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Technical Data Guide

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Maintenance of Concrete

MasterProtect® 170CR

Epoxy coating with 98% sulfuric-acid resistance

FORMERLY NOVOLAC AR170 SEVERE SERVICE COATING

PACKAGING
3 GAL (11.4 L) KIT
PART A: two 1 gal (3.8 L) pails (pigmented)
PART B: 1 gal (3.8 L) pail (clear)

15 GAL (56.8 L) KIT
PART A: two 5 gal (18.9 L) pails
PART B: 5 gal (18.9 L) pail

COLOR
Gray

YIELD
80 ft^2 per gal (2 m^2/L) at 20 mils

STORAGE
Store and transport in unopened containers in a cool, clean, dry area. Keep from freezing.

SHELF LIFE
2 years when properly stored

VOC CONTENT
0 g/L less water and exempt solvents

DESCRIPTION
MasterProtect 170CR is a high-build, 100% solids epoxy coating. It provides resistance to harsh chemicals, including 98% sulfuric acid, and can be used as a topcoat over epoxy and polyurethane coatings.

PRODUCT HIGHLIGHTS
- Hard wearing-surface for durable, low-maintenance flooring