



MP Grout

High Flow, High Strength, Non-Shrink Grout

DESCRIPTION

MP Grout is a blend of portland cement, special admixtures and proprietary aggregates designed to provide high flexural and compressive strength performance from stiff to fluid consistencies. **MP Grout** is non-metallic, non-shrink and contains no chlorides.

USES

MP Grout is ideal for a wide variety of precision applications that include:

- **Precision Grouting:** Machinery bases, compressors, punch presses, generators
- **Structural Grouting:** Steel Columns, precast columns, crane rails, beams
- **Underwater Grouting:** Form and pump applications
- **Anchoring:** Guard rails, sign posts, dowels, rods, bolts
- **Pumping Applications:** Excellent flowability

BENEFITS

- Versatile: Plastic or flowable consistency
- Cost effective: Extendable up to 30%
- Strength: Attains high compressive strengths at specified water ratios
- Thixotropic: High flow restored by agitation
- Non-Corrosive: Will not rust
- Security: Maximum, uniform bearing support
- Performance: Joins, supports and anchors
- Hardens free of bleeding or segregation
- Consistent: Strict Quality Control testing and standards

STANDARDS

MP Grout has been specifically formulated to exceed the requirements of ASTM C-1107 and Corp of Engineers CRD C-621. When tested in accordance with ASTM C-827, **MP Grout** yields a controlled, positive expansion. City of LA Research Report #25526.

SURFACE PREPARATION

All surfaces in contact with **MP Grout** shall be free of dirt, oil, grease, laitance and other contaminants that may act as bond-breakers. All unsound concrete should be removed to ensure a good bond. Smooth, dense surfaces need to be mechanically abraded to provide necessary bonding requirements. Mechanically prepare the substrate to a minimum CSP 5 following ICRI Guideline 03732 to allow proper bonding. ACI recommends that the area to be grouted should be saturated for 24 hours before placement. Remove any standing water. Substrate should be saturated, surface dry (SSD). Maintain contact areas between 40°F (4°C) and 90°F (32°C) prior to grouting and during initial curing period.

FORMING

Method of forming must provide for rapid, continuous grout placement. For pourable grout, construct forms to retain grout without leakage. Forms should be coated with **US SPEC Form Release** for easy removal.

PHYSICAL PROPERTIES*

Compressive Strength (ASTM C-109)

SET	1 DAY	3 DAYS	7 DAYS	28 DAYS
A STIFF	6,500 psi (44.79 MPa)	7,900 psi (54.43 MPa)	9,800 psi (67.52 MPa)	11,250 psi (77.51 MPa)
B PLASTIC	4,200 psi (28.96 MPa)	6,200 psi (42.72 MPa)	7,000 psi (48.23 MPa)	8,500 psi (58.57 MPa)
C FLOWABLE	4,000 psi (27.58 MPa)	5,900 psi (39.96 MPa)	6,500 psi (44.79 MPa)	7,800 psi (53.74 MPa)
D FLUID	3,500 psi (24.13 MPa)	5,000 psi (34.47 MPa)	6,000 psi (41.37 MPa)	7,500 psi (51.71 MPa)

Rate of Set (ASTM C-266)

SET	INITIAL	FINAL
B PLASTIC	1:09	2:35
C FLOWABLE	2:01	3:40
D FLUID	2:34	4:41

B - 100% - 125% flow table (ASTM C-230, 5 drops in 3 seconds)

C - 125% - 145% flow table (ASTM C-230, 5 drops in 3 seconds)

D - 28 second flow cone method (ASTM C-939)

Height Change - Moist Cure Hardened (ASTM C-1090**)

AGE	% HEIGHT CHANGE
1 DAY	+0.009%
3 DAYS	+0.016%
7 DAYS	+0.017%
28 DAYS	+0.021%

Early Height Change (ASTM C-827**)

AGE	% HEIGHT CHANGE
Final Set	+0.062%

Flexural Strength (ASTM C-78**)

AGE	FLEXURAL STRENGTH
3 DAYS	700 psi (4.82 MPa)
7 DAYS	730 psi (5.03 MPa)
28 DAYS	1,130 psi (7.79 MPa)

Bond Strength (ASTM C-882**)

AGE	APPLIED LOAD	SHEAR BOND STRENGTH
7 DAYS	24,700	3,000 psi (20.68)

*Notes: 73°F (22.8°C) 55% humidity

A = 2.5 qts B = 3.5 qts C = 4 qts **D = 4.5 qts

Packaging: 50 lb (22.7 kg) bag, 63 bags per pallet



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MIXING

For best results, use a mechanical mixer with rotating blades. Pre-wet mixer and empty excess water. Place cool, clean potable water in mixer, then add dry material. Mix on low RPM for a total of 3 to 5 minutes to achieve desired consistency. Mix only enough grout that can be placed within working time. For plastic consistency, use 3.5 qts of water. For flowable consistency, use 4 qts of water. For fluid consistency, use 4.5 qts of water. These mix ratios provide a guideline. The actual water demand will depend on type of mixer used, water temperature and ambient temperature. Adjust the water to achieve the desired flow. Recommended flow is 20 to 30 seconds using the ASTM C-939 Flow Cone Method. For placements greater than 3" depth, **MP Grout** must be extended by up to 30%, by weight, with clean, washed and dried 3/8" (1 cm) pea gravel. Do not blend excess water as this will cause bleeding and segregation. Do not use any other admixtures or additives.

