

Reliner MSP[®] Cement

Repair Mortar for Main Sewers, Water Treatment Plants, Pipes and Manholes

GENERAL

Reliner MSP[®] Cement is for rehabilitation of concrete, brick and Fiberglass sewer manholes to be repaired in place under different field conditions. Use it for both new construction and adapting old existing manholes, main sewers, pipes, WTP structures, and culvert pipes for new uses beyond their usual design life. The Reliner MSP[®] contains silica and aluminum rich microsilica geopolymer, pozzolan, fly ash binders, and select admixtures that enhance performance and workability during placement. The Reliner MSP[®] Geopolymer mortar resist hydrogen sulfide (H₂S) gas deterioration, [MIC] and protects against chloride induced corrosion and chemical attack.

APPLICATIONS

The Reliner MSP[®] mortar contains polypropylene fibers to produce a crack resistant lining. Apply as a spray applied shotcrete [dry gunite], hand, dry pack for walls and structures; and as a centrifugal spin cast coating for reinstatement of manholes, pipes and sewers.

- Stops water infiltration/ exfiltration.
- Restores structural integrity in main sewers, tunnels, lift station concrete, pipes, corrugated culvert pipes (CMP), dams, bridges, and secondary containments.
- Protects against chloride induced corrosion in marine applications.
- Adds freeze thaw durability for road and bridge repairs.

PROTECTION LEVELS

The Reliner MSP[®] mortar reduces the permeability of the cement paste matrix and protects against aggressive chemicals found in sewers. The mortar protects against sulfates, salt water, chlorides, water vapor transmission, oils, grease, gases and mild acids to pH 2.0.

COVERAGE

Approximately 7.4 ft² at 1 - inch thickness.

Yield = approximately 0.63 ft³ per 75 lb. bag.

For estimating purpose adjust for waste, cut-off and any other excess that reduces the coverage.

MIXING

Mix with clean, potable water. Do not add Portland cement, admixtures or other ingredients. Trail batches are recommended.

Working time: 139 minutes at 73°F

Density: 135 ± 2 pcf

TECHNICAL INFORMATION

Property	psi		
Compressive Strength	24-h	7-d	28-d
ASTM C 109	1,260	7,930	10,180
Splitting Tensile Strength			
ASTM C 496	705		
Flexural Strength			
ASTM C 78	660	1,000	
Flexural Strength			
ASTM C 293	1,215	1,855	
Bond Strength/ Slant Shear			
ASTM C 882	2,730		
Modulus of Elasticity			
ASTM C 496	3.77 x 10 ⁶		
Shrinkage at 50% ± 4% RH			
ASTM C 596	-0.131		
Chloride Permeability			
AASHTO T 277	100		
ASTM C 1202	very low		
Sulfate Resistance-56 days:			
ASTM C 267			
2,000 ppm (sulfuric acid)	0% weight loss		
	No defects observed		
20,000 ppm (sulfuric acid)	0.05% weight loss		
	Slight scaling and discoloration observed		
Unit Weight	135 ± 2		

STORAGE

Store the product in a dry place up off the floor. The cement is stocked in a 75-lb double paper lined bag.

CURING/ PLACEMENT

Place immediately by hand, shotcrete or gunite methods. Follow ACI 302, "Guide for Concrete Floors and Slab Construction" and ACI 308 "Standard Practice for Curing Concrete" to avoid any shrinkage cracking problems due to decreased bleeding. Follow ASTM C 109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. [50-mm] Cube Specimens for determination of the compressive strength of the mortar. The temperature of the air in the vicinity of the mixing slab, the dry materials, molds, base plates, and mixing equipment shall be maintained between 68 and 81.5° F [20 and 27.5° C]. Make two or three specimens from a batch of mortar for each period of test age. Immediately upon completion of molding test specimens, place the test specimens in a moist closet or moist room [curing box] from 20 h to 72 h. Protect the specimens from hot or cold weather extremes, air movement, dry conditions, direct sunlight and vibration. Cure as soon as possible to prevent water evaporation. Cover with plastic sheets, wet burlap or an acceptable liquid membrane-forming curing compound per ASTM C 309. The curing compound shall contain a minimum of 25 % solids and prevent water loss of up to 0.4-kg/m³ in 72 hours. Apply the curing compound in layers while the cement is still soft. Ambient temperatures and varying job conditions will govern specific curing. Hot or cold weather situations may require special care, therefore, keep the cement moist and at a favorable temperature during the early hardening period. Make no application when the ambient temperature is less than 40°F or freezing temperatures is expected within 24-hour. Trail batches are recommended.

EQUIPMENT

The applicator shall use a Sewer Manhole Masterssm Repair Trailer or a manufacture's approved equal.

SAFETY/ STORAGE

Caution: May Cause Eye and Skin Irritation. Clean up with soap and water. Avoid prolong exposure. Wash with water immediately after handling. If skin problems arise, flush with water and get medical help. Store product up off the floor (ground) in a dry cool place. The cement is stocked in a 75-lb bag. Keep out of reach of children.

TECHNICAL SERVICE

Manufacturer provides technical and on-site assistance within 48-hours' notice.

WARRANTY INFORMATION

The manufacturer warrants this product to be of good quality and free from defects within the warranty period. The manufacturer's liability and the Buyer's single remedy in connection with the product shall be limited to replacement of the product not conforming to this warranty. The manufacturer reserves the right to determine whether any claim is specifically related to another cause. The corporation makes no other warranties, either expressed or implied and in no event intends to infringe on any established patents or trademarks.

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