



MAX STRENGTH CONCRETE MIX

Fast-setting, high-strength commercial blend for use 1½ in. or greater

1. PRODUCT NAME

Tech-Mix® Max Strength Concrete Mix

2. MANUFACTURER

TCC Materials®
2025 Centre Pointe Blvd.,
Mendota Heights, MN 55120 USA

Phone: 1.651.688.9116
Web: tccmaterials.com

3. PRODUCT DESCRIPTION

Tech-Mix Max Strength Concrete Mix is a commercial grade blend of fast-setting cement, sand, gravel, and other proprietary performance additives designed to provide extended working time and high early strength for concrete applications requiring a minimum thickness of 1½ in. (38 mm). Air-entrained for improved workability and freeze-thaw resistance, this mix is performance enhanced with corrosion inhibitors and contains fibers for crack resistance and increased toughness.

Features and Benefits

- Air entrained for improved freeze/thaw resistance
- Full depth or patching applications 1½ in. (38 mm) or greater
- Fast job turn-arounds with working time of 1 hour, walk-on time of 3 hours
- High early compressive strength, reaches 3,500 psi (24.1 MPa) in 24 hours
- High overall compressive strength of 8,000 psi (55.2 MPa) in 28 days
- Ideal for projects requiring small structural concrete applications
- Contains corrosion inhibitor
- Excellent workability
- Exceeds ASTM C 387/C387M for High Early Strength Concrete

When/Where to Use

Structural applications, full depth or repairs:

- Highways
- Structural piers
- Bridge decks
- Balconies
- Parking garages
- Slabs, sidewalks, patios
- Industrial floors
- Foundations and footings
- Driveway aprons

4. TECHNICAL DATA

Meets or exceeds the requirements of ASTM C387 for Normal Strength Concrete.

Typical Values • Tech-Mix Max Strength Concrete Mix	
Slump range	3-5 in. (75-125 mm)
Compressive Strength, psi (ASTM C39)	
3 hours	> 2,500 psi (17.2 MPa)
1 day	> 3,500 psi (24.1 MPa)
7 days	> 5,500 psi (37.9 MPa)
28 days	> 8,000 psi (55.2 MPa)

Set Time (ASTM C403)	
Initial Set (hrs:min)	1:15
Final Set (hrs:min)	1:30

Greater than: > Greater than or equal to: ≥ Less than: < Less than or equal to: ≤
Note: Test results obtained under controlled laboratory conditions at 73°F (22.7°C) and 50% relative humidity unless otherwise specified.

Available Size

- 60 lb. (27.2 kg) bag (BOM #110259)

Coverage

- 60 lb. (27.2 kg.) bag yields approximately 0.45 cu. ft. (12.7 L)
- * All yields are approximate and do not allow for waste or uneven sub-grades, etc.

5. INSTALLATION

Preparation

Read all directions before starting work. Air, mix, and substrate temperatures should be between 40-90°F (4-32°C) with no rain forecasted 24 hours before application. Stake out the planned area and remove sod or soil to the desired depth. Nail and stake forms securely in place. Tamp and compact the sub-base until firm. Subgrade surface should be brought to a saturated surface dry (SSD) condition with potable water. All repair overlay surfaces must be sound and be clean of any contaminants. Dampen adjoining concrete surfaces to SSD condition with potable water. Do not leave standing puddles.

Note: It is the responsibility of the installer/applicator to ensure the suitability of the product for its intended use.

Forming

For rectangular slabs, construct forms out of 2 in. x 4 in. boards. For curbed slabs, use ¼ in. (6 mm) plywood for forms. Forms must be sealed to prevent material from escaping. Release agents are recommended for pre-treating wood form surfaces that can absorb moisture. The design of the form work should take into consideration the consistency of the mix, the method of placement and the distance the material must travel. Form sides must be squared off.

Mixing

Mix only the amount of material that can be placed in 1 hour. The use of a barrel-type concrete mixer or a paddle type mortar mixer is recommended, although hand-mixing can also be used. Choose the mixer size most appropriate for the size of the job to be done. Allow at least ¾ cu. ft. (21 L) of mixer capacity for every 60 lb. (27.2 kg) bag of product. Always stir powder into the liquid for easier blending. Use potable water for mixing, no bonding additives are needed. Addition of cold water at high temperatures or warm water at low temperatures will aid in adjusting the mix temperature.

Approximate Water Amounts for Mixing		
Bag Size	Starting Water Amounts	Final Maximum Water Amounts
60 lb. (27.2 kg)	2 qt. (1.9 L)	2.25 qt. (2.1 L)

Machine mixing:

1. Choose the mixer size most appropriate for the size of the job. Allow at least ¾ cu. ft. (21 L) of mixer capacity for each 60 lb., or at least 1 cu. ft. (28 L) of mixer capacity for each 80 lb. bag to be mixed at one time.
2. Using the chart for approximate water amounts, add starting amounts of fresh water to the mixer. Turn on the mixer and begin adding the bags of concrete to the mixer.
3. Mix for 3-5 minutes to ensure a uniform lump free consistency. If the material becomes too difficult to mix, add additional water in small increments until a workable mix is obtained. If a slump cone is available, adjust water to achieve a 3-5 in. (75-125 mm) slump. Do not overwater as this will reduce strength and increase permeability.
4. Do not re-temper, exceed water limits or add any materials other than clean potable water.
5. Clean mixer often to prevent buildup of material.
6. Place immediately. Keep mix time consistent from batch to batch.

