

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.

RECOMMENDED FOR:

- 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

FEATURES/BENEFITS:

- Will accept an epoxy coating within six hours
- Easy to use; just add water and mix
- Wide temperature use range from 20 to 100 °F (-7 to 38 °C)
- Rapid high early strength – over 2,000 psi in six 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

PACKAGING/ESTIMATING:

EMACO T430 repair mortar is packaged in 55 lb (25 kg) moisture-resistant polyethylene lined bags.

One 55 lb (25 kg) bag of EMACO T430 repair mortar mixed with the required water will cover approximately 9.6 ft² (0.9 m²) at a 1/2 in. (13 mm) thickness. The yield is approximately 0.40 ft³ (0.011 m³). With an extension of 55% aggregate, 3/8 in. in size, the yield is approximately 0.58 ft³ (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 yd³ (57 bags of EMACO T430 repair mortar plus 770 kg of 9.5 mm SSD aggregate yields approximately 1 m³).

PERFORMANCE DATA¹:

% water by weight 8.0

Flow @ 5 drops 100

Setting Time

(ASTM C-266; @ 72 °F (22 °C) +/- 2°)

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

Compressive Strength

(ASTM C-109)

	psi (MPa)		psi (MPa)		psi (MPa)	
	50 °F (10 °C)		70 °F (21 °C)		90 °F (32 °C)	
3 h	980	(6.8)	1,120	(7.7)		
24 h	4,000	(27.6)	4,500	(31.0)	5,000	(34.5)
7 day	8,980	(61.9)	9,950	(68.6)	10,100	(69.6)
28 day	10,100	(69.6)	10,990	(75.8)	11,050	(76.2)

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 (MB Method)	100 (0.7)	170 (1.2)	290 (2.0)
Modulus of Elasticity, @ 28 Days (psi x 10 ⁶)	5.1 psi (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

(ASTM C-666-A)

Retained 98.5% of original dynamic modulus

Rapid Chloride Permeability²

(AASHTO-T277/ASTM C-1202)

990 coulombs (very low)

Scaling Resistance, Weight Loss (lb/ft²)

(ASTM C 672)

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.

The following information regarding surface preparation, mixing, application and curing is provided as a brief overview. For detailed instructions before use of this product, reference the EMACO T430 Installation Bulletin.

SURFACE PREPARATION:

Prepare the area to be repaired by square cutting the edges and removing all unsound concrete. The base concrete must be roughened to provide mechanical bond and dampened with water (SSD condition).

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. 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. 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.

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 gal (1.9 L) of clean water per bag of EMACO T430 repair mortar into mixer. Add aggregate, if necessary, for deep patches. (If damp aggregate is used, reduce the water content accordingly). Add EMACO T430 repair mortar; mix approximately 3 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 one additional minute after adding extra water.

APPLICATION:

EMACO T430 repair mortar should be used in patches 1/4 in. or greater in depth. EMACO T430 repair mortar should be extended when used for patches at a 1 in. depth or greater. 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.

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, 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: 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 CONFILM® 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 MASTERKURE®, or MASTERKURE 200W curing compounds 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 compressive strengths.

LIMITATIONS:

- Minimum application thickness is 1/4 in.
- Do not use where the application requires featheredging.
- EMACO T430 repair mortar is a one component repair material which is 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 this literature carefully before using this product.

RELATED BULLETINS:

Material Safety Data Sheet — EMACO T430
Installation Bulletin (7I51) #CP214 — EMACO T430
Specification Bulletin (7S59) #CP038 — EMACO T430

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