

# DOT REPAIR MORTAR

High-Performance Concrete Repair Mortar



## PRODUCT DATASHEET

**DESCRIPTION:** Rapid Set® DOT REPAIR MORTAR is a high-performance, fast-setting concrete repair material. Durable in wet environments, DOT REPAIR MORTAR is a blend of Rapid Set hydraulic cement, high performance additives and ASTM C33 concrete sand. DOT REPAIR MORTAR is non-metallic and no chlorides are added. Mix DOT REPAIR MORTAR with water to produce a flowable, quality repair material that is ideal where fast strength gain, high durability and low shrinkage are desired. DOT REPAIR MORTAR achieves structural strength in 1 hour after final set.

**USES:** Use DOT REPAIR MORTAR where high performance, rapid strength gain and early return to service is desired. DOT REPAIR MORTAR is ideal for repairing highways, bridge decks, airport pavement, industrial floors, parking garage decks, and freezer floors. DOT REPAIR MORTAR contains an air-entraining admixture for freeze thaw durability.

**ENVIRONMENTAL ADVANTAGES:** Use DOT REPAIR MORTAR to reduce your carbon footprint and lower your environmental impact. Production of Rapid Set cement emits far less CO<sub>2</sub> than portland cement. Contact your CTS representative for EPD, LEED values and other sustainability information.

**APPLICATION:** Apply DOT REPAIR MORTAR in thicknesses from 1/2" (1.2 cm) to 6" (15.2 cm). For thicker applications up to 24" (61 cm), extend with up to 50 lbs of coarse aggregate. Use only clean, dry aggregate with a nominal maximum size of 3/8" to 3/4" conforming to ASTM C33.

**SURFACE PREPARATION:** For repairs, application surface must be clean, sound and free from any materials that may inhibit bond such as oil, asphalt, curing compound, acid, dirt and loose debris. Mechanically abrade surface and remove all unsound material. Apply DOT REPAIR MORTAR to a thoroughly saturated surface with no standing water.

**MIXING:** The use of a power-driven mechanical mixer, such as a mortar mixer or a drill-mounted mixer, is required. Organize work so that all personnel and equipment are in place before mixing. Use clean potable water. **DOT REPAIR MORTAR may be mixed using 3.5 to 5.0 quarts (3.3 L to 4.7 L) of water per 70-lb (32-kg) bag. Use up to 5.0 quarts (4.7 L) when extended with dry coarse aggregate. Use less water to achieve higher strengths.** Place the desired quantity of mix water into the mixing container. While the mixer is running, add DOT REPAIR MORTAR. Mix for the minimum amount of time required to achieve a lump-free, uniform consistency (usually 1 to 3 minutes). Do not retemper.

**PLACEMENT:** DOT REPAIR MORTAR may be placed using traditional construction methods. Organize work so that all personnel and equipment are ready before placement. Place, consolidate and screed quickly to allow for maximum finishing time. Use a method of consolidation that eliminates air voids. On flat work, do not install in layers; install full depth sections and progress horizontally. Do not wait for bleed water. Apply final finish as soon as possible. DOT REPAIR MORTAR may be troweled, floated or broom finished. Do not install on frozen surfaces. The working time for DOT REPAIR MORTAR is 10 to 25 minutes at 70°F (21°C). To extend working time, use Rapid Set® SET Control retarding admixture or use cold mix water. DOT REPAIR MORTAR may be applied in temperatures ranging from 45°F to 90°F (7°C to 32°C).

## OVERVIEW

### Highlights:

Fast: Ready for traffic and loading in 1 hour

Durable: Formulated for long life in critical applications

Structural: For repair and new construction

Extendable: Add rock for large placements

Easy to use: Mix to fluid or stiff consistency

Multi-purpose: Use for concrete repair, highway repair, construction of pavements, bridges, parking decks, ramps, sidewalks, steps, joint repair, formed work and more

### Conforms to:

ASTM C928 R3

### Approved:

State (DOT) and local approvals

### MasterFormat® 2016

03 01 30 Maintenance of Cast-in-Place Concrete

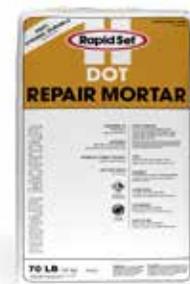
03 01 40 Maintenance of Precast Concrete

03 01 50 Maintenance of Cast Decks and Underlayment

03 01 70 Maintenance of Mass Concrete

### Manufacturer:

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**CURING:** Water cure all Rapid Set® DOT REPAIR MORTAR installations by keeping exposed surfaces wet for a minimum of 1 hour. Begin curing after the material starts to harden and before the surface starts to lose its moist sheen. The objective of water curing is to maintain the moist sheen on the entire surface until the product has achieved sufficient strength. When experiencing extended setting time due to cold temperature or the use of retarder, longer curing times may be required. A curing compound conforming to ASTM C309 Type II, Class B may be used. For best results, protect from direct sunlight, wind, and other conditions that may cause rapid drying of material.

