



The Chemical Company

Distributed by:  
BEST MATERIALS LLC  
Phoenix AZ  
Ph: 800-474-7570, 602-272-8128  
Fax: 602-272-8014  
Email: sales@bestmaterials.com  
www.bestmaterials.com

PRODUCT DATA

3 03 01 00 Maintenance of Concrete

# EMACO GP

Fast-setting cement-based repair mortar

### Description

Emaco GP is a fast-setting, nonsag cement-based repair mortar for small repairs on vertical, horizontal, and overhead surfaces.

### Yield

0.45 ft<sup>3</sup>/50 lb bag  
(0.013 m<sup>3</sup>/22.7 kg bag)  
0.54 ft<sup>3</sup>/60 lb pail  
(0.015 m<sup>3</sup>/27.2 kg pail)

Yields are approximate, depending on job site conditions.

### Packaging

12 lb (5.4 kg) cans  
50 lb (22.7 kg) polyethylene-lined bags  
60 lb (27.2 kg) metal pails

### Color

Dark gray

### Shelf Life

1 year when properly stored

### Storage

Transport and store in original containers protected from moisture and dampness in a cool, clean, dry area between 45 and 90° F (7 and 32° C). Do not stack bags more than 2 pallets high to avoid compression set.

### Features

- Fast setting
- Long-lasting repairs
- Resistant to wind-driven rain and below-grade hydrostatic pressure
- Withstands freeze/thaw cycles and temperature extremes
- One component
- Can be mixed with Acryl 60®

### Benefits

- Can be painted or coated over faster than normal concrete
- Extends life of the structure
- Provides long-lasting waterproof repairs
- Suitable for all climates
- Easy to mix; enhances quality control
- Increases high-performance properties

### Where to Use

#### APPLICATION

- Deteriorated or uneven cast-in-place or precast, and steel-reinforced concrete
- Filling and leveling honeycombs
- Form tie-wire holes, small spalls, surface irregularities, and other minor surface defects
- Immersion service
- Bridges
- Tunnels
- Basements

#### LOCATION

- Vertical and overhead
- Nontraffic-bearing horizontal surfaces
- Interior or exterior
- Above or below grade

#### SUBSTRATE

- Concrete
- Masonry

### How to Apply

#### Surface Preparation

1. Area to be repaired must be clean, structurally sound, and free of all loose, dirty, oily, and scaly material or any material that may affect proper bonding.
2. Repair area should have sawcut straight edges at a minimum depth of 1/4" (6 mm).
3. Clean all reinforcing steel to a white-metal finish.



## Technical Data

### Composition

Emaco GP is a proprietary mix composed of cement, graded silica, calcium sulfate, fillers, and additives.

### Test Data

Emaco GP modified with Acryl 60® diluted with water in a 1 to 3 ratio at 3.75 qts (3.5 L) per 50 lb (22.7 kg) bag.

PROPERTY	RESULTS	TEST METHODS
<b>Initial set</b> , min	10 – 15	ASTM C 807, modified
<b>Final set</b> , min	20 – 30	ASTM C 807, modified
<b>Density</b> , lb/ft <sup>3</sup> (g/cm <sup>3</sup> )		ASTM C 138
Wet	128 – 133 (2.05 – 2.12)	
Cured	125 – 131 (2.00 – 2.10)	Lab Method
<b>Compressive strength</b> , psi (MPa)		ASTM C 109
1 day	2,700 (18.9)	
7 days	4,000 (28)	
28 days	4,800 (34)	
<b>Flexural strength</b> , psi (MPa)		ASTM C 348
7 days	680 (4.7)	
28 days	990 (6.9)	
<b>Tensile strength</b> , psi (MPa)		ASTM C 190
1 day	210 (14.7)	
7 days	580 (4.06)	
28 days	830 (5.81)	
<b>Modulus of elasticity</b> , psi (MPa)		ASTM C 469
28 days	2.18 x 10 <sup>6</sup> (1.5 x 10 <sup>5</sup> )	
<b>Freeze/thaw resistance</b> , % weight loss at 300 cycles	4.5	ASTM C 666, Method A
<b>Scaling resistance</b> , rating after 50 cycles	1	ASTM C 672
<b>Water-vapor transmission</b> , perms	18.6	ASTM E 96
<b>Coefficient of thermal expansion</b> , linear, in/in/° F	2.77 x 10 <sup>-6</sup>	ASTM C 531
<b>Surface burning characteristics</b>		ASTM E 84
Smoke	5	
Flame spread	0	
Rating	Class 1	