PLACING

Grout should be placed using established procedures according to American Concrete Institute recommendations. **MP Grout** can be placed by pumping, pouring, rodding or strapping. Mechanical vibration may cause segregation of aggregates. Place grout on one side of area. Let grout flow to opposite and adjacent sides to avoid entrapment of air and uneven bearing of the grouted surface. When necessary, provide vent holes. Grout should continue to be placed until it protrudes from the entire perimeter area. Grout "head" and excess grout may be removed after initial set.

FINISHING & CURING

Follow standard ACI curing practices. Do not disturb formwork or grout for 24 hours. Use wet rags or burlap to cure for 6 hours after placement. After 6 hours, remove rags from exposed surfaces and cure with a membrane forming curing compound such as **US SPEC Maxcure Resin Clear, Hydrasheen 15%** or **CS-25-1315**. For best results, exposed grout should extend downward at a 45° angle from edge of base.

STORAGE

Normal cement storage and handling practices should be observed. Store material in an interior, cool, dry place. Shelf life is one year in original, unopened container.

LIMITATIONS

In addition to limitations already mentioned, please note the following. Do not apply when the surface or ambient temperature is below 40°F (4°C) or when the temperature is expected to fall below 40°F within 48 hours. When grouting at minimum temperatures, ensure surfaces in contact with grout do not fall below 40°F until final set has been achieved and grout has reached 3,000 PSI. Do not apply over surfaces that are frozen or contain frost. Do not apply over any active faults or cracks in the substrate without addressing any movement that may occur. Do not use as a patching or overlay mortar or in unconfined areas. Normal conditions working time is 30 minutes. Setting time will speed up in hot weather and slow in cold weather. For hot and cold weather applications, contact your US SPEC manufacturer's representative.

REGULATORY

Read and follow application information, precautions and Material Safety Data Information.

Right-to-know

This product contains Portland Cement (CAS#65997-15-1) and Crystalline Silica (CAS# 14808-60-7)

HMIS

Health 1, Fire 0, Reactivity 0

Prop 65

Warning! This product contains Crystalline Silica, a chemical known to the State of California to cause cancer or reproductive toxicity.

VOC Content

0 g/L

CAUTION

EYE AND SKIN IRRITANT

Contains Portland Cement (CAS# 65997-15-1) and Crystalline Silica (CAS# 14808-60-7). Do not allow contact with eyes or skin. Avoid breathing dust - silica may cause serious lung problems. There is limited evidence silica is a carcinogen. The use of gloves, goggles, dust masks and other protective clothing is recommended. If cement or sand particles get into eyes, rinse immediately with clean water and seek prompt medical attention.

TECHNICAL SERVICE

Contact your US SPEC manufacturer's representative for the most current product information.

US MIX Co.

112 South Santa Fe Drive

Denver, CO 80223

Tel: 303.778.7227 Fax: 303.722.8426

Web Site: www.usspec.com

NOTICE OF LIMITED WARRANTY US MIX Co. (manufacturer) warrants to buyer that this product at the time and place of shipment is of good quality and conforms to the manufacturer's specifications in force on the date of manufacture when used in accordance with the instructions hereon. Manufacturer cannot warrant or guarantee any particular method of use, application or performance of the product under any particular condition. This limited warranty cannot be extended or amended by manufacturer's sales, people, distributors or representatives or by any sales information, specifications of anyone other than the manufacturer. Liability under this warranty is expressly limited to refund of the purchase price.

LIMITATION OF WARRANTIES AND LIABILITY Buyer assumes all risks associated with the use of this product. Manufacturer expressly disclaims all warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose and all other warranties otherwise arising by operation of the law, course of dealing, custom, trade or otherwise. Buyer's exclusive remedy if this product is proven to be defective is limited to refund of purchase price by the manufacturer. Refund shall only be available if the buyer notifies manufacturer in writing within thirty days following discovery of any defect. Written notice shall be forwarded to US MIX Co. at 112 South Santa Fe Drive, Denver, Colorado 80223. No claim can be made twelve months after purchase of the product. Twelve months after the purchase manufacturer's duties with respect to the product and limited warranty shall be presumed to have been satisfied. Manufacturer in no event is liable for consequential damages.

Yield: 50 lbs (22.7 kg) will fill approximately 0.43 ft³ (0.012 m³) when 4.5 qts mixing water is used.