

# PRO-X180 RAPID STRENGTH CONCRETE MIX



**Sakrete® PRO-X180 Rapid 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 1.5 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:

- Fast job turn-around with working time of 60 minutes and walk-on time of 3 hours.
- Air entrained for improved freeze-thaw resistance.
- High early compressive strength, reaches 3,500 psi (24.1 MPa) in 24 hours.
- Contains corrosion inhibitor.
- High Strength 8,000 psi in 28 days
- Exceeds ASTM C387/C387M for high early strength concrete
- Ideal for structural projects where ready mixed concrete is not practical

## Use For:

Structural applications, full depth or repairs:

- Highways
- Structural piers
- Bridge decks
- Industrial floors
- Foundations and footings
- Balconies
- Parking garages

## Yield/Coverage/Water:

One 80 lb (36.3 kg) bag will cover approximately 0.59 ft<sup>3</sup> (0.02 m<sup>3</sup>) thickness. 46 bags will cover approximately 1 cu. yd. (0.76 m<sup>3</sup>). Coverage may vary depending on porosity of surface.

Bag Size	Approximate Coverage	Water
80 lb (36.3 kg)	0.59 ft <sup>3</sup> (0.02 m <sup>3</sup> )	2.75-3.25 qts (2.6-3.1 L)

NOTE: Yield and water are approximate. The yield above does not allow for waste and spillage.

## Color:

Gray

## Technical Data:

Slump Range	3-5 in. (75-125 mm)
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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)

## DIVISION 3

Structural Concrete – 03 31 00

Rigid Pavement Repair – 32 01 29

*NOTE: Weather and temperatures, amount of water used as well as care used in the application are all factors over which we have no control. We assume no warranty for finished work, expressed or implied. Our liability is limited to the replacement of defective materials.*

## Preparation:

### Concrete:

1. All materials should be stored between 40° F (4° C) and 80° F (27° C) 24 hours prior to installation.
2. All surfaces must be clean, stable, solid, and structurally sound. Remove all unsound concrete, grease, oil, dirt, paint, sealers, curing compounds, waxes and any other foreign materials that will inhibit adhesion.
3. Subgrade surface should be brought to a saturated surface dry (SSD) condition with clean potable water.
4. 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.

### Forming:

1. Forms must be sealed to prevent material from escaping.
2. 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.
3. Form sides must be squared off.

### Refer To:

ACI 302 Guide for Concrete Flooring and Slab Construction

ACI 304 Guide for Measuring, Mixing, Transportation and Placing Concrete

## Mixing:

1. Mix only the amount of material that can be placed in 1 hour.
2. The use of a barrel-type concrete mixer or a mortar mixer is recommended, although hand-mixing can also be used.
3. Choose the mixer size most appropriate for the size of the job to be done.
4. Allow at least 1 cu. ft. (28 L) of mixer capacity for every 50 lb. (22.7 kg) bag of product.

## Machine Mixing:

1. Add approximately 2.75-3.25 quarts (2.6-3.1 L) of cool, clean potable water per 80lb bag to the clean mixer. Always add powder to the liquid for easier blending.
2. Turn on the mixer and begin adding the bags of concrete. Addition of cold water at high temperatures or warm water at low temperatures will aid in adjusting the mix temperature.
3. Mix for 3-5 minutes to a lump free consistency.
4. If the material becomes too difficult to mix, add additional water, up to a total of 3.25 qts. (3.1 L), until a workable mix is obtained. If a slump cone is available, adjust water to achieve a 3-5 in. (75-125 mm) slump, but do not overwater as

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this will reduce strength and increase permeability.

5. Do not retemper, exceed water limits or add any materials other than clean, potable water.
6. Clean mixer often to prevent buildup of material.

