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Maintenance of
Concrete

Technical Data Guide

MasterEmaco® N 423RS

Fast-setting concrete-repair mortar for horizontal, vertical, and overhead use

FORMERLY EMACO® FS

PACKAGING

50 lb (22.6 kg) polyethylene-lined bags

YIELD

0.4 ft³/50 lb bag (0.011 m³/22.6 kg)

STORAGE

Store in unopened containers in a cool, clean, dry area

SHELF LIFE

9 months when properly stored

VOC CONTENT

0 g/L less water and exempt solvents

DESCRIPTION

MasterEmaco N 423RS is a fast-setting polymer-modified cementitious repair mortar for horizontal, vertical, or overhead surfaces.

PRODUCT HIGHLIGHTS

- Polymer modification improves adhesion and provides increased freeze/thaw stability
- Non-sag consistency able to be placed in 1" (25 mm) thick lifts
- Fast setting
- Only requires the addition of potable water
- Can be mixed with MasterEmaco A 400 to increase high-performance properties

APPLICATIONS

- Interior and exterior
- Vertical and overhead
- Horizontal
- Above and below grade
- Spalls or holes in concrete
- Deteriorated edges

SUBSTRATES

- Concrete
- Masonry

HOW TO APPLY

SURFACE PREPARATION

1. Substrate 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 ¼" (6 mm).
3. The surface to be repaired must be clean, free of laitance and saturated surface-dry (SSD) 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 N 423 RS is composed of silica (quartz) and Portland cement.

Typical Properties

PROPERTY	VALUE
Setting time , min, at 70° F (21° C)	10
Liquid requirements	Approximately 3 qts/50 lb bag (2.8 L/22.7 kg bag)

Test Data

PROPERTY	RESULTS	TEST METHOD
Compressive strength , psi (MPa),		ASTM C 109
2 hours	700 (4.8)	
24 hours	3,100 (21.4)	
7 days	5,200 (35.8)	
28 days	6,500 (44.8)	
Volume change , %		ASTM C 1090
7 days	+0.012 (no shrinkage)	
28 days	+0.017 (no over shrinkage)	

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

MIXING

1. Precondition material to 70° F ±5° (21° C ±3°) before mixing.
2. Mechanically mix at slow speed with a ¾" drill and mixing paddle.
3. Add approximately 3 quarts (2.84 L) of potable water or approximately 3 quarts of MasterEmaco A 400 to the mixing container. Add the MasterEmaco N 423RS dry powder. Mix to a uniform, stiff plastic-like consistency. Do not mix for more than 1 minute.
4. Placement time is 10 minutes at 70° F (21° C) and 50% relative humidity. Do not retemper mixes with additional liquid. Carefully measure amounts used in mechanical mixers and clean out the drum frequently to avoid build up.

APPLICATION

1. Dampen the surface with potable water; it must be saturated surface-dry (SSD) with no standing water.
2. With a gloved hand, scrub a small quantity of mixed material into the SSD substrate. Thoroughly key in and work the material throughout the cavity to promote bond. Do not apply more of the bond coat than can be covered with mortar before the bond coat dries.
3. Apply material in lifts of ¼–1" (6–25 mm). Avoid featheredging. For optimum mechanical bond on successive lifts, thoroughly score each lift and allow to reach initial set before the next layer is applied. Placement time is 10 minutes at 70° F (21° C) and 50% relative humidity.
4. For repairs greater than 1" (25 mm) in depth, successive lifts are mandatory, or preferably, add 30–50 lbs (13.6–22.6 kg) of washed, graded saturated surface-dry (SSD) silica aggregate per 50 lbs (22.6 kg) of MasterEmaco N 423RS powder. Score the lift's surface and allow adequate cure time before installing additional lifts.
5. Trowel, shave or shape material to the desired finish after initial set.
6. The recommended application range of MasterEmaco N 423RS is from 40 to 90° F (4 to 32° C). Follow ACI 305 and 306 for hot or cold weather guidelines.
7. For repairs greater than 1" (25 mm) in depth, successive lifts are mandatory, or preferably, add 30–50 lbs (13.6–22.6 kg) of washed, graded saturated surface-dry (SSD) silica aggregate per 50 lbs (22.6 kg) of MasterEmaco N 423RS powder. Score the lift's surface and allow adequate cure time before installing additional lifts.

CURING

Cure with an approved water based curing compound compliant with ASTM C 309 or preferably ASTM C 1315. If the repair area will receive a coating, wet curing is recommended.

CLEAN UP

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

FOR BEST PERFORMANCE

- Maximum lift recommended is 1" (25 mm) for neat material
- Do not use as an overlay
- Do not bridge moving cracks or joints.
- Do not exceed a length-to-width ratio of 2 to 1 for the repair area.
- Mixing MasterEmaco A 400 is required in thinner applications to avoid cracking.
- Do not overwork material
- Do not add plasticizers, accelerators, retarders, or other additives.
- Bonding agents are recommended for large areas as well as permanently damp areas.
- Protect from freezing for 24 hours after application.
- 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.

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