

PRODUCT NAME

Gem-Crete™ TO ST
(Thin Overlay Standard)
Exterior, self-leveling traffic topping



MANUFACTURER

Gemite® Products Inc.

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FEATURES

- High flow material, self-leveling
- High strength and abrasion resistance (wet or dry)
- Superior workability & easy application
- High bond to wet concrete
- Breathable
- Highly freeze/thaw resistant
- Nonflammable & nontoxic
- Economical

PRODUCT DESCRIPTION

Basic Use

Surfacing and waterproofing of parking decks, industrial floors, loading docks and patios. Waterproofing and repair of concrete exposed to high concentrations of salt solutions and weak acids.

Composition and Materials

Gem-Crete TO ST is a Portland cement based, polymer modified material, especially formulated for protection and leveling of concrete. The combination of polymers and inorganic fillers provides excellent resistance to water, salt and weak acids. The chemical composition and aggregate formulation provides high abrasion resistance.

Limitations

Do not apply *Gem-Crete TO ST* when the temperature is expected below 4°C (40°F) within 48 hours or when rain is imminent. Use Hot Weather concreting precautions when applying in temperatures exceeding 25°C (77°F) or under sunny and windy conditions.

Health and Safety

Gem-Crete TO ST is nontoxic and nonflammable. Your skin might be sensitive to cement. We recommend use of rubber gloves. Avoid contact with eyes and prolonged contact with skin. If contact occurs, flush immediately with water. Seek medical advice if irritation occurs. Harmful if digested. Keep product *out of reach of children*. **FOR INDUSTRIAL USE**

ONLY. Consult MSDS for additional information.

Color

Available in industrial grey and light grey.

Packaging

Gem-Crete TO ST premix is packaged in 22.7 kg (50 lb) bags.

Yield

Gem-Crete TO ST premix yields approximately 13.3 L (0.47 ft³) and covers approximately 2.2 m² @ 6 mm (22.6 ft² @ 1/4") thickness per bag.

The actual coverage will depend on surface roughness and the thickness applied. The applicator must carry out a sample application to determine the actual coverage for the given substrate and application thickness.

Storage and Transportation

Gem-Crete TO ST when stored on pallets in a dry, cool area, free-from moisture, has a shelf-life of 12 months. Packaged 55 bags (Premix) per pallet.

TECHNICAL DATA (Industrial Grey)

Modulus of Rupture (ASTM C348)	4.95 - 5.4 MPa (720 - 790 psi)
Compressive Strength (ASTM C109)	34.5 - 37.9 MPa (5,000 -5,500 psi)
Freeze/Thaw Resistance (ASTM C666, Procedure A)	less than 1% weight loss after 300 cycles
Direct Tension Bond	1.50-2.0 MPa (300 - 400 psi)
Salt Scaling Resistance (ASTM C672)	after 50 freeze/thaw cycles, no scaling
Flow time	15-20 minutes
Toxicity	nontoxic in wet or dry form

INSTALLATION

Current Guide Specification and Application Instructions contain additional information specific to each application and must be followed. Gemite's Technical Service must be consulted before starting a project to ensure that the correct surface preparation and application procedures are followed.

Surface Preparation

Remove all loose, delaminated or oil contaminated concrete. Clean the surface by shotblasting, scarifying or a high pressure waterblast with sand to remove laitance, dust and dirt and open capillary porosity.

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03550 Concrete Topping
07570 Traffic Topping

Reinforcing Steel

Clean the reinforcing steel and apply two coats of *Fibre-Prime* as rustproofing layer. Patch deeper holes (over 9 mm, 3/8 in) with *Fibre-Patch OV* or *ST*.

Crack Treatment

All cracks in the substrate must be treated separately by cutting out a groove, approximately 2 1/2 in (6 cm) wide and 1 1/2 in deep and fill it with *Fibre-Patch OV*. Gem-Crete TO ST must not be applied over any moving cracks or joints. Gemite will not be responsible for any cracks that are result of existing cracks, joints or cracks that may develop after installation of *Gem-Crete TO ST*.

Mix Design	Metric	US
<i>Gem-Crete TO ST</i> Premix	22.7 kg	50 lb
Water	5.0-5.2 L	1.32-1.37 USG

Mixing

Use a paddle or helix screw type mortar mixer. Place most of the water into the mixer. Gradually add the dry powder and mix thoroughly until completely free of lumps. Adjust the water for suitable workability. Do not over mix. Convey mixed material to the point of placement in clean, uncontaminated containers. The flow time is approximately 15-20 minutes, depending on the temperature and relative humidity. Measure the mixing water, do not eye-ball it - DO NOT OVER WATER - the excess of water is indicated by severe bleeding and sand sedimentation.

Thickness of Application

Gem-Crete TO ST can be applied in thickness varying from 1/4 in (6 mm) to 1 in (25 mm) in one coat. For thicker applications extended *Gem-Crete TO ST* with washed, well graded, 3/8 in (9 mm) pea gravel - the maximum size aggregate must not exceed 1/3 of thickness of the applied layer. Blend together 1:1 volume of *Gem-Crete TO ST* and pea gravel. The surface will not be straight after placement and will require a thin, 1/4 in (6 mm) coat of Gem-Crete TO ST - prime the surface again with Primer #410.

Application

The substrate must be clean and solid - free of wax, oil, asphalt, latex paints, sealers, gypsum residues or any contamination that may act as bond-breaker. Use shotblast, grinding and other methods to clean. Do not use acid etching or paint removers.

Contact Gemite Technical Service for advice. Primer the surface with *Primer # 410* and let dry until it is clear, but still tack free. Apply *Gem-Crete TO ST* by pouring and use a spreader to spread the material to an even smooth, leveled surface.

Curing

Air dry cure for 2-3 days. Protect against rapid evaporation, or plastic shrinkage cracking may occur. When working under tarps at freezing temperatures, use electrical heaters. Avoid using propane heaters to prevent "carbonation" of the material.

Coating/Sealers

Gemite Products Inc. Offers a number of sealers and coatings that may provide an additional protection or color. Please contact Gemite Technical Service for the type of sealers/coating and the required drying times for *Gem-Crete TO ST* to safely apply them.

Clean Up

All tools must be cleaned with water immediately after use. Cured material can only be removed mechanically.

AVAILABILITY AND COST

Gem-Crete TO ST is available worldwide. Contact the manufacturer for the name of the nearest Representative/Distributor and current pricing information.

MAINTENANCE

None required.

WARRANTY

A limited twelve (12) month Material Replacement Warranty is available. For complete details contact Gemite's Head Office.

TECHNICAL SERVICE

For technical advice on suitability of *Gem-Crete TO ST* for specific application, specification assistance and application advice, contact Gemite Products Inc. Technical Service in the USA at (888) 443-6483, in Canada at (905) 672-2020.

Short Specification

The self-leveling exterior topping (concrete surfacing) will be *Gem-Crete TO ST*, polymer modified mortar manufactured by Gemite Products Inc., (888-443-6483 (USA) or 905-672-2020 (Canada).