

**Related Bulletins:**

Data Sheet 7D51

Data Sheet 7D59

Specification Bulletin 7S51

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**Master Builders Technologies  
Repair Products  
INSTALLATION BULLETIN 7I51****EMACO® T415 and EMACO® T430***Rapid Strength Repair Mortars*

- Description:** High early strength rapid repair mortar and polymer coating underlayment.
- Application:** Horizontal patching, overlayment and formed vertical repair where minimal downtime and/or quick coating is required.
- Packaging:** EMACO T415 and EMACO T430 are packaged in 55 lb (25 kg) moisture resistant bags.
- Storage Life:** EMACO T415 and EMACO T430 have a shelf life of approximately 12 months when stored in a cool, dry environment. The expiration date is printed on each bag.
- Coverage:** One 55 lb (25 kg) bag of EMACO T415 or EMACO T430 mixed with the required water will cover approximately 9.6 ft<sup>2</sup> (0.9 m<sup>2</sup>) at a 1/2 in. (13 mm) thickness. The yield is approximately 0.40 ft<sup>3</sup> (0.011 m<sup>3</sup>). With an extension of 55% aggregate, 3/8 in. (10 mm) in size, yield is approximately 0.58 ft<sup>3</sup> (0.016 m<sup>3</sup>).

**IMPORTANT: READ THIS FIRST**

Master Builders does not warrant the performance of this product unless the instructions of this document and other related Master Builders documents are adhered to in all respects.

**DIRECTIONS****Surface Preparation:**

A sound base is essential for good repairs. Remove all oil, grease, dirt and loose, disintegrated or unsound concrete from the areas to be patched. For repair of areas damaged by corrosion of reinforcing steel follow ICRI (International Concrete Repair Institute) guidelines for repair of deteriorated concrete resulting from reinforcing steel oxidation.

1. Square cut or undercut the perimeter of the area to be patched to a depth of at least 1/4 in. (13 mm). Do not cut the reinforcement.
2. Chip unsound concrete within the area to be repaired to a depth of 1/4 in. (13 mm) or to whatever additional depth is necessary to reach sound concrete.
3. Remove areas that have been saturated with oil or grease.
4. Thoroughly clean the roughened surface and exposed reinforcement of dirt, loose chips and dust. Remove rust from rebars by brushing or sandblasting. A white metal finish is required.
5. Flush the area with clean water to remove all dust. Use oil-free compressed air to remove all standing water.
6. Form as required when used on vertical surfaces.
7. Saturate the area thoroughly with water prior to placing the mortar.
8. Immediately prior to mixing, blow off or remove all excess water from repair area. Surface should be saturated, surface dry. In patching applications, apply a bond scrub coat of EMACO T415 or EMACO T430 mixed to normal consistency to the patch area, working material into the bottom and sides. For overlays, contact your Master Builders Sales Representative.
9. Immediately after mixing, place the EMACO T415 or EMACO T430 into the prepared area, working the material into the bottom and sides to assure good bond.

**Equipment:**

Have proper measuring containers and tools on the job. Be sure adequate labor is available to handle this fast-setting material. Use mortar mixer for best mixing. For large jobs, the mixer should be capable of mixing up to 500 lb (227 kg) of material. For small batches, a slow speed drill (400 to 600 rpm) and a Jiffier-type paddle may be used.

**Aggregate Extension:**

Use neat material for patches less than 1 in. (25 mm) in depth. EMACO T415 and EMACO T430 should not be used for patches less than 1/4 in. (13 mm) deep.

For deeper patches, a 55 lb (25 kg) bag of EMACO T415 or EMACO T430 may be extended by adding up to 30 lbs (13.6 kg) of thoroughly washed, dry, sound, non reactive 1/4 in. to 1/2 in. (6 to 13 mm) rounded aggregate. When using angular aggregate, reduce the maximum amount added to 25 lb (11.4 kg) to obtain the proper workability.

**Bonding:**

A bonding adhesive is not required with EMACO T415 or EMACO T430. A bond coat of normal consistency material should be used immediately prior to placement.

**Yield**

A 55 lb (25 kg) bag of EMACO T415 or EMACO T430 mixed with the required amount of water produces a volume of approximately 0.40 ft<sup>3</sup> (0.011 m<sup>3</sup>). A 55% extension using 3/8 in. (10 mm) aggregate produces a volume of approximately 0.58 ft<sup>3</sup> (0.016 m<sup>3</sup>).