**COLD WEATHER:** Environmental and material temperatures below 70°F (21°C) may delay setting time and reduce the rate of strength gain. Lower temperatures will have a more pronounced effect. Thinner sections will be more significantly affected. To compensate for cold temperatures, keep material warm, use heated mix water, and follow ACI 306 Procedures for Cold Weather Concreting.

**WARM WEATHER:** Environmental and material temperatures above 70°F (21°C) may shorten setting time and increase the rate of strength gain. Higher temperatures will have a more pronounced effect. To compensate for warm temperatures, keep material cool, use chilled mix water and follow ACI 305 Procedures for Hot Weather Concreting. The use of SET Control retarding admixture will help offset the effects of high temperatures.

**YIELD & PACKAGING:** DOT REPAIR MORTAR is available in 70-lb (32-kg) bags. One 70-lb (32-kg) bag will yield approximately 0.63 ft<sup>3</sup> (0.018 m<sup>3</sup>). Each bag of DOT Repair Mortar may be extended to yield approximately 0.9 ft<sup>3</sup> (0.02 m<sup>3</sup>), using 50 lbs of quality coarse aggregate.

**SHELF LIFE:** DOT REPAIR MORTAR has a shelf life of 12 months when stored properly in a dry location, protected from moisture, out of direct sunlight, and in an undamaged package.

**USER RESPONSIBILITY:** Before using CTS products, read current technical data sheets, bulletins, product labels and safety data sheets at [www.CTScement.com](http://www.CTScement.com). It is the user's responsibility to review instructions and warnings for any CTS products prior to use.

**WARNING: DO NOT BREATHE DUST. AVOID CONTACT WITH SKIN AND EYES.** Use material in well-ventilated areas only. Exposure to cement dust may irritate eyes, nose, throat, and the upper respiratory system/lungs. Silica exposure by inhalation may result in the development of lung injuries and pulmonary diseases, including silicosis and lung cancer. Seek medical treatment if you experience difficulty breathing while using this product. The use of a NIOSH/MSHA-approved respirator (P-, N- or R-95) is recommended to minimize inhalation of cement dust. Eat and drink only in dust-free areas to avoid ingesting cement dust. Skin contact with dry material or wet mixtures may result in bodily injury ranging from moderate irritation and thickening/cracking of skin to severe skin damage from chemical burns. If irritation or burning occurs, seek medical treatment. Protect eyes with goggles or safety glasses with side shields. Cover skin with protective clothing. Use chemical resistant gloves and waterproof boots. In case of skin contact with cement dust, immediately wash off dust with soap and water to avoid skin damage. In case of skin contact with wet cement, wash exposed skin areas with cold running water as soon as possible. In case of eye contact with cement dust, flush immediately and repeatedly with clean water, and consult a physician. If wet cement splashes into eyes, rinse eyes with clean water for at least 15 minutes and go to the hospital for further treatment.

Please refer to the SDS and [www.CTScement.com](http://www.CTScement.com) for additional safety information regarding this material.

**LIMITED WARRANTY:** CTS CEMENT MANUFACTURING CORP. (CTS) warrants its materials to be of good quality and, at its option, will replace or refund the purchase price of any material proven to be defective within one (1) year from date of purchase. The above remedies shall be the limit of CTS' responsibility. Except for the foregoing, all warranties expressed or implied, including merchantability and fitness for a particular purpose, are excluded. CTS shall not be liable for any consequential, incidental, or special damages arising directly or indirectly from the use of the materials.

**⚠ WARNING**

CANCER and REPRODUCTIVE HARM - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## TYPICAL PHYSICAL DATA

### Set Time, ASTM C266 Mod.

Initial set	15 minutes
Final set	30 minutes

### Compressive Strength, ASTM C109 Mod.

1 hour*	3500 psi (24.1 MPa)
3 hours	4500 psi (31.0 MPa)
24 hours	6500 psi (44.8 MPa)
7 days	8000 psi (55.2 MPa)
28 days	9000 psi (62.1 MPa)

### Flexural Strength, ASTM C78

4 hours	500 psi (3.45 MPa)
24 hours	650 psi (4.48 MPa)
28 days	1200 psi (8.27 MPa)

### Slant Shear Bond, ASTM C882 per C928

24 hours	2000 psi (13.8 MPa)
28 days	2200 psi (15.2 MPa)

### Freeze/Thaw, ASTM C666

300 cycles	Durability factor >95%
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\*After final set  
Data obtained at flow consistency 100 by ASTM C1437 at 70°F (21°C)



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