



## High Density, Microsilica

Repair/Resurfacing Mortar

Item# RCM01 Revised: 10/15/2014

### Description

Epoxytec Mortartec Silicate™ is an industrial-grade blend of Portland cement, graded silica sand, fibers and silica fume. The mortar may be hand or spray applied, typically from ½" to 2" in depth. Uses include repairing concrete walls, ceilings, lining brick or concrete infrastructure, etc. Mortartec Silicate™ provides an extremely dense matrix and will accept coatings at earlier ages than typical Portland cement repair products.

### Typical Uses

Any concrete and masonry surfaces where rehabilitation of an existing structure requires enhancement of the structural integrity and /or there is a need to stop inflow and infiltration.

- Industrial infrastructure repair / resurfacing
- Sanitary sewers / manholes / lift stations
- Wastewater treatment plants
- Water treatment facilities

### Surface Preparation

Remove all loose concrete, brick or mortar from affected area by mechanical means. Surfaces shall be free of paints, oils, dirt, dust, curing compounds, sealers, form release agents or any material that would prevent mortar from coming into contact with the open pores of the concrete. Shot blasting, sandblasting, chipping and high pressure water blasting (3,500 psi) are all excellent surface preparation methods. Smooth concrete surfaces may require etching with muriatic or sulfamic acid, then thoroughly cleaned with pressure washer. Dampen area to achieve a saturated, surface dry condition (SSD). Leaving no puddles.

Must prepare cured Mortartec Silicate™ with a light brush blast or high pressure (3000+ psi) water, with rotating nozzle prior to top coating to remove all surface efflorescence, curing agents, and laitance.

### Application Method

NOTE: [The material will flash set if contaminated with calcium aluminate cement.] Ensure proper SSD prior to starting. Make sure all equipment for mixing, pumping, etc. are free from any calcium aluminate cement or products that contain calcium aluminate cement. Begin by adding 1 gallon clean water to mixing vessel and then add 1 bag (60#) Mortartec Silicate™. Adjust water as needed (up to 1.4 gallons) to provide proper consistency for placing by hand or pump sprayer. Apply in successive lifts to desired thickness. Use brush, float or trowel to achieve desired texture.

### Curing

Damp curing may be necessary to prevent rapid drying of mortar. For ultra-dry environments or extreme porous substrate (ie- block concrete), treat first with a scratch coat prior to build-up.

### Limitations

Ambient and surface temperatures must be 38° F and rising during application. Protect from rain until initial set has been achieved. To avoid flash setting; Do not contaminate Mortartec Silicate™ with other type cements.

- Minimum thickness: 1/2 inch
- Maximum thickness: 2 inches per pass, if rebuilding requires more depth, wait for the gel time to set in order to hang multiple coats in successive applications (1/2 hr @ 85F)

If applying any coating technology as a top coat, after the Mortartec Silicate™ cures, a light brush blast or high pressure water blast (3000+ psi with rotating nozzle) will be required to prepare the surface for accepting top coat technologies



# Mortartec Silicate™

## Storage & Handling

- Shelf life: 12 months, sealed.
- Storage: Store in a dry area away from direct sunlight. The product should be conditioned to between 60° F and 95° F before use.

## Packaging & Color

- 60 lb. / 27 kg multiwall bags (grey) Item# RCM01-60
- 50 lb. plastic pail. (grey) Item# RCM01-50P

## Coverage

Volume yields: 60 lb. bag yields approx. 0.54 cu.ft. and will cover 12.5 Sq. ft. at a 1/2 inch thickness. (50 lb Pail Yields approx. 0.49 cu. Ft.)

## Clean-up

Clean up is simple and easy with soap and water. Rinse tools before material hardens.

## Health & Safety

Health Precautions: This product contains Portland cement and crystalline free silica. Avoid breathing the dust. Exercise care, as with handling any chemical construction product.

Safety Precautions: Use adequate ventilation. Use of a NIOSH/ MSA approved dust respirator, safety goggles and chemical resistant gloves are strongly recommended. Remove contaminated clothing immediately.

First Aid: Skin Contact: wash thoroughly with soap and water. Eye Contact: flush immediately with water and contact a physician. Respiratory Problems: remove affected person to fresh air immediately and contact a physician. Hygiene: wash hands immediately after use. Wash clothing before reuse.

Spills: Collect in appropriate container. Uncured material may be removed with water.

Disposal: Dispose of in accordance with local, state or federal regulations.

Warning: KEEP CONTAINER CLOSED WHEN NOT IN USE. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY BY A QUALIFIED TECHNICIAN.

Consult the Material Safety Data Sheet for further health and safety information.

## Technical Properties

### Compressive Strength

ASTM C-109	
1 Day	2,100 psi
7 Days	7,060 psi
28 Days	10,400 psi

### Flexural Strength

ASTM C-293	
7 Days	605 psi
28 Days	960 psi

### Bond Strength

ASTM C-882 (mod)	
1 Day	380 psi
7 Days	900 psi
28 Days	1695 psi

### Shrinkage (inch/inch)

ASTM C-596	
28 Days	(0.001)

### Splitting Tensile

ASTM C-496	
24 hour	420 psi
28 Day	750 psi

### Modulus of Elasticity

ASTM 469-02	
24 Hour	3,433,333
28 Day	4,533,333

### Freeze / Thaw

ASTM C666	100 cycles
	- no damage

### Chloride Permeability

ASTM C-1202	205 Coulombs
28 Day	

Unit Weight	128.3 PCF
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\* Safety: Consult Material Safety Data Sheet for all material safety information.



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