 and 10%.

The diluted formulation has to be applied until surface saturation. Impact of impregnation of wood with formulations based on Aqua Shield 7 can be dependent on the specific wood species used.

Before treatment a test application is recommended in order to ensure the compatibility and determine the suitable amount of product to be applied on wood substrate.

Substrates should be free of standing water, surface dirt, dust, oils, and other contaminants. Dry surface are preferred to ensure correct penetration into the wood substrate.

Preliminary trials should be carried out to properly assess application conditions (application method, quantity of formulation to use) and impact on treated wood (reduction of capillary water absorption, color).

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.

Usable Life And Storage

Product should be stored at or below 25°C (77°F) in original, unopened containers.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Not intended for human injection. Not intended for food use.

Health And Environmental Information

**Table 1: Performance¹ of Aqua Shield on
Various Substrates**

Substrate	% Active Total Solids	% Water Exclusion vs. Control ²	% Weight Absorption ³
Sandstone ⁴	1.0	93	0.6
	3.0	87	1.1
	5.9	82	1.5
	control		8.6
Limestone ⁵	3.0	74	1.4
	5.0	75	1.3
	control		6.0
Belcrest 760	1.0	94	0.4
(Red Brick)	3.0	86	0.7
	5.0	86	0.7
	control		6.0
Beldon 691/693	1.0	95	0.2
(Gray Brick)	3.0	95	0.2
	5.0	88	0.5
	control		4.5
Camfered Cocoa	1.0	96	0.1
Paver	3.0	89	0.2
(Dark Red)	5.0	87	0.3
	control		1.9
Illionois Common	3.0	96	0.7
Brick	5.0	96	0.7
(Light Red)	control		17.2

**LIMITED WARRANTY INFORMATION – PLEASE
READ CAREFULLY**

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.