V/O REPAIR MIX

Vertical Overhead Repair Material

PRODUCT DATASHEET

DESCRIPTION: Rapid Set® V/O REPAIR MIX is a high-performance, polymer-modified blend of Rapid Set® Cement with additives and quality aggregates. V/O REPAIR MIX has been specially formulated to match the color of typical portland cement concrete. Cutting-edge Self-Curing Technology (SCT) means wet curing is not required in most applications. V/O REPAIR MIX is non-metallic and no chlorides are added. Combine V/O REPAIR MIX with water to produce a high quality repair material that is ideal where rapid strength gain, high durability, and low shrinkage are desired. Integral corrosion inhibitor increases protection of embedded reinforcement. V/O REPAIR MIX has a working time of 25 minutes and achieves 2000 psi in 2 hours.

USES: Use V/O REPAIR MIX for general and structural concrete repair, marine applications and formed work. V/O REPAIR MIX is a versatile product that is suitable for horizontal, vertical and overhead applications. V/O REPAIR MIX contains an air-entraining admixture for freeze-thaw durability.

ENVIRONMENTAL ADVANTAGES: Use V/O REPAIR MIX to reduce your carbon footprint and lower your environmental impact. Production of Rapid Set cement emits far less CO_2 than portland cement. Contact your CTS representative for EPD, LEED values and other sustainability information.

APPLICATION: Apply V/O REPAIR MIX in thicknesses from 1/4" to 2" (0.6 cm to 5.1 cm). For vertical, small spot repairs, thicknesses up to 6" (15.2 cm) are acceptable.

SURFACE PREPARATION: Surface must be clean, sound, and free of oil, curing compound, dust, mastic and other bond-breakers. Surface must be prepared to a minimum profile of ICRI CSP 3. Mechanically abrade surface and remove all unsound material. Apply V/O REPAIR MIX 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 recommended. Organize work so that personnel and equipment are in place before mixing. Use clean, potable water. **V/O REPAIR MIX may be mixed using 3.5 to 4.0 quarts (3.3 L to 3.8 L) of water per 50-lb (22.7-kg) bag or pail. Use less water to achieve higher strengths. DO NOT exceed 4 quarts (3.8 L) of water per bag or pail.** Place the desired quantity of mix water into the mixing container. While the mixer is running, add material. Mix for the minimum amount of time required to achieve a lump-free, uniform consistency (usually 2 to 3 minutes). Do not retemper. Avoid mixers that entrap large amounts of air.

INSTALLATION: V/O REPAIR MIX may be placed using traditional methods. Place and consolidate quickly to allow for maximum finishing time. Use a method of consolidation that eliminates air voids. Do not wait for bleed water. Apply final finish as soon as possible. V/O REPAIR MIX may be troweled, floated, shaved or broom finished. Do not install on frozen surfaces. To extend working time, use Rapid Set® SET Control retarding admixture or use cold mix water.

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.

OVERVIEW

Highlights:

- Self-Curing Technology (SCT)
- Integral corrosion inhibitor
- Fiber reinforced
- Freeze-thaw resistant
- Concrete gray color
- Polymer modified
- Excellent bond and sag resistance
- 2000 psi (13.8 MPa) in 2 hours
- 25 minute working time

Conforms to:

ASTM C928 R2

Approved:

State (DOT) and local approvals

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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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V/O REPAIR MIX Vertical Overhead Repair Coarse Material

WARM WEATHER: Environmental and material temperatures above 70°F (21°C) may speed 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.

CURING: V/O REPAIR MIX does not require water curing or curing compound under moderate conditions at 70°F (21°C). In dry, windy or hot conditions, mist with water to maintain a continuously wet surface until the product has achieved sufficient strength.

YIELD & PACKAGING: One 50-lb (22.7-kg) bag or pail of V/O REPAIR MIX will yield approximately 0.37 ft^3.

SHELF LIFE: V/O REPAIR MIX 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. 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 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

TYPICAL PHYSICAL DATA

Typical Set Time, ASTM C266	
Initial set	30 minutes
Final set	50 minutes

Compressive Strength, ASTM C109 Mod.	
2 hours	2000 psi (13.8 MPa)
24 hours	4000 psi (27.6 MPa)
7 days	6000 psi (41.4 MPa)
28 days	6500 psi (44.8 MPa)

Bond Strength, ASTM C882 per C928	
1 day	2000 psi (13.8 MPa)
7 days	2800 psi (19.3 MPa)

Flexural Strength, ASTM C348	
7 days	400 psi (2.8 MPa)
28 days	800 psi (5.5 MPa)

Scaling Resistance, ASTM C672 per C928	
Rating	0

Freeze Thaw Resistance, ASTM C666	
Durability factor	> 94%

Length Change, ASTM C157 per C928 (Air Storage)	
28 days (max)	-0.04%

Length Change, ASTM C157 per C928 (Water Storage)	
28 days (max)	+0.03%

Rapid Chloride Ion Penetration, ASTM C1202	
28 days	< 1000 coulombs

Data obtained at 4 quarts of water at 70°F (21°C)