MasterEmaco® N 427
Smooth textured patching mortar for architectural concrete
FORMERLY EMACO® R 400 ARCHITECTURAL

DESCRIPTION
MasterEmaco N 427 is low-slpump, fast setting, Portland-cement-based, multi-purpose smooth repair mortar for detailed fine architectural work. It does not require the use of forms or multilayered 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 increases high-performance properties

HOW TO APPLY
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.

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

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
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.

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<th>PROPERTY</th>
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<td>Initial set, min</td>
<td>10–15</td>
<td>ASTM C 807, modified</td>
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<tr>
<td>Final set, min</td>
<td>20–30</td>
<td>ASTM C 807, modified</td>
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<tr>
<td>Density, lb/ft³ (g/cm³)</td>
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<tr>
<td>Wet</td>
<td>128–133 (2.05–2.12)</td>
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<tr>
<td>Cured</td>
<td>125–131 (2.00–2.10)</td>
<td>Lab Method</td>
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<td>Compressive strength, psi (MPa)</td>
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<td>3,000 (20.7)</td>
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<td>7 days</td>
<td>4,000 (27.6)</td>
<td></td>
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<td>28 days</td>
<td>5,000 (34.5)</td>
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<tr>
<td>7 days</td>
<td>680 (4.7)</td>
<td>ASTM C 348</td>
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<td>28 days</td>
<td>990 (6.8)</td>
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<td>Tensile strength, psi (MPa)</td>
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<tr>
<td>1 day</td>
<td>210 (1.4)</td>
<td>ASTM C 190</td>
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<td>7 days</td>
<td>580 (4)</td>
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<tr>
<td>28 days</td>
<td>830 (5.7)</td>
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<tr>
<td>Modulus of elasticity, psi (MPa)</td>
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<tr>
<td>28 days</td>
<td>3.4 × 10⁶ (2.3 × 10⁴)</td>
<td>ASTM C 469</td>
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<td>Freeze/thaw resistance, %</td>
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<td></td>
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<td>Weight gain</td>
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<td>ASTM C 666</td>
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<tr>
<td>Durability factor</td>
<td>104</td>
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<tr>
<td>Scaling resistance,</td>
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<td>ASTM C 672</td>
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<tr>
<td>rating after 50 cycles</td>
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<tr>
<td>Water-vapor transmission, perms</td>
<td>4.72</td>
<td>ASTM E 96</td>
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<tr>
<td>Coefficient of thermal expansion, linear, in/in/° F</td>
<td>4.49 × 10⁻⁶</td>
<td>ASTM C 531</td>
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</tbody>
</table>

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°F (21°C ±3°C) 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 ¾ 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 ¼” (13 mm) overhead, with a minimum placement depth of ½” (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.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 or calling 1(800)424-9300. For medical emergencies only, call ChemTrec® 1(800)424-9300.

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