



Traffic Area Repair Mortars

EMACO® T430

Rapid-strength repair mortar with extended working time

Description

EMACO® T430 repair mortar is based on new high-performance cement technology resulting in high early strengths at a wide range of temperatures. This one-component product can be placed into service in as little as six hours for standard rubber tire traffic. EMACO® T430 repair mortar offers versatile, durable repairs that can be rapidly returned to service. It is specially suited for hot weather applications when extended working time is required.

Features/Benefits

- Will accept an epoxy coating within six hours
- Easy to use, just add water and mix
- Wide temperature use range from 40 to 100°F (4 to 38°C)
- Rapid high early strength (over 1,000 psi [7 MPa] in 3 hours)
- Excellent bond – no bonding agent required
- Resistant to damage caused by freeze/thaw cycles
- Meets ASTM C 928 for rapid repair
- Ample working time for a rapid repair mortar
- Economical – with the capability to extend up to 55% by weight for deep patches (30 lb. [12.6 kg] aggregate per 55 lb. [25 kg] EMACO® T430)

Where to Use Emaco® T430

- Highway overlays and repairs
- Parking structure deck and ramp repairs
- Concrete floor repairs
- Full-depth slab repairs
- Heavy industrial repairs
- Concrete pavement joint repairs
- Wastewater treatment facility repairs
- Truck dock repairs
- Horizontal patching
- Formed vertical repairs where minimal downtime and/or quick coating is required

Important: Read This First

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

How to Apply EMACO® T430

Surface Preparation

A sound base is essential for good repairs. Remove all oil, grease, and 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 1/2 in. (13 mm). Do not cut the reinforcement.
- 2 Chip unsound concrete within the area to be repaired to a depth of 1/2 in. (13 mm) or to whatever additional depth is necessary to reach sound concrete. The base concrete must be roughened to provide a mechanical bond.
- 3 Remove areas that have been saturated with oil or grease.
- 4 Thoroughly clean the roughened surface removing dirt, loose chips, dust, and other bond-breaking material. 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 After removing all standing water, apply a bond scrub coat to the prepared surface. Thoroughly scrub a thin layer of normal consistency EMACO® T430 repair mortar into the saturated surface with a stiff bristle broom or brush or use a suitable bonding agent. Do not apply more of this bond coat than can be covered with mortar before the bond coat dries. Do not retemper this bond coat.
- 9 Immediately prior to mixing, blow off or remove all excess water from repair area. Surface should be saturated, surface dry (SSD). 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 ChemRex® sales representative.

Mixing

Locate the mixing operation close to the area to be repaired. At room temperature [72°F (22°C)] there will be approximately 45 minutes to mix, place, and finish EMACO® T430 repair mortar.

Pour 1/2 gallon (1.9 L) of clean water per bag of EMACO® T430 repair mortar into mixer. Add aggregate, if necessary, for deep patches. (If saturated surface dry (SSD) aggregate is used, reduce the water content accordingly). Add EMACO® T430 repair mortar; mix approximately 5 minutes. Add small amounts of additional water as needed only after the first two minutes of mixing. No more than one pint of additional water per bag should be required to achieve a flowable mortar. Mix two additional minutes after adding extra water. Only mix quantities that can be placed within the open working time of the mortar.

Immediately after mixing, place the 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 Jiffy-type paddle may be used.

Application/Placing

EMACO® T430 repair mortar should be used in patches 1/2 in. (13 mm) or greater in depth. EMACO® T430 repair mortar should be extended when used for patches at a 1 in. depth or greater.

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 1/2 in. (13 mm) deep.

For deeper patches, a 55 lb. (25 kg) bag of EMACO® T430 may be extended by adding up to 30 lbs. (13.6 kg) of thoroughly washed, dry, sound, non (ASR) 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.

Immediately place the properly mixed EMACO® T430 repair mortar 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® T430 repair mortar and screed to the elevation of the existing concrete.

After the EMACO® T430 repair mortar has hardened, abrasive blast or scarify the surface to achieve an appearance similar in texture to 40 - 60 grit sandpaper. Allow EMACO® T430 repair mortar to cure sufficiently before topcoating. For epoxy systems allow 6 hours at 72°F (22°C) before topcoating. For polyester/vinyl ester systems allow EMACO® T430 repair mortar to cure 24 hours at 72°F (22°C) before topcoating.

Topcoating

ChemRex® polymer linings, floorings, and coatings can be applied over EMACO® T430. After the 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® T430 for a minimum of 6 hours at 72°F (22°C) prior to the application of the primer. 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: 40 to 100°F (4 to 38°C).

Cold Temperatures

20 to 40°F (-7 to 4°C)

Use of EMACO® T415 repair mortar is recommended. Use of ACI recommended cold weather concreting practices, (e.g., warming the substrate, using warm water, insulating the patch) will accelerate the strength development. Do not use antifreeze or accelerators.

Hot Temperatures

85 to 100°F (29 to 38°C)

Keep EMACO® T430 repair mortar cool. Mixing with ice water is recommended to extend working time. In windy conditions care should be taken to protect exposed surfaces of freshly placed EMACO® T430 repair mortar from premature drying. Use of CON-FILM® evaporation reducer is recommended.

