

MasterEmaco® N 427

Smooth textured patching mortar for architectural concrete

FORMERLY EMACO® R 400 ARCHITECTURAL

PACKAGING

50 lb (22.6 kg) polyethylene-lined bags

YIELD

0.45 ft³ per 50 lb bag
(0.013 m³ per 22.6 kg bag)

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 427 is low-slump, fast setting, Portland-cement-based, multi-purpose smooth repair mortar for detailed fine architectural work. It does not require the use of forms or multi-layered casting techniques.

PRODUCT HIGHLIGHTS

- Non-sag consistency able to be placed in 1" (25 mm) thick lifts
- Smooth consistency blends with smooth textured concrete surfaces
- Light gray color blends with most standard concrete surfaces
- Only requires the addition of potable water
- Can be mixed with MasterEmaco A 660 to increase high-performance properties

APPLICATIONS

- Interior and exterior
- Vertical and overhead
- Non-traffic-bearing 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 427 is a proprietary mix composed of cement, graded silica, fillers, and additives.

Test Data

MasterEmaco N 427 modified with MasterEmaco A 660 diluted with water in a 1 to 3 ratio at 3.75 qts (3.5 L) per 50 lb (22.6 kg) bag.

PROPERTY	RESULTS	TEST METHOD
Initial set , min	10–15	ASTM C 807, modified
Final set , min	20–30	ASTM C 807, modified
Density , lb/ft ³ (g/cm ³)		ASTM C 138
Wet	128–133 (2.05–2.12)	Lab Method
Cured	125–131 (2.00–2.10)	
Compressive strength , psi (MPa) using 2" (51 mm) cubes		ASTM C 109
1 day	3,000 (20.7)	
7 days	4,000 (27.6)	
28 days	5,000 (34.5)	
Flexural strength , psi (MPa)		ASTM C 348
7 days	680 (4.7)	
28 days	990 (6.8)	
Tensile strength , psi (MPa)		ASTM C 190
1 day	210 (1.4)	
7 days	580 (4)	
28 days	830 (5.7)	
Modulus of elasticity , psi (MPa)		ASTM C 469
28 days	3.4×10^6 (2.3×10^4)	
Freeze/thaw resistance , %		ASTM C 666
Weight gain	1.9	
Durability factor	104	
Scaling resistance , rating after 50 cycles	0	ASTM C 672
Water-vapor transmission , perms	4.72	ASTM E 96
Coefficient of thermal expansion , linear, in/in/° F	4.49×10^{-6}	ASTM C 531

Test results are averages obtained under laboratory conditions at 70° F (21° C) and 50% rh. Reasonable variations can be expected.

MIXING

1. Precondition material to 70° F ±5° (21° C ±3°) before mixing.
2. Product can be mixed with water only, or with a water and MasterEmaco A 660 mixture to enhance its properties. Prepare a mixture of 1 part MasterEmaco A 660 to 3 parts water. To improve bonding, MasterEmaco A 660 may be mixed 1 to 1 with water.
3. Low slump and ability to build without forms is dependent on a low water-to-cement mix. Add 3 quarts (2.7 L) of water and MasterEmaco A 660 mixture to a clean container. Gradually add powder while mixing at low speed to obtain a uniform, lump-free consistency. Add up to 3/4 quarts (0.7 L) of water and MasterEmaco A 660 mixture only if needed for workability. Mechanically mix with slow-speed drill and mixing paddle at 400 to 600 rpm, or use an appropriately sized mortar mixer.
4. Do not overmix or beat air into the mix. Do not exceed 3.75 quarts (3.5 L) of liquid per 50 lb (22.6 kg) bag. Mix for 2–3 minutes. Do not overmix.
5. For applications exceeding the above recommendations, extend MasterEmaco N 427 with up to 15 lbs (6.8 kg) of washed, graded, saturated surface-dry (SSD) aggregate per 50 lb (22.6 kg) bag. When extended up to 3 50 (22.6 kg) bags of MasterEmaco N 427 can be used at once.

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 1" (25 mm) on vertical surfaces and 1/2" (13 mm) overhead, with a minimum placement depth of 1/8" (3 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 10–15 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 427 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

- Texture should be achieved on a jobsite sample area and retained throughout the entire restoration project as a standard..
- Do not bridge moving cracks or joints.
- Do not overwork material
- Do not add plasticizers, accelerators, retarders, or other additives.
- MasterEmaco N 427 is not intended for continuous contact with acid or sulfate containing water. Very soft water will have an adverse effect on performance.
- Overmixing can reduce density, strength, and durability.
- 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.com/en-us to verify the most current versions.
- 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 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.com/en-us, e-mailing your request to mbsbscst@mbcc-group.com or calling 1(800)433-9517. Use only as directed. **IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.**

LIMITED WARRANTY NOTICE

Master Builders Solutions Construction Systems US, LLC ("Master Builders") warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. MASTER BUILDERS MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of Master Builders. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. MASTER BUILDERS WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on Master Builders' present knowledge and experience. However, Master Builders assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. Master Builders reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.

FOR PROFESSIONAL USE ONLY. NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC.