



The Chemical Company

PRODUCT DATA

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Maintenance of Concrete

10-60 RAPID MORTAR

Very rapid-setting cement-based mortar

Description

10-60 Rapid Mortar is a one-component shrinkage-compensated very rapid-setting cement-based mortar. It is designed for horizontal concrete surfaces where high early strength gain is required.

Yield

0.43 ft³ (0.012 m³) per 50 lb (22.7 kg) bag

When extended 50%:

0.57 ft³ (0.016 m³)

When extended 100%:

0.77 ft³ (0.022 m³)

Packaging

50 lb (22.7 kg) bags

3,000 lb (1,360.8 kg) bulk bags

Shelf Life

1 year when properly stored

Storage

Store and transport in unopened containers at 60 to 80° F (16 to 27° C) in clean, dry conditions.

Features

- Extra low permeability
- Very rapid setting
- Excellent resistance to freeze/thaw cycling
- Nongypsum based
- Shrinkage compensated
- Can be extended up to 100% by weight with 3/8" (10 mm) aggregate
- Proprietary cement blend

Benefits

- Helps prevent chloride intrusion
- Structures can be opened to vehicular traffic in 1 hour; epoxy coated in as little as 4 hours
- Outstanding durability
- Volume stability
- Minimizes cracking from drying shrinkage; reduces stress at the bond line
- Economical; high yields
- Bonds to carbonated and noncarbonated concrete substrates

Where to Use

APPLICATION

- Applications requiring high early-strength gain
- Structural concrete repairs
- Repairing industrial floors
- Bridges
- Parking decks
- Airport runways

LOCATION

- Horizontal surfaces
- Interior or exterior

SUBSTRATE

- Concrete

How to Apply

Surface Preparation

CONCRETE

1. Concrete must be structurally sound and fully cured (28 days).
2. Saw cut the perimeter of the area being patched into a square with a minimum depth of 1/2" (13 mm).
3. Remove all unsound concrete and roughen the surface to a minimum 1/4" (6 mm) profile amplitude.
4. Remove all laitance, oil, grease, curing compounds, and other contaminants that could prevent adequate bond.
5. The concrete substrate should be saturated surface-dry (SSD), without standing water, before application.



Technical Data

Composition

10-60 Rapid Mortar is a blend of cement, graded aggregate, shrinkage-compensating agents, and set-control additives.

Compliances

- ASTM C 928

Test Data

The following results were obtained with a water / powder ratio of 5.5 pints (2.6 L) of water to 50 lbs (22.7 kg) of 10-60 Rapid Mortar at 73° F (23° C).

| PROPERTY | RESULTS | TEST METHODS |
|--|---|-----------------------------------|
| Fresh wet density , lb/ft ³ (kg/m ³) | 130 (2,082) | ASTM C 138 |
| Set time , min, at 72° F (22° C) | | ASTM C 191 |
| Initial | 16 | |
| Final | 28 | |
| Working time , min | 8 | |
| Length change , % (µstrain) | | ASTM C 928 |
| Drying shrinkage | -0.05 (-500) | |
| Wetting expansion | +0.03 (+300) | |
| Coefficient of thermal expansion , in/in/° F (cm/cm/° C) | 7.0 x 10 ⁻⁶ (12.6 x 10 ⁻⁶) | CRD C 39 |
| Modulus of elasticity , psi (GPa) | 4.4 x 10 ⁶ (19.5) | ASTM C 469 |
| Rapid chloride permeability , coulombs | < 300 | ASTM C 1202 |
| Freeze/thaw resistance , % RDM, at 300 cycles | 100 | ASTM C 666, (Procedure A) |
| Scaling resistance , at 25 cycles | 0 rating; no scaling | ASTM C 672 |
| Slant shear bond strength , psi (MPa) | | ASTM C 882, modified ¹ |
| 1 day | 2,300 (16) | |
| 28 days | 2,600 (18) | |
| Splitting tensile strength , psi (MPa) | | ASTM C 496 |
| 1 day | 400 (3) | |
| 28 days | 450 (3) | |
| Flexural strength , psi (MPa) | | ASTM C 348 |
| 1 day | 700 (5) | |
| 28 days | 850 (6) | |
| Compressive strength , psi (MPa), 2" cubes | | ASTM C 109 |
| 1 hr | 2,000 (14) | |
| 1 day | 4,000 (28) | |
| 28 days | 8,000 (55) | |
| Compressive strength , psi (MPa), 3 by 6" cylinders, at 28 days | 7,400 (51) | ASTM C 39 |

¹No bonding agent used; mortar scrubbed into substrate.

All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

REINFORCING STEEL

1. Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 03730 "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion."
2. For additional protection from future corrosion, coat the prepared reinforcing steel with Zincrich Rebar Primer.

MIXING

1. Add 5-1/2 pints (2.6 L) of clean water to the mixing container for each bag of 10-60 Rapid Mortar. If required, add the correct amount of aggregate to the mixer. Add the powder to the water while continuously mixing with a slow-speed drill and paddle, mortar mixer, or other forced action mixer.
2. Mix for a minimum of 3 minutes until fully homogeneous.

AGGREGATE EXTENSION

1. For repair areas 2 – 4" (51 – 102 mm) in depth, the minimum recommended addition is 15 – 25 lbs (6.8 – 11.4 kg) of 3/8" (10 mm) washed, graded, rounded, SSD, low-absorption, high-density aggregate per 50 lb (22.7 kg) bag.
2. For areas greater than 4" (102 mm) in depth, the minimum recommended addition is 25 – 50 lbs (11.4 to 22.7 kg) of 3/8" (10 mm) washed, graded, rounded, SSD, low-absorption, high-density aggregate per 50 lb bag.
3. The maximum aggregate extension is 50 lbs (22.7 kg) of pea gravel per bag.
4. The performance of 10-60 Rapid Mortar depends on the type, condition, and amount of aggregate added. Rely on trials, testing, and previous experience to determine aggregate suitability.

Application

1. Apply the mixed material onto the prepared saturated surface-dry (SSD) substrate by gloved hand, trowel, or screed. Ensure proper consolidation of the mortar and compaction around reinforcing steel. Minimum application thickness is 1/2" (13 mm).
2. Finish the completed repair, as required, taking care not to overwork the surface.
3. A maximum of 15 minutes should be allowed to mix, place, and finish 10-60 Rapid Mortar at 70° F (21° C).

Clean Up

Clean tools and equipment with clean water immediately after use. Cured material must be removed mechanically.

Curing

1. Proper curing is extremely important. Cure 10-60 Rapid Mortar immediately after finishing. Use a water-based curing compound that complies with ASTM C 309.

For Best Performance

- Minimum ambient, surface, and material temperature is 40° F (4° C) and rising.
- Do not mix longer than 5 minutes.
- Minimum application thickness is 1/2" (13 mm).
- Consult coating supplier for overcoating requirements.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

Health and Safety

10-60 RAPID MORTAR

WARNING!

10-60 Rapid Mortar contains silica, crystalline quartz; alumina cement; portland cement; anhydrite; fly ash; calcium sulfate; silica, amorphous; Iron oxide.

Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains small amount of free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

This product contains material listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents.

**For medical emergencies only,
call ChemTrec (1-800-424-9300).**

10-60 RAPID MORTAR

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