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Maintenance of Concrete

Technical Data Guide

MasterEmaco® T 430

Rapid-strength repair mortar with extended working time

FORMERLY EMACO® T430

PACKAGING
55 lb (25 kg) polyethylene-lined bags

YIELD
0.4 ft³ (0.011 m³) per 55 lb (25 kg)
- WHEN EXTENDED 55%:
0.58 ft³ (0.016 m³)

STORAGE
Store in unopened containers in cool, clean, dry conditions

SHELF LIFE
6 months when properly stored

VOC CONTENT
0 g/L less water and exempt solvents

DESCRIPTION
MasterEmaco T 430 is a one-component high-performance cementitious repair mortar. It is especially suited for hot-weather applications when an extended working time is required.

PRODUCT HIGHLIGHTS
- Rapid high early strength with extended working time
- Low residual moisture, can be coated in as little as 6 hours
- Wide temperature application range(20 to 100° F [-7 to 38° C])
- Only requires the addition of potable water
- No bonding agent required
- Excellent resistance to freeze/thaw cycling
- Can be extended up to 55% by weight providing higher yields

APPLICATIONS
- Interior and exterior
- Horizontal surfaces
- Applications requiring high early-strength gain
- Structural concrete repairs
- Partial and full-depth repairs

SUBSTRATES
- Concrete

HOW TO APPLY

SURFACE PREPARATION

CONCRETE

1. Concrete must be structurally sound and fully cured (28 days).
2. Saw cut the perimeter of the area being repaired into a square with a minimum depth of 1" (25 mm).
3. The surface to be repaired must be clean, saturated surface-dry (SSD), strong, and roughened to a CSP of 8–9 following ICRI Guideline no. 310.2 to permit proper bond.

REINFORCING STEEL

1. Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 310.1R.
2. For additional protection from future corrosion, coat the prepared reinforcing steel with MasterProtect P 8100 AP.

Technical Data

Composition

MasterEmaco T 430 contains modified cementitious binder, aggregate, and additives.

Typical Properties

PROPERTY	VALUE
Water, % by weight	8.0
Flow at 5 drops	100
Working time, min, at 70° F (21° C)	45

Test Data[1]

PROPERTY	RESULTS			TEST METHOD
Compressive strength, psi (MPa), at 70° F (21° C)				ASTM C 109
3 hrs	1,000 (7)			
24 hrs	4,500 (31)			
7 days	7,800 (54)			
28 days	9,000 (62)			
Setting time, min				ASTM C 266 at 72° F (22° C)
	50° F (10° C)	**70° F (21° C)**	**90° F (32° C)**	
Initial set	140	75	65	
Final set	160	90	75	
	1 Day Psi (MPa)	**7 Day Psi (MPa)**	**28 Day Psi (MPa)**	
Flexural strength	580 (4.0)	880 (6.1)	1,150 (7.9)	ASTM C 348
Splitting tensile	550 (3.8)	1,100 (7.6)	1,250 (8.6)	ASTM C 496
Slant shear bond	1,800 (12.4)	3,000 (20.7)	3,360 (23.2)	ASTM C 882
Direct shear bond	150 (1.0)	390 (2.7)	450 (3.1)	Michigan DOT
Direct tensile bond	100 (0.7)	170 (1.2)	290 (2.0)	BASF method
Modulus of elasticity, psi (GPa)	5.1×10^6 (35)			
Abrasion resistance, in (cm) of wear, 28-day, air-cured sample				ASTM C 779 A
30 min	0.0120 (0.0305)			
60 min	0.0240 (0.0610)			
Freeze/thaw resistance, % RDM	98.5			ASTM C 666 A
Rapid chloride permeability[2], coulombs	990 (very low)			AASHTO-T277 / ASTM C 1202
Scaling resistance, weight loss, lb/ft^2				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.
Results were obtained when material was mixed with 0.52 gallons (2 L) of water per bag and cured at 72° F (22° C). Expect reasonable variations, depending upon mixing equipment, temperature, application methods, test methods, and curing conditions.

MIXING

1. Precondition material to 70° F ±5° (21° C ±3°) before mixing.
2. Use a minimum ½" slow-speed drill and mixing paddle or an appropriately sized mortar mixer. Do not mix by hand.
3. Pour ½ gallon (1.9 L) of clean water per bag of MasterEmaco T 430 into mixer.
4. Add the powder to the water and mix approximately 3 minutes. Add small amounts of additional water as needed only after the first 2 minutes of mixing. No more than 1 pint of additional water per bag should be required to achieve a flowable mortar. Mix an additional 2 minutes after adding extra water. Use neat material for patches less than 1" (25 mm) in depth.
5. For deeper patches, a 55 lb (25 kg) bag of MasterEmaco T 430 may be extended by adding up to 30 lbs (13.6 kg) of thoroughly washed, SSD, sound, non (ASR) reactive ¼–½" (6–13 mm) rounded aggregate. When using angular aggregate, reduce the maximum amount added to 25 lbs (11.4 kg) to obtain the proper workability.
6. Aggregate must comply with the requirements of ASTM C 33.

APPLICATION

1. After removing all standing water, thoroughly scrub a thin layer of bond coat into the saturated surface with a stiff-bristled broom or brush. Do not dilute the bond coat with water. Do not apply more of this bond coat than can be covered with mortar before the bond coat dries. Do not retemper the bond coat.
2. Immediately place the repair mortar from one side of the prepared area to the other. Work the material firmly into the bottom and sides of the patch to ensure good bond. Level the MasterEmaco T 430 and screed it to the elevation of the existing concrete. Apply the appropriate finish.
3. Finish the completed repair, as required, taking care not to overwork the surface.
4. The recommended application range of MasterEmaco T 430 is from 20 to 85° F (-7 to 29° C). Follow ACI 305 and 306 for hot or cold weather.
5. A maximum of 45 minutes should be allowed to mix, place, and finish MasterEmaco T 430 at 70° F (21° C).

TOPCOATING

1. BASF has a wide range of polymer flooring products for topcoating. Contact your local representative for more information.
2. For epoxy systems, allow 6 hours at 72° F (22° C) before topcoating. For polyester or vinyl ester systems, allow to cure 24 hours at 72° F (22° C) before priming and topcoating. Consult coating supplier for overcoating requirements.

CURING

Cure with an approved curing compound compliant with ASTM C 309 or preferably ASTM C 1315.

CLEAN UP

Clean tools and equipment with clean water immediately after use. Cured material must be removed mechanically.

FOR BEST PERFORMANCE

- Do not use MasterEmaco T 430 for patches less than ½" (13 mm) deep.
- Do not use where applications require featheredging.
- Low material and placement temperatures may accelerate setting times. Increased mixing time with higher shear may lesson this phenomenon.
- Do not mix partial bags.
- Do not add plasticizers, accelerators, retarders, or other additives.
- For professional use only; not for sale to or use by the general public.
- Make certain the most current versions of product data sheet and SDS are being used; visit www.master-builders-solutions.BASF.us to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.basf.us, e-mailing your request to basfbscst@basf.com or calling 1(800)433-9517. Use only as directed. **For medical emergencies only, call ChemTrec® 1(800) 424-9300.**

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