



10-60 RAPID MORTAR

Very rapid-setting one-component cement mortar

Features and Benefits

- Minimizes downtime – structure can be opened to vehicular traffic in as little as one hour
- Extra low permeability – provides added protection to future corrosion of rebar
- Outstanding durability – not a gypsum-based product; excellent resistance to freeze-thaw cycling
- Crack resistant – shrinkage compensation technology minimizes drying shrinkage
- Economical – can be extended up to 100% by weight with 3/8" (10 mm) aggregate
- Excellent bond – to carbonated and noncarbonated concrete substrates
- Chloride-free – contains no added chloride accelerants

Where to Use 10-60 Rapid Mortar

- Applications where high early strength gain is required
- Horizontal concrete surfaces
- Bridges
- Parking decks
- Airport runways
- Concrete pavement
- Interior or exterior

How to Apply 10-60 Rapid Mortar

Surface Preparation

Concrete

Concrete must be structurally sound and fully cured 28 days. All unsound concrete should be removed and the surface roughened to a minimum 1/4" (6 mm) profile amplitude. Remove all laitance, oil, grease, curing compounds, and other contaminants that will prevent adequate bond. The perimeter of the area to be patched should be squared by saw cutting to a minimum depth of 1/2" (13 mm). The concrete substrate should be saturated surface dry (SSD) with no standing water prior to application.

Reinforcing Steel

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." For additional protection from future corrosion, coat the prepared reinforcing steel with Zincrich Rebar Primer or install Corr-Stops® CM.

Mixing

Add 5-1/2 pints (2.6 L) of clean water to the mixing container for each bag of ThoRoc™ 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. Mix for a minimum of 3 minutes until fully homogeneous. Additional water may be added up to a maximum of 1 pint (0.47 L) per bag of 10-60 Rapid Mortar.

Aggregate Extension

For repair areas 2 to 4" (51 to 102 mm) in depth, the minimum addition of 15 to 25 lbs. (6.8 to 11.4 kg) of 3/8" (10 mm) clean, washed, well-graded pea gravel per 50 lb. (22.7 kg) bag is recommended. For areas greater than 4" (102 mm) in depth, the minimum addition of 25 to 50 lbs. (11.4 to 22.7 kg) of 3/8" (10 mm) clean, washed, well-graded pea gravel per bag is recommended. The maximum aggregate extension is 50 lbs. (22.7 kg) of pea gravel per bag.

The performance of 10-60 Rapid Mortar depends on the type and condition of the aggregate and the amount added. Trials, testing, and previous experience are recommended to determine aggregate suitability.

Application

Minimum application thickness is 1/2" (13 mm). Apply the mixed material onto the prepared SSD substrate by gloved hand, trowel, or screed assuring proper consolidation of the mortar and compaction around reinforcing steel. Where a structural bonding agent is necessary, ThoRoc™ offers a complete line of epoxy bonding agents conforming to ASTM C 881. Finish the completed repair as required, taking care not to overwork the surface. A maximum of 15 minutes should be allowed to mix, place and finish 10-60 Rapid Mortar in normal temperatures.

Clean Up

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

Curing

Proper curing is extremely important. 10-60 Rapid Mortar should be cured immediately after finishing. A water-based curing compound which complies with ASTM C 309 is recommended. Alternative curing options include application of a fine mist of water, wet burlap, or polyethylene sheeting for a minimum of 2 days.

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).
- Do not mix more material than can be used in 8 - 10 minutes at 72°F (22°C).
- Consult coating supplier for overcoating requirements.
- Make certain the most current version of this data guide is 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 ChemRex® personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

Technical Data

Physical Properties

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

Compliances

- ASTM C 928

Description of Test	Test Method	Typical Result
Fresh wet density	ASTM C 138	130 lb./ft. ³ (2,082 kg/m ³)
Set time @ 72°F (22°C)	ASTM C 191	
Initial		16 minutes
Final		28 minutes
Working time		8 minutes
Length change	ASTM C 928	
Drying shrinkage		-0.02% (-200 μstrain)
Wetting expansion		+0.01% (+100 μstrain)
Coefficient of thermal expansion	CRD C 39	7.0 x 10 ⁻⁶ in/in/°F (12.6 x 10 ⁻⁶ cm/cm/°C)
Modulus of elasticity	ASTM C 469	4.4 x 10 ⁶ psi (19.5 GPa)
Rapid chloride permeability	ASTM C 1202	less than 300 coulombs
Freeze-thaw resistance	ASTM C 666 (Procedure A)	100% RDM @ 300 cycles
Scaling resistance	ASTM C 672	0 rating – no scaling @ 25 cycles
Slant shear bond strength	ASTM C 882 (modified ¹)	2,300 psi (16 MPa) @ 1 day 2,600 psi (18 MPa) @ 28 days
Splitting tensile strength	ASTM C 496	400 psi (3 MPa) @ 1 day 450 psi (3 MPa) @ 28 days
Flexural strength	ASTM C 348	700 psi (5 MPa) @ 1 day 850 psi (6 MPa) @ 28 days
Compressive strength	ASTM C 109	2,000 psi (14 MPa) @ 1 hr. 3,000 psi (21 MPa) @ 2 hr. 6,500 psi (45 MPa) @ 1 day 8,000 psi (55 MPa) @ 28 days
Compressive strength	ASTM C 39	7,400 psi (51 MPa) @ 28 days

¹No bonding agent used; mortar scrubbed into substrate.

All application and performance values are typical for the material, but may vary due to variations in the test method, conditions, and configurations.

Order Information

Packaging

10-60 Rapid Mortar

- 50 lb. (22.7 kg) bag
- 3,000 lb. (1,361 kg) bulk bag

Shelf Life

- 10-60 Rapid Mortar has a shelf life of 9 months when transported and stored in cool, dry conditions between 40°F (4°C) and 85°F (29°C) in the original, unopened containers.

Coverage

- 0.43 ft.³ (0.012 m³) per 50 lb. (22.7 kg) bag
- Extended 50% - 0.57 ft.³ (0.016 m³)
- Extended 100% - 0.77 ft.³ (0.022 m³)

Caution

10-60 Rapid Mortar contains crystalline silica, Portland cement, hydraulic cement, lithium carbonate

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 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

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin and eyes. Prevent inhalation of dust. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or is 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. SEEK IMMEDIATE MEDICAL ATTENTION. 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.

For more information see Material Safety Data Sheet (MSDS) for this product.

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

This product contains 0 g/L or 0 lbs./gallon.

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

Limited Warranty Notice

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ThoRoc[™]

Concrete Restoration Solutions

ChemRex[®]

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