



Technical Data Sheet

XIAMETER™ OFS-0777 Silicone

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 XIAMETER™ OFS-0777 Silicone reduces capillary water absorption of treated surfaces
- Impregnation of wood with XIAMETER™ OFS-0777 Silicone enhances release of tannins, leading in some cases to more greyish appearance
- 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)

1. CTM: Corporate Test Method, copies of CTM's are available on request.

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

XIAMETER™ OFS-0777 Siliconate is a water-dilutable solution of potassium methyl siliconate designed to impart water repellency to a wide variety of surfaces. Supplied at a concentration of 40 percent in water, XIAMETER™ OFS-0777 Siliconate is usually diluted to a concentration of 3 percent or less before application. The siliconate reacts with carbon dioxide in the air to form an insoluble water-resistant treatment within 24 hours.

How to Use

As a Surface Treatment

XIAMETER™ OFS-0777 Siliconate 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 XIAMETER™ OFS-0777 Siliconate, 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, XIAMETER™ OFS-0777 Siliconate 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 XIAMETER™ OFS-0777 Siliconate and the surface being treated. Carbon dioxide streams do not appear to reduce the cure time appreciably.

Application Methods

Dilute solutions of XIAMETER™ OFS-0777 Siliconate 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 XIAMETER™ OFS-0777 Siliconate, 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, XIAMETER™ OFS-0777 Siliconate can be diluted such as to reach active content as low as 1%.

In formulation aimed at being applied by brushing/rolling/dipping, XIAMETER™ OFS-0777 Siliconate 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 XIAMETER™ OFS-0777 Siliconate 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. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

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.

Shipping Limitations

DOT Classification: Corrosive Material.

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, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Table 1:

Performance¹ of XIAMETER™ OFS-0777 Silicone 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

1. Federal Specification SS-W-110C Testing – sample supported in 1/4 inch (6 mm) of water for 72 hours
2. Calculation is based on weight gain of control
3. Calculation is based on weight of block before soaking
4. 1" x 1" x 4" (25 x 25 x 102 mm) blocks of Briar Hill sandstone
5. 1" x 1" x 4" (25 x 25 x 102 mm) blocks of Indian limestone

Table 1:Performance¹ of XIAMETER™ OFS-0777 Silicone on Various Substrates (Cont.)

Substrate	% Active Total Solids	% Water Exclusion vs. Control	% Weight Absorption
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
Illinois Common	3.0	96	0.7
Brick	5.0	96	0.7
(Light Red)	control		17.2

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