FORM & POUR CONCRETE MIX MS

PRODUCT NO. 1120-80, NR810065

DIVISION 3

03 01 00 Maintenance of Concrete
03 31 00 Structural Concrete

PRODUCT DESCRIPTION

QUIKRETE® Form & Pour Concrete Mix MS is a high strength, high flow, low shrinkage, pumpable material. It consists of Portland cement, microsilica, fine and coarse aggregate, air-entraining admixture and other approved ingredients for densification, shrinkage compensation, and increased freeze-thaw durability. It includes a migrating corrosion inhibitor for maximum corrosion protection. The product exceeds the compressive strength requirements of ASTM C387 and is tested according to ASTM C1202 for reduced permeability.

PRODUCT USE

QUIKRETE® Form & Pour Concrete Mix MS is designed for the following uses:

- Large volume, full depth structural repairs to concrete bridges, parking structures, industrial floors, and balconies.
- Structural repairs where the quantities or placement conditions make ready-mixed concrete impractical.
- Repairs using the form and pour technique on vertical surfaces such as walls and columns.
- General or keyway grouting where a nominal maximum aggregate size of 3/8 in (9.5 mm) is desirable.
- Leveling beds with a thickness of 2 in (50 mm) or more.

SIZES

- 80 lb (36.2 kg) bags
- 3000 lb (1360 kg) bulk bags

YIELD

- An 80 lb (36.2 kg) bag of QUIKRETE® Form & Pour Concrete Mix MS will yield approximately 0.6 ft^3 (17 L) at the recommended consistency

TECHNICAL DATA

APPLICABLE STANDARDS

- ASTM C33 Standard Specification for Concrete Aggregates
- ASTM C39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
- ASTM C78 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
- ASTM C157 Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar, and Concrete
- ASTM C191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C496 Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
- ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
- ASTM C672 Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals
- ASTM C882 Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
- ASTM C1202 Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
- ASTM C1611 Standard Test Method for Slump Flow of Self-Consolidating Concrete
- ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair
- ACI 305R Guide to Hot Weather Concreting
- ACI 306R Guide to Cold Weather Concreting
- ACI 347R Guide to Formwork for Concrete
- ACI RAP Bulletin 4 Surface Repair Using Form-and-Pour Techniques

PHYSICAL/CHEMICAL

Typical results obtained for QUIKRETE® Form & Pour Concrete Mix MS, when tested in accordance with the referenced ASTM test methods, are shown in Table 1.

INSTALLATION

SURFACE PREPARATION

All surfaces should be clean and free of foreign substances including corrosion present on reinforcing steel. Remove all spalled areas and areas of unsound concrete. The appropriate personal protective equipment should be worn. Preparation work done on the repair area should be completed by high pressure water blast, breaker hammer, or other appropriate mechanical means to obtain an exposed aggregate surface. Refer to current ICRI Guideline 310.2R for additional surface preparation information. For additional guidance please refer to ACI RAP Bulletin 4. For formwork please refer to ACI 347R. It is recommended to fill the forms with water 24 hours prior to placing the material to ensure there are no gaps in formwork and to ensure the substrate is in SSD condition. Make sure the forms a drained completely before pouring in QUIKRETE® Form & Pour Concrete Mix MS and ensure drainage holes are sealed. For horizontal applications the area must also be in SSD condition and no standing water should be left in the repair area.

MIXING

WEAR IMPERVIOUS GLOVES, such as nitrile when handling product.

Mechanically mix QUIKRETE® Form & Pour Concrete Mix MS for 4 to 5 minutes using a standard concrete or mortar mixer. Use approximately 4-½ quarts (4.3 L) of clean potable water per 80 lb (36.2 kg) bag of QUIKRETE® Form & Pour Concrete Mix MS. Typically, 4 quarts to 5 quarts (3.8 L to 4.7 L) of clean potable water will produce a slump flow between 18 inches to 22 inches (455 mm to 555 mm). If water quantity needs to be adjusted to obtain the recommended slump flow of 18 inches to 22 inches (455 mm to 555 mm), adjust the water quantity up or down by small amounts at a time. Exceeding an ASTM C1611 slump flow of 22 inches (555 mm) may cause a reduction in performance of the product.

APPLICATION

WEAR IMPERVIOUS GLOVES, such as nitrile when handling product.

For best results, QUIKRETE® Form & Pour Concrete Mix MS should be mixed, placed, and finished within 30 minutes. Pour or pump the material into the form work or repair area working continuously from one end to the other. Avoid partial depth fills which could lead to cold joints. Mechanical vibration can be used to increase consolidation, but care must be taken to not over vibrate the material. Over vibration can lead to segregation.

CURING

Proper curing increases the strength and durability of concrete. Exposed concrete must be moist cured by keeping the surface wet or by covering the concrete surface with wet burlap and plastic sheeting. Curing should be continued for a period of five days. To eliminate the need for moist curing, seal the surface with QUIKRETE® Acrylic Concrete Cure & Seal (No. 8730) using a sprayer, brush or roller after finishing if the surface is exposed. Also apply the QUIKRETE® Acrylic Concrete Cure & Seal (No. 8730) when the concrete surface has hardened or once the formwork has been removed.

PRECAUTIONS

- Minimum application thickness is 2 inches (50 mm).
- QUIKRETE® Form & Pour Concrete Mix MS is formulated for low plastic shrinkage; for large areas standard jointing practices should be used.
- For large or deep pours, follow project and engineering specifications to ensure proper placement and to control heat generation within the pour.
- Follow ACI 305 when using product in hot weather. An example of an additional step would be using cold water when mixing in extremely hot weather.
- Follow ACI 306 when using product in cold weather. An example of additional steps would be using hot water when mixing in severely cold weather. Additionally, the concrete should be protected from freezing during the first 48 hours. Plastic sheeting and insulation blankets should be used if temperatures are expected to fall below 32 °F (0 °C).

WARRANTY

NOTICE: Obtain the applicable **LIMITED WARRANTY** at www.quikrete.com/product-warranty or send a written request to The Quikrete Companies, LLC, Five Concourse Parkway, Atlanta, GA 30328, USA. Manufactured by or under the authority of The Quikrete Companies, LLC.

TABLE 1 TYPICAL PHYSICAL PROPERTIES

Slump Flow, ASTM C1611	
	18 inches to 22 inches (455 mm to 555 mm)
Setting Time, ASTM C191	
Final Set	7 to 9 hours
Compressive Strength, ASTM C39	
Age	*PSI (MPa)*
1 day	2000 (13.7)
7 days	4000 (27.5)
28 days	6500 (44.8)
Flexural Strength, ASTM C78	
Age	*PSI (MPa)*
28 days	≥ 800 (5.5)
Length Change, ASTM C157	
Age, Condition	
28 days, air	≥ -0.08%
28 days, water	≤ 0.04%
Split Tensile Strength, ASTM C496	
Age	*PSI (MPa)*
28 days	≥ 500 (3.4)
Freeze Thaw Resistance, ASTM C666	
After 300 cycles	≥ 93% Durability Factor
Scaling Resistance after 25 Cycles, ASTM C672	
Visual	≤ 0.5
Slant Shear Bond Strength, ASTM C882	
Age	*PSI (MPa)*
7 days	≥ 2000 (13.7)
28 days	≥ 2500 (17.2)
Rapid Chloride Permeability, ASTM C1202	
Age	
28 days	≤ 2000 coulombs