## **Placement:**

1. Ideal application conditions are when air, material, and substrate temperatures are between 50 – 90° F (10 – 32° C) within 24 hours of application and placement, and when rain is not forecast for 24 hours after.
2. 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.
3. 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 1.5 in. (38 mm).
4. 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.
5. 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.
6. Cut the concrete away from forms by running an edging tool or trowel along the forms to compact the slab edges.
7. Cut 1 in. (25 mm) 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.
8. Concrete shall be used and placed in final position within 1 hour after initial mixing or discarded at that time.
9. Allow the concrete to reach initial set, wait for all water to evaporate from the surface before finishing with a trowel or broom.
10. Under typical conditions, forms may be removed after 3 hours.

## **Notes & Limitations:**

1. Mix with clean water only, do not add accelerators, retarders, or bonding additives.
2. Do not add aggregate.
3. Do not overwater. Do not exceed water limits listed when mixing.
4. Set times will fluctuate in extremely hot or cold weather. Use cold water in severely hot weather; use hot water not exceeding 120° F (48° C) when mixing in severely cold weather.
5. Do not use for repairs less than 1.5 in. (38 mm).
6. Do not mix more material than can be placed in 60 minutes.
7. Do not apply to surfaces that are frozen or contain frost.
8. Protect concrete from freezing during the first 48 hours after placement.
9. Clean trowel frequently during application.
10. Do not over-work or over-trowel.
11. Always comply with the steel reinforcement requirements of applicable building codes for structural applications.
12. The use of salts or de-icing chemicals are not recommended during the first winter season following installation.
13. As with all cementitious materials, avoid contact with aluminum to prevent adverse chemical reactions and possible product failure.
14. Follow all industry standard safety procedures when working with concrete products including wearing impervious gloves, such as nitrile when handling.
15. Sakrete® PRO-X180 Rapid Strength Concrete Mix should be installed in accordance with local building code provisions and all applicable ASTM standards. Good workmanship and proper detailing & design assures durable, functional, water tight construction.

## **Curing and Sealing:**

1. Curing means maintaining proper moisture and temperature to increase the strength and durability of concrete and is one of the most important steps in concrete construction.
2. Under hot and windy conditions, all concrete tends to lose moisture unevenly and may develop plastic shrinkage cracks. When weather is too hot, dry or windy, water is lost by evaporation from the concrete, and hydration stops, resulting in finishing difficulties and cracks. In such cases, concrete can be moist cured by a gentle mist of water applied to the surface or covering the concrete surface with clean wet burlap or flat-laid plastic sheeting.
3. 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 50 – 70° F (10 – 21° C).
4. In near freezing temperatures the hydration process slow considerably. Protect concrete from freezing during the first 48 hours; if temperatures are expected to fall below 32° F (1° C), plastic sheeting and insulation blankets should be used.
5. The final appearance will be affected by the curing method used. Coverings such as burlap or plastic sheets may affect the color in spots.

## **Refer To:**

ACI 308 Standard Practice for Curing Concrete

## **Clean Up:**

Use warm, soapy water for cleaning hands and tools while product is wet. Sakrete Concrete & Mortar Dissolver can be used if dried or hardened on tools and equipment.

*NOTE: Proper application and installation of all Sakrete products are the responsibility of the end user.*

## **Safety:**

READ and UNDERSTAND the Safety Data Sheet (SDS) before using this product. WARNING: Wear protective clothing and equipment. For emergency information, call CHEMTREC at 800-424-9300 or 703-527-3887 (outside USA).

**KEEP OUT OF REACH OF CHILDREN.**

## **Limited Product Warranty:**

The manufacturer warrants that this product shall be of merchantable quality when used or applied in accordance with the manufacturer's instructions. This product is not warranted as suitable for any purpose other than the general purpose for which it is intended. This warranty runs for one (1) year from the dates the product is purchased. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED TO THE DURATION OF THIS WARRANTY. Liability under this warranty is limited to replacement or defective products or, at the manufacturer's option, refund of the purchase price. CONSEQUENTIAL AND INCIDENTAL DAMAGES ARE NOT RECOVERABLE UNDER THIS WARRANTY.