

MasterEmaco® N 420 CI

Low dust*, non-sag concrete repair mortar with integral corrosion inhibitor and fiber reinforce for vertical and overhead applications

PACKAGING

50 lb (22.6 kg) polyethylene-lined bags

YIELD

0.40 ft³ per 50 lb bag (0.011 m³ per 22.6 kg bag)

SHELF LIFE

1 year when properly stored

STORAGE

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

VOC CONTENT

0 g/L less water and exempt solvents

DESCRIPTION

MasterEmaco N 420CI is a low dust, trowel-grade, integrally polymer modified repair mortar with an integral corrosion inhibitor and fiber reinforce.

PRODUCT HIGHLIGHTS

- Non-sag consistency able to be placed in 2" (51 mm) thick lifts
- Readily sculpted, shaved, and finished to match existing substrate
- Low-dusting for added worker comfort and safety
- Only requires the addition of potable water
- Low shrinkage produces stable, durable bond
- Polymer modification improves adhesion and provides increased freeze/thaw stability

APPLICATIONS

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

SUBSTRATE

- Concrete
- Masonry
- Structural Concrete
- Precast & Tilt Wall

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 0.25" (6 mm).
3. The surface to be repaired must be clean, free of laitance and saturated surface-dry (SSD) following current ICRI Guideline no. 310.2R for surface prep requirements 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 8100 AP.

* Only material manufactured November 2019 or later is low dust. Please contact sales representation with any questions.

Technical Data Composition

MasterEmaco® N 420 CI is a blend of cement, graded aggregate and set-control additives.

TEST DATA

The following results were obtained with 3.5 qts (3.3 L) water / 50 lb (22.3 kg) bag.

PROPERTY	RESULTS	TEST METHOD
Set time, min at 72 °F (22 °C)		ASTM C 266
Initial	<35	
Final	<45	
Working time, min	20–30	
Length change, % (μstrain)		ASTM C 157 ¹
Drying shrinkage	-0.096%	
Wetting expansion	+0.027%	
Freeze/thaw resistance, % RDM at 300 cycles	96.6	ASTM A 666 (Procedure A)
Scaling resistance, lb/ft² (kg/m²)		ASTM C 672
25 cycles	0.18 (0.87) Very light scaling	
50 cycles	0.24 (1.17) Slight scaling	
Slant shear bond strength, psi (MPa)		ASTM C 882, modified ²
7 day	1,250 (8.6)	
28 day	1,700 (11.7)	
Splitting tensile strength, psi (MPa)		ASTM C 496
7 day	340 (2.3)	
28 day	380 (2.6)	
Flexural strength, psi (MPa)		ASTM C 348
7 day	600 (4.1)	
28 day	1,000 (6.8)	
Compressive strength, psi (MPa), 2" cubes		ASTM C 109
7 day	4,500 (31)	
28 day	5,500 (40)	
Dust Reduction, %		DIN55992-2
MasterEmaco N 420CI vs. Control	75%	

TYPICAL PROPERTIES

PROPERTY	VALUE
Working time, min, at 70 °F (21 °C)	20–30
Application temperature range, °F (°C)	45–95 (7.2–35)

¹ICRI Modification (3" (7.62 cm) bars).

²No bonding agent used; mortar scrubbed into substrate.

All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

MIXING

1. Precondition to 70 °F ± 5° (21° ± 3°) before mixing.
2. Add 3 quarts (2.8 L) of potable water into a clean mixing container. Gradually sift in powder 1/3 at a time while mixing continuously at slow speed (high speeds may entrain air). Mix for a minimum of 3 minutes to ensure a uniform, lump-free consistency. Do not exceed a total of 3.5 quarts (3.3 L) of mixing water per 50 lb (19.8 kg) bag.

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 the and work the material throughout the cavity to promote proper bond. Do not apply more of the bond coat than can be covered with mortar before the bond coat dries.
3. Apply the material in lifts of 1/4-2" (6-51 mm). Avoid feather edging. 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 15-20 minutes at 70 °F (21 °C) and 50% relative humidity.
4. Trowel, shave or shape material to the desired finish after initial set.
5. The recommended application range of MasterEmaco N 420 CI is from 45 to 95° (7.2 to 35 °C). Follow ACI 305 and 306 for hot or cold weather guidelines.

CURING

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

CLEAN UP

- Clean tools and equipment with clean water immediately after use. Cured material can be removed by mechanical means only.

FOR BEST PERFORMANCE

- Do not bridge moving cracks or joints.
- Do not overwork material.
- Do not add plasticizers, accelerators, retarders, or other additives.
- Do not extend with aggregate.
- 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 MSDS are 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 Master Builders Solutions personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL

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IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.

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