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

### Mixing

- Product can be mixed with water only, or with a water and Acryl 60® mixture to enhance its properties. Prepare a mixture of 1 part Acryl 60® to 3 parts water. To improve bonding, Acryl 60® may be mixed 1 to 1 with water.
- Elevated material and mixing water temperatures will shorten open time. Precondition Emaco GP to 70° F ±5° (21° C ±3°) before mixing.
- Mix only enough material that can be placed within 10 – 15 minutes.

- Add 3 quarts (2.8 L) of water and Acryl 60® 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.
- Mix for 2 – 3 minutes. Do not overmix. Add up to 3/4 quart (0.7 L) of water and Acryl 60® mixture, only if needed for workability. Do not exceed 3.75 quarts (3.5 L) of liquid per 50 lb (22.7 kg) bag or 4.5 quarts (4.23 L) per 60 lb (27 kg) pail.

- For applications exceeding the above recommendations, extend Emaco GP with up to 15 lbs (6.8 kg) of washed, graded, surface saturated-dry (SSD) aggregate per 50 lb (22.7 kg) bag. When extended, up to 3 50 lb (22.7 kg) bags of Emaco GP can be used at once.

## Application

1. Prewet the substrate to a saturated surface-dry (SSD) condition. Some substrates may require extended and even overnight soaking. Remove any ponding water from the surface before placing the scrub coat.
2. As a scrub coat, apply the fresh mortar by brush to the properly prepared, prewetted substrate, vigorously scrubbing it into the exposed surface. Do not allow scrub coat to dry prior to placement of the trowel mix. If the scrub coat dries out before the wet mortar can be placed, it must be removed as if it were laitance.
3. Immediately trowel apply fresh mortar to the wet brush coat using firm trowel pressure. Completely fill all voids around steel reinforcement.
4. Maximum single lift recommendation is 1" (25 mm) on vertical surfaces and 1/2" (13 mm) overhead. Minimum placement depth is 1/8" (3 mm).
5. As Emaco GP hardens, score material between layers to improve adhesion. After initial set, apply second layer, building out the patch above the final profile required. Shave back the patch, working from the center towards the perimeter to achieve the final profile before the patch fully hardens.
6. Use a wet sponge float for final shaping once the surface cannot be marred. Finishing with a straight edge may be required.

## Curing

In normal conditions, keep patch moist by water mist or fog spray until final set. Refer to ACI 308 Practice for Curing Concrete. In hot, dry, windy conditions longer periods of moist curing may be necessary, or use an ASTM C 309 compliant curing compound.

## Clean Up

Clean tools and equipment immediately with water. Cured material must be removed by mechanical means only.

## For Best Performance

- Do not apply to unsound, cracked, or microfractured concrete or to concrete surfaces that are not clean and free of all contaminants.
- Do not apply to frozen or frost-covered substrates or when surface and air temperatures are below 40° F (4° C) or expected to fall below 40° F (4° C) within 24 hours after application.
- Use with proper ventilation.
- Emaco GP is not intended for continuous contact with acid or sulfate-containing water. Very soft water will have an adverse affect on performance.
- Over-mixing can reduce density, strength, and durability.
- Do not apply over dynamic cracks, control joints, or expansion joints.
- This product is not designed for large placements. Consult Technical Service for recommendations.  
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 BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

## Health and Safety

EMACO GP

### WARNING!

Emaco GP contains alumina cement; silica, crystalline quartz; portland cement; limestone; gypsum.

### Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains small amount of free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

### Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

### First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

### Proposition 65

This product contains material listed by the state of California as known to cause cancer, birth defects, or other reproductive harm.

### VOC Content

0 lbs/gal or 0 g/L, less water and exempt solvents.

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

Distributed by:  
**BEST MATERIALS LLC**  
Phoenix AZ  
Ph: 800-474-7570, 602-272-8128  
Fax: 602-272-8014  
Email: [sales@bestmaterials.com](mailto:sales@bestmaterials.com)  
[www.bestmaterials.com](http://www.bestmaterials.com)



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Form No. 1019079 7/07

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