

MasterEmaco® N 425

Non-sag concrete repair mortar with integral corrosion inhibitor for vertical and overhead applications

FORMERLY GEL PATCH

PACKAGING

43 lb (19.5 kg) polyethylene-lined bags

YIELD

0.43 ft³ per 43 lb bag
(0.012 m³/19.5 kg)

STORAGE

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

SHELF LIFE

12 months when properly stored

VOC CONTENT

0 g/L less water and exempt solvents

DESCRIPTION

MasterEmaco N 425 is a trowel-grade, lightweight, polymer-modified, silica fume-enhanced repair mortar with an integral corrosion inhibitor.

PRODUCT HIGHLIGHTS

- Non-sag consistency able to be placed in 2" (51 mm) thick lifts
- Readily sculpted, shaved, and finished to match existing substrate
- Very low chloride permeability and an integral corrosion inhibitor protects reinforcing steel
- Only requires the addition of potable water
- Low shrinkage produces stable, durable bond
- Lightweight microscopic beads improve vertical and overhead workability
- 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

SUBSTRATES

- Concrete
- Masonry
- Structural Concrete

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 425 is composed of crystalline (quartz) silica and Portland cement.

Typical Properties

PROPERTY	VALUE
Working time, min at 70° F (21° C)	20–30

Test Data

PROPERTY	RESULTS	TEST METHODS
Compressive strength, psi (MPa)		ASTM C 109, modified*
1 day	2,150 (14.8)	
7 days	5,600 (38.6)	
28 days	6,750 (46.5)	
Modulus of elasticity, psi (MPa)	5.6 x 10 ⁵ (3,861)	ASTM C 215
Splitting tensile strength, psi (MPa)		ASTM C 496, modified* (wet cure)
1 day	310 (2.1)	
7 days	560 (3.9)	
28 days	610 (4.2)	
Flexural strength, psi (MPa)		ASTM C 348, modified*
1 day	500 (3.4)	
7 days	800 (5.5)	
28 days	1,110 (7.7)	
Bond strength, psi (MPa)		ASTM C 882, modified* (mortar scrubbed into substrate)
1 day	900 (6.2)	
7 days	1,900 (13.1)	
28 days	2,450 (16.9)	
Water absorption, %, 28 days	4	ASTM C 642
Chloride permeability, coulombs	Very low range	AASHTO T-277 (According to ASTM C 1202, table 1)
Length change, %, in/in, wet cure		ASTM C 157
1 day	+0.019	
7 days	+0.028	
28 day	+0.034	
Length change, %, in/in, dry cure*		ASTM C 157
1 day	-0.026	
7 days	-0.11	
28 days	-0.15	
Linear coefficient of thermal expansion, in/in/° F	5.3 × 10 ⁻⁶	ASTM C 531
Freeze / Thaw Resistance, % RDM	98.8%	ASTM C 666 A
Scaling Resistance, lbs/ft² (kg/m²) 50 Cycles	0.0 (0.0) No Scaling	ASTM C 672

*At 50% relative humidity

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 2¾ quarts (2.6 L) of potable water into a clean mixing container. Gradually sift in powder ⅓ 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 quarts (2.8 L) of mixing water per 43 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 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 ¼–2" (6–51 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 20–30 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 425 is from 40 to 90° F (4 to 32° C). Follow ACI 305 and 306 for hot or cold weather guidelines.

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

- 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 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 basfbcst@basf.com or calling 1(800)433-9517. Use only as directed.

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