



# Premium Grout

## High Performance, Non-Shrink Grout



### Description

**Premium Grout** is a blend of specialty cements, admixtures and proprietary aggregates designed to provide high flexural and compressive strength performance from damp pack to fluid consistencies. **Premium Grout** has been specifically formulated to exceed the requirements of ASTM C-1107, Grade C, Corp of Engineers CRD C-621 and AASHTO T-260. **Premium Grout** is non-metallic, non-shrink, non-gas forming and contains no chlorides or aluminum powders.

### Uses

**Premium Grout** is suited 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
- **Anchoring:** guard rails, sign posts, dowels, rods, bolts
- **Pumping applications:** Excellent flowability

### Benefits

- Fluidity: highly fluid and extremely placeable
- Non-Shrink: pre and post hardening expansion
- Strength: attains high compressive strengths at specified water ratios
- Performance: joins, supports and anchors
- Hardens free of bleeding and segregation
- Consistent: strict Quality Control Testing and standards

### Surface Preparation

All surfaces in contact with **Premium Grout** shall be free of dirt, oil, grease, laitance and other contaminants. All unsound concrete should be removed to ensure a good bond. Smooth, dense surfaces may need to be mechanically abraded to provide necessary bonding requirements. ACI recommends that the area to be grouted should be saturated for 24 hours before placement. Remove any standing water. Surface should be saturated, surface dry (SSD). Maintain contact areas between 45°F(7°C) and 90°F (32°C) prior to grouting and during initial curing period. For hot and cold weather grouting applications, contact your US SPEC manufacturer's representative.

### Physical Properties

Compressive Strength (ASTM C-109\*)

SET	1 DAY	3 DAYS	7 DAYS	28 DAYS
A PLASTIC 1	3,800 psi 26.18 MPa	6,100 psi 42.03 MPa	6,900 psi 47.54 MPa	11,000 psi 75.79 MPa
B FLOWABLE 2	3,200 psi 22.05 MPa	5,500 psi 37.90 MPa	6,600 psi 45.47 MPa	9,600 psi 66.14 MPa
C FLUID 3	2,800 psi 19.29 MPa	5,100 psi 35.14 MPa	6,400 psi 44.10 MPa	9,500 psi 65.46 MPa

\*Notes: 73°F (22.8°C) 55% Humidity A = 3.5 qts B = 4 qts C = 4.25 qts

Rate of Set (ASTM C-266\*)

SET	INITIAL	FINAL
A - PLASTIC 1	:40	3:15
B - FLOWABLE 2	1:02	3:45
C - FLUID 3	2:02	4:10

\*Note: 1 - 100%-125% flow table (ASTM C-230, 5 drops in 3 seconds)  
2 - 125%-145% flow table (ASTM C-230, 5 drops in 3 seconds)  
3 - 28 second flow cone method (ASTM C-939)

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

AGE	% HEIGHT CHANGE
1 DAY	+0.01
3 DAYS	+0.03
7 DAYS	+0.05
28 DAYS	+0.05

Early Volume Change (ASTM C-827\*)

AGE	% HEIGHT CHANGE
1 DAY	+0.065

Split Tensile Strength (ASTM C-496\*)

AGE	SPLIT TENSILE STRENGTH
28 DAYS	410 psi (2.83 MPa)

Flexural Strength (ASTM C-78\*)

AGE	FLEXURAL STRENGTH
3 DAYS	400 psi (2.76 MPa)
7 DAYS	600 psi (4.13 MPa)
28 DAYS	1,000 psi (6.89 MPa)

Bond Strength (ASTM C-882\*)

AGE	APPLIED LOAD	SHEAR BOND STRENGTH
7 DAYS	34,125	2,500 psi (17.23 MPa)

\*Note: 100% of rupture occurred in dummy section

**Packaging:** 50 lb. bag (22.7 kg.) 64 bags/ pallet

**Yield:** 50 lb. (22.7 kg) yields approx. .43 ft<sup>3</sup> (0.012 m<sup>3</sup>) when 4 qts mixing water is used.

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GROUTS

## Forming

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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 a **US SPEC Form Release** for easy removal.

## Mixing

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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 1/2 quarts of water. For flowable consistency, use 4 quarts of water. For fluid consistency, use 4 1/2 quarts 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 30 to 35 seconds using the ASTM C-939 Flow Cone Method. For placements greater than 3" in depth, **Premium Grout** must be extended by up to 30%, by weight, with clean, washed and dry 3/8" (1cm) pea gravel. Do not blend excess water as this will cause bleeding and segregation. Do not use any other admixtures or additives.

## Placing

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Grout should be placed using established procedures according to American Concrete Institute recommendations. **Premium 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

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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. Exposed surfaces should be cured with a membrane forming curing compound such as **US SPEC Maxcure Resin Clear, Hydrasheen 15% or Hydrasheen 30%**. For best results, grout "head" should extend downward at a 45 degree angle from edge of base.

## Storage

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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 bags.

## Limitations

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In addition to limitations already mentioned, please note the following. 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

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

### Right-to-know

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

### 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

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### EYE AND SKIN IRRITANT

Contains Portland Cement (CAS# 65997-15-1) Contains Aggregates (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, and where appropriate, 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

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US Mix Products Company  
112 South Santa Fe Drive  
Denver, CO 80223  
Phone (303) 778-7227 Fax (303) 722-8426  
Web Site [www.usspec.com](http://www.usspec.com)

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