Hand mixing:

1. Empty concrete bags into a suitable mixing container.
2. Using the chart for approximate water amounts, add potable water to the mixing container. Work the mix with a shovel, rake, or hoe. Add additional water sparingly as needed until a stiff, moldable consistency is achieved. Do not overwater. If a slump cone is available, adjust water to achieve a 3-5 in. (75-125 mm) slump.
3. Be sure there are no dry chunks of concrete or standing water left in the mix.

Application

Ideal application conditions are when air, material, and substrate temperatures are between 50°F-90°F (10°C-32°C) within 24 hours of application and placement, and when rain is not forecast 24 hours after. Set times will vary in extremely hot or cold conditions. Do not apply over concrete cured less than 28 days or surfaces that are frozen or contain frost.

1. Dampen the sub-grade before concrete is placed. Do not leave standing puddles. Shovel or place mixture immediately into pre-dampened area. Maintain a minimum thickness of 1½ in. (38 mm) for repair overlays. Slab work, sidewalks, and patios should be at least 4 in. (102 mm) thick.
2. Once the mixture has been compacted and spread to completely fill forms or patch, strike off immediately with a straight board or screed, moving the edge back and forth with a saw-like motion. Use a darby or bull float to level any ridges and fill voids left by the screed. Hard steel trowel finish is not recommended for air-entrained concrete. For best results, do not overwork the material. Finishing too early or over-working can cause dusting, cracking, scaling, and a weak surface.
3. Cut the concrete away from forms by running an edging tool or trowel along the forms to compact the slab edges.
4. Cut control joints into the slab every 6-8 ft. (1.8-2.4 m) using a grooving tool. For repair overlays, do not bridge over existing expansion or control joints. Joints should be ½ slab thickness.
5. Concrete shall be used and placed in final position within 1 hour after initial mixing or discarded at that time.
6. Allow the concrete to reach initial set, wait for all water to evaporate from the surface before finishing with a trowel or broom.
7. Under typical conditions, forms may be removed after 3 hours.

Finishing

Tech-Mix Max Strength Concrete Mix Concrete can be hand troweled or broom finished.

Curing

Concrete can be moist cured by keeping the surface wet with a gentle mist of water applied to the surface with a lawn sprinkler or covering the concrete surface with plastic sheeting. Curing should be started as soon as possible without damaging the concrete finish and should continue for a period of 5 days in warm weather at 70°F (21°C) or higher or 7 days in colder weather at 50°-70°F (10°- 21°C). Protect concrete from freezing during the first 24 hours; if temperatures are expected to fall below 32°F (1°C), plastic sheeting and insulation blankets should be used. Curing with plastic or burlap can cause patchy discoloration of the repair. Make sure plastic sheets are laid flat, thoroughly sealed at joints and anchored carefully along edges. Full cure is reached after 28 days.

Clean Up

Use soapy water to clean hands and tools immediately after use. Dried material must be mechanically removed. Use a waste water hardener (e.g. Congelz™ or similar product) for cementitious waste disposal.

Limitations

- Follow all industry standard safety procedures when working with concrete products including wearing impervious gloves, such as nitrile when handling.
- Do not overwater. Do not exceed water limits when mixing.
- Do not use for repairs less than 1 ½ in. (38 mm).
- Do not add aggregate or other additives.
- Install in accordance with local building code provisions and all applicable ASTM standards. Good workmanship and proper detailing and design assures durable, functional, construction.
- Always comply with the steel reinforcement requirements of applicable building codes for structural applications.
- For load-bearing applications, follow local building codes for proper footing specification.
- Mixing time and water amounts should be consistent from batch to batch.
- Protect from freezing for 48 hours. Plastic sheeting and insulation blankets should be used if temperatures are expected to fall below 32°F (0°C).
- Do not use curing compounds during late fall on surfaces where de-icing chemicals will be used to melt ice and snow. Using curing compounds at that time may prevent proper air drying of the concrete, which is necessary to enhance its resistance to damage caused by de-icing chemicals.
- The use of salts or de-icing chemicals are not recommended during the first winter season following installation.

Safety

READ THE SAFETY DATA SHEET (SDS) BEFORE USING THIS PRODUCT. SDS information is available on our website: tccmaterials.com

Cautions

Read complete cautionary information printed on product container prior to use.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of the covered Tech-Mix brand product(s) under normal environmental and working conditions. Because each project is different, TCC Materials cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

6. AVAILABILITY

To locate Tech-Mix products in your area, please contact:

Phone: 1.651.688.9116

Email: info@tccmaterials.com

7. WARRANTY

Seller warrants that its product will conform to and perform in accordance with the product specifications. The foregoing warranty is in lieu of all other warranties, expressed or implied, including, but not limited to those concerning merchantability and fitness for a particular purpose. Because of the difficulty in ascertaining and measuring damages hereunder, it is agreed that Seller's liability to the Buyer shall not exceed the total amount billed and billable to the Buyer for the product hereunder.

Shelf Life	Best when used within one year in original, unopened bags
Storage Conditions	Store dry, cool, out of direct sunlight. Best to condition material to 50-80°F (10°-27°C) before using.
Color	Gray

WARNING: INJURIOUS TO EYES

KEEP OUT OF REACH OF CHILDREN

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REV 09/23