



## LOCTITE GeoSpray Geopolymer Mortar

WATER/WASTEWATER

**LOCTITE GeoSpray** geopolymer is a high-performance fiber reinforced mortar specifically designed for structural rehabilitation. This high-strength, ultra low porosity material is made from natural mineral polymers and industrial waste streams. The LOCTITE GeoSpray system is designed for use through multiple application techniques including pouring, placing, trowelling, spraying, or centrifugal casting.

### BENEFITS

- › Provides physical properties associated with cement mortars, but with the chemistry similar to that of an engineered stone
- › Prevents cold joints between layers from its unique chemical nature
- › Can be applied monolithically to any shape pipe, including right angles and curves, boxes and ellipses
- › Safe and sustainable

### APPLICATIONS:

- › Sewers
- › Culverts
- › Pipes
- › Manholes
- › Sediment Basins
- › Wet Wells

### TYPICAL USES:

LOCTITE GeoSpray geopolymer can be used for rehabilitation of pipes and structures in the Civil Infrastructure and Industrial Markets.

TEST METHOD	DURATION	LOCTITE GeoSpray
Compressive Strength ASTM C-39/C-109	1 Day 28 Days	Min. 2,500 psi / 17 MPa Min. 8,000 psi / 55 MPa
Flexural Strength ASTM C-78	7 Day 28 Days	750 psi / 5.2 MPa 1500 psi / 10.3 MPa
Bond Strength to Concrete ASTM C-882	1 Day 28 Days	Min 900 psi / 6.2 MPa Min. 2,500 psi / 17 MPa
Set Time ASTM C-807 Initial Cure Time	Initial Set Final Set	60 - 75 Minutes 90 - 110 Minutes
Freeze Thaw Durability ASTM C-666	300 Cycles	100% Zero loss
Shrinkage ASTM C-1090	28 Days	0.00% @ 65% R. H.
Tensile Strength ASTM C-496	28 Days	Min. 800 psi / 5.5 MPa

Data shown above reflects results in laboratory controlled conditions.  
Reasonable variation of data to be expected.



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### **COMPOSITION**

A proprietary micro-fiber reinforced ultra dense geopolymer mortar designed for mechanical pumping and spraying. LOCTITE GeoSpray is an inorganic polymeric system that adheres strongly to prepared cement surfaces and itself.

### **CHARACTERISTICS**

A dark grey mortar with near-zero porosity. Largest particle size: 3.0 mm.

### **YIELD AND COVERAGE**

Yields 0.43 ft<sup>3</sup> (0.012 m<sup>3</sup>) per 50 lbs. For one 50lb bag, coverage is 10.3 ft<sup>2</sup> at 0.5" depth (0.96m<sup>2</sup> per 12mm depth)

### **PACKAGING**

LOCTITE GeoSpray is available in 50lb (22.7kg) sealed bags or in 1000 lbs (454kg) super sacks.

### **CLEANING AND PREPARATION**

The surface shall be thoroughly cleaned. Use high-pressure water blasting with a minimum of 3500 psi (or as required by local provision) to clean and free all foreign material, including dirt, grit, roots, grease sludge and other materials that may be attached to the surface. All loose or defective brick, grout, should be removed prior to application. When grease and oil are present, an approved detergent, muriatic acid or hot water may be used with the high-pressure cleaning as needed. All materials resulting from the cleaning of the pipe shall be removed prior to application. Well adhered Bitumen coatings on CMP pipe need not be removed. Active infiltration should be sealed to the greatest extent possible prior to application. The surface existing host structure can be damp at installation.

### **MIXING**

Do not exceed a 0.20 w/c ratio. Always add LOCTITE GeoSpray to the water. Follow normal industry standards for batching and mixing.

### **WORK TIME**

Working time is 30-45 minutes at 80°F (27°C) if mixed continuously.

### **APPLICATION**

Once mixed to proper consistency and homogeneity, LOCTITE GeoSpray can be hand troweled as a repair mortar for crack repair prior to spraying. LOCTITE GeoSpray should be pumped from a horizontal mix auger cavity via an adjustable rotor stator pump through a hose for delivery to the appropriate application device (spray nozzle or spinner head), and shall be applied to a damp surface.

### **FINISHING**

If necessary, troweling of materials can begin following the spray application. Initial troweling shall be in an upward motion, to compress the material into voids and solidify the pipe wall. Take precautions not to over trowel.

LOCTITE GeoSpray can be finished using a magnesium float, wood float, sponge float, broom or brush, depending on the surface texture desired. Do not use a steel trowel.

### **CURING**

Optimum curing occurs in a moist and moderate environment. General underground conditions are usually adequate to meet this requirement. If dry and/or hot conditions are present, the use of a wind barrier and fogging spray will be required. During hot weather conditions, chilled water may be used to mix LOCTITE GeoSpray geopolymer. LOCTITE GeoSpray geopolymer cement should be maintained at a temperature lower than 90°F (32°C). Standard industry practices may be used to maintain proper temperature.

Alternatively, LOCTITE GeoSpray should not be placed when the temperature in the curing environment is below 37°F (3°C). During cold weather conditions, heaters, thermal breaks, and other methods may be used to maintain temperature above that threshold.

### **QUALITY CONTROL & MATERIAL TESTING**

For each section length designated by the owner in the contract documents or purchase order, LOCTITE GeoSpray will be collected at the end of the hose near the discharge point. Use 4" by 8" cylinders in accordance with Test Method ASTM C 39/39M.

### **HEALTH & SAFETY**

LOCTITE GeoSpray, is a cementitious powder, is alkaline and may cause significant skin and eye irritation. Adequate health and safety precautions should be observed during all storage, handling, use and drying periods. For safety and health precautions, reference the current version of the Safety

Data Sheet for LOCTITE GeoSpray. When using LOCTITE GeoSpray in a confined space or closed area, consult the current OSHA or ANSI bulletins on safety requirements. Do not take internally. If swallowed, call a physician immediately.

### **STORAGE**

LOCTITE GeoSpray geopolymer should be stored in a cool, dry location. Stored under proper conditions, shelf life is one year.

### **WARRANTY**

GeoTree Solutions warrants this product to be free of defects in material and manufacturing. Should the product prove to be defective, the liability to GeoTree Solutions shall be limited to replacement of the product, exfactory. GeoTree Solutions makes no warranties as to merchantability or fitness for a particular purpose. This warranty is in lieu of all other warranties expressed or implied. Users should determine the suitability of the product for the intended use and assume all risk and liability in connection therewith.

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