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

Curing

All physical performance data are based on air cured samples. For maximum performance and minimal shrinkage, wet curing for a minimum of one day followed by the application of an ASTM C 309 compliant curing compound is recommended. Wet curing for periods longer than one day, even up to 28 days, minimizes shrinkage and cracking as well as improves physical properties such as comprehensive strengths.

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.

For Best Performance

- Minimum application thickness is 1/4 in. (6 mm).
- Do not use where the application requires featheredging.
- EMACO® T430 repair mortar is a one-component repair material formulated for industrial and professional use only and must be kept out of the reach of children. These products contain chemicals that may be potentially HARMFUL to your health if not stored and used properly. Hazards can be significantly reduced by observing all precautions found on Material Safety Data Sheets, product labels, and technical literature. Please read this literature carefully before using this product.
- When material and placement temperatures are low, faster setting times may occur. Increased mixing time with higher shear may help to lesson the degree of this phenomena.
- 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

Results were obtained when material was mixed with 0.52 gallons (2 L) of water per bag and cured at 72°F (22°C). Reasonable variations can be expected depending upon mixing equipment, temperature, application methods, test methods, and curing conditions.

Performance Data¹

% water by weight	8.0
Flow @ 5 drops	100

Setting time (ASTM C 266; @ 72° F [22° C])

	50°F (10°C)	70°F (21°C)	90°F (32°C)
Initial (minutes):	140	75	65
Final (minutes):	160	90	75

Compressive strength, psi (MPa)
(ASTM C 109)

	70°F (21°C)
3 hours	1,000 (7)
24 hours	4,500 (31)
7 days	7,800 (54)
28 days	9,000 (62)

Working time, @ 70°F (21°C) 45 minutes

	1 Day psi (MPa)	7 Days psi (MPa)	28 Days psi (MPa)
Flexural strength (ASTM C 348)	580 (4.0)	880 (6.1)	1,150 (7.9)
Splitting tensile (ASTM C 496)	550 (3.8)	1,100 (7.6)	1,250 (8.6)
Slant shear bond (ASTM C 882)	1,800 (12.4)	3,000 (20.7)	3,360 (23.2)
Direct shear bond (Michigan DOT)	150 (1.0)	390 (2.7)	450 (3.1)
Direct tensile bond ChemRex® method	100 (0.7)	170 (1.2)	290 (2.0)

Modulus of elasticity, psi @ 28 Days 5.1 x 10⁶ (35 GPa)

Abrasion resistance

(ASTM C 779 A, 28 day air cured sample)

Time	Inches (centimeters) of wear
30 min.	0.0120 in. (.0305 cm)
60 min.	0.0240 in. (.0610 cm)

Freeze/thaw resistance Retained 98.5% of original
(ASTM C 666 A) dynamic modulus

Rapid chloride permeability² 990 coulombs (very low)
(AASHTO-T277/ASTM C 1202)

Scaling resistance

(ASTM C 672)

	Weight Loss (lb./ft. ²)
25 cycles	CaCl ₂ 0.003 NaCl 0.067
50 cycles	CaCl ₂ 0.005 NaCl 0.084

¹ Typical results from air cured samples.

² Typical results from 3 days moist cured and 39 days air cured samples.

Order Information

Packaging

EMACO® T430

- 55 lb. (25 kg) moisture-resistant bags
- 3,300 lb. (1,500 kg) bulk bags available by special order

Shelf Life

- Unopened bags have a shelf life of 6 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® T430 repair mortar mixed with the required water will cover approximately 9.6 ft.² (0.9 m²) at a 1/2 in. (13 mm) thickness. The yield is approximately 0.40 ft.³ (0.011 m³). With an extension of 55% aggregate, 3/8 in. in size, the yield is approximately 0.58 ft.³ (0.016 m³).

For estimating purposes, 46 bags of EMACO® T430 repair mortar plus 1,380 lb. of clean coarse 3/8 in. SSD aggregate yields approximately 1 yd.³ (60 bags of EMACO® T430 repair mortar plus 820 kg of 9.5 mm SSD aggregate yields approximately 1 m³).

Caution

EMACO® T430

Risks

Eye irritant. Skin irritant. Causes burns. Lung irritant. May cause delayed lung injury.

Precautions

KEEP OUT OF THE REACH OF CHILDREN. Avoid contact with eyes. Wear suitable protective eyewear. Avoid prolonged or repeated contact with skin. Wear suitable gloves. Wear suitable protective clothing. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. Wash soiled clothing before reuse.

First Aid

Wash exposed skin with soap and water. Flush eyes with large quantities of water. If breathing is difficult, move person to fresh air.

Waste Disposal Method

This product when discarded or disposed of is not listed as a hazardous waste in federal regulations. Dispose of in a landfill in accordance with local regulations.

For additional information on personal protective equipment, first aid, and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the job site or contact the company at the address or phone numbers given below.

Proposition 65

This product contains materials listed by the state of California as known to cause cancer, birth defects, or 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

Every reasonable effort is made to apply ChemRex® exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, CHEMREX® MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and CHEMREX® shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the ChemRex® Technical Manager.



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