MasterEmaco® N 424
Fast-setting cement-based repair mortar
FORMERLY EMACO® GP

DESCRIPTION
MasterEmaco N 424 is a general purpose, fast-setting, nonsag cement-based repair mortar for small repairs on vertical, horizontal, and overhead surfaces.

PRODUCT HIGHLIGHTS
• 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 660 to increases high-performance properties

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 1/4” (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
60 lb (27.2 kg) plastic pails

YIELD
0.45 ft³ per 50 lb bag
(0.013 m³ per 22.6 kg bag)
0.54 ft³ per 60 lb pail
(0.015 m³ per 27.2 kg pail)

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

FORMERLY EMACO® GP
DeSCRIPTIO

0.45 ft³ per 50 lb bag
(0.013 m³ per 22.6 kg bag)
0.54 ft³ per 60 lb pail
(0.015 m³ per 27.2 kg pail)

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

12 months when properly stored

0 g/L less water and exempt solvents

Technical Data Guide
Technical Data
Composition
MasterEmaco N 424 is a proprietary mix composed of cement, graded silica, calcium sulfate, fillers, and additives.

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>RESULTS</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial set, min</td>
<td>10–15</td>
<td>ASTM C 807, modified</td>
</tr>
<tr>
<td>Final set, min</td>
<td>20–30</td>
<td>ASTM C 807, modified</td>
</tr>
<tr>
<td>Density, lb/ft³ (g/cm³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet</td>
<td>128–133 (2.05–2.12)</td>
<td>ASTM C 138</td>
</tr>
<tr>
<td>Cured</td>
<td>125–131 (2.00–2.10)</td>
<td>Lab Method</td>
</tr>
<tr>
<td>Compressive strength, psi (MPa)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 day</td>
<td>2,700 (18.9)</td>
<td>ASTM C 109</td>
</tr>
<tr>
<td>7 days</td>
<td>4,000 (28)</td>
<td></td>
</tr>
<tr>
<td>28 days</td>
<td>4,800 (34)</td>
<td></td>
</tr>
<tr>
<td>Flexural strength, psi (MPa)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 days</td>
<td>680 (4.7)</td>
<td>ASTM C 348</td>
</tr>
<tr>
<td>28 days</td>
<td>990 (6.9)</td>
<td></td>
</tr>
<tr>
<td>Tensile strength, psi (MPa)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 day</td>
<td>210 (1.47)</td>
<td>ASTM C 190</td>
</tr>
<tr>
<td>7 days</td>
<td>580 (4.06)</td>
<td></td>
</tr>
<tr>
<td>28 days</td>
<td>830 (5.81)</td>
<td></td>
</tr>
<tr>
<td>Modulus of elasticity, psi (MPa)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 days</td>
<td>2.18 × 10⁶ (1.5 × 10⁵)</td>
<td>ASTM C 469</td>
</tr>
<tr>
<td>Freeze/thaw resistance, %</td>
<td>4.5</td>
<td>ASTM C 666, Method A</td>
</tr>
<tr>
<td>weight loss at 300 cycles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaling resistance,</td>
<td>1</td>
<td>ASTM C 672</td>
</tr>
<tr>
<td>rating after 50 cycles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water-vapor transmission, perms</td>
<td>18.6</td>
<td>ASTM E 96</td>
</tr>
<tr>
<td>Coefficient of thermal expansion,</td>
<td>2.77 × 10⁻⁶</td>
<td>ASTM C 531</td>
</tr>
<tr>
<td>linear, in/in²° F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface burning characteristics</td>
<td></td>
<td>ASTM E 84</td>
</tr>
<tr>
<td>Smoke</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Flame spread</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td>Class 1</td>
<td></td>
</tr>
</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. Add 3 quarts (2.8 L) of water or 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. Mechanically mix with slow-speed drill and mixing paddle at 400–600 rpm or use an appropriately sized mortar mixer.
4. Mix for 2–3 minutes. Do not overmix. Add up to ¾ quart (0.7 L) of water or water and MasterEmaco A 660 mixture, only if needed for workability. Do not exceed 3.75 quarts (3.5 L) of liquid per 50 lb (22.6 kg) bag or 4.5 quarts (4.23 L) per 60 lb (27 kg) pail.
5. For applications exceeding the above recommendations, extend MasterEmaco N 424 with up to 15 lbs (6.8 kg) of washed, graded, surface saturated-dry (SSD) aggregate per 50 lb (22.6 kg) bag. When extended, up to 3 50 lb (22.6 kg) bags of MasterEmaco N 424 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 ¼–1” (3–25 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 10–15 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 424 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
- Maximum single lift recommendation is 1” (25 mm) on vertical surfaces and ½” (13 mm) overhead.
- Not intended for continuous contact with acid or sulfate-containing water. Very soft water will have an adverse effect on performance.
- Over-mixing can reduce density, strength, and durability.
- Do not bridge moving cracks or joints.
- 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 job site.

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.
For medical emergencies only, call ChemTrec® 1(800)424-9300.

LIMITED WARRANTY NOTICE
BASF 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. BASF 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 the replacement of product or refund of the purchase price, at the sole option of BASF. 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. BASF 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 BASF’s present knowledge and experience. However, BASF 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. BASF 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.