**Mixing:**

Locate the mixing operation close to the repair area. For mixing, placing and finishing allow approximately 10 minutes for EMACO T415 and 45 minutes for EMACO T430 in normal temperatures 72 °F (22 °C)].

1. Pour 1/2 gal (1.9 L) of clean water into mixer per bag of EMACO T415 or EMACO T430.
2. Add aggregate, if necessary, for deep patches. (If damp aggregate is used, reduce the water content accordingly).
3. Add EMACO T415 or EMACO T430. Mix approximately three minutes. Add small amounts of additional water as needed only after two minutes of initial mixing period. No more than one pint of additional water per bag should be required to achieve a flowable mortar. Mix one additional minute after adding extra water.
4. Only mix quantities that can be placed within the open time of the mortar.

**Placing:**

Apply a bond coat to the prepared surface before application of EMACO T415 or EMACO T430. Thoroughly scrub a thin layer of normal consistency of EMACO T415 or EMACO T430 into the saturated surface dry area with a stiff bristle broom or brush. Do not apply more of this bond scrub coat than can be covered with a mortar before the bond coat dries. Do not retemper this bond coat.

Immediately place the properly mixed EMACO T415 or EMACO T430 into the prepared area from one side to the other. As the job proceeds, work the material firmly into the bottom and sides of the patch to assure good bond. Level the EMACO T415 or EMACO T430 and screed to the elevation of the existing concrete.

**Topcoating:**

Master Builders polymer linings, floorings and coatings can be applied over EMACO T415 and EMACO T430. After the EMACO T415 or EMACO T430 has hardened, abrasive blast or scarify the surface to achieve a surface similar in texture to 40-60 grit sandpaper.

When topcoating with an approved epoxy product, air cure EMACO T415 for a minimum of 4 hours and EMACO T430 for a minimum of 6 hours prior to the application of the primer [at 72 °F (22 °C)]. When topcoating with an approved polyester/vinyl ester product, air cure for a minimum of 24 hours prior to the application of the primer.

**Application Temperature Range:**

EMACO T415: 20 °F to 100 °F (-7 °C to 38 °C)

EMACO T430: 40 °F to 100 °F (4 °C to 38 °C)

Cold Temperatures: EMACO T415 will harden at temperatures as low as 20 °F (-7 °C). Use of ACI recommended cold weather concreting practices, such as warming the substrate, using warm water, and insulating the patch, will accelerate the strength development. Do not use antifreeze or accelerators.

Hot Temperatures: Use of EMACO T430 is recommended.

**NOTE:** In windy conditions care should be taken to protect the exposed surfaces of the freshly placed EMACO T415 or EMACO T430 from premature drying. The use of CONFILM® is recommended.

**Curing:**

For maximum performance and minimal shrinkage, wet cure for a minimum of one day followed by the application of MASTERKURE® or MASTERKURE® 200W curing compounds in accordance with label instructions. Sheeting material, wet burlap or fog spray may be used in lieu of curing compounds.

**Clean Up:**

EMACO T415 and EMACO T430 bond extremely well to most surfaces. Remove repair mortar as soon as possible from tools and mixing equipment with water. Cured material can only be removed mechanically. Periodic cleaning is recommended.

**LIMITATIONS**

- To achieve proper bond to topcoat, allow 4 hours curing time for EMACO T415 and 6 hours curing time for EMACO T430 at 72 °F (22 °C) when overcoating with epoxies, 24 hours for polyesters/vinylesters.
- Minimum application thickness is 1/4 in.
- Do not use where the application requires featheredging.

**Warning:** EMACO T415 and EMACO T430 are one component repair mortars which are formulated for industrial and professional use only, and must be kept out of the reach of children. These products contain chemicals which may be potentially HARMFUL to your health if not stored and used properly. Hazards can be significantly reduced by observing all precautions which are found on Material Safety Data Sheets, product labels and technical literature. Please read all this literature carefully before using this product.

**Waste Disposal Method:**

These products, when discarded or disposed of in their cured form, are not listed as a hazardous waste in Federal Regulations. Dispose in a landfill in accordance with local regulations.

For addition information or personal protective equipment, first aid, and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the jobsite or call (216) 831-5500 in Cleveland, Ohio. In Canada call (416) 741-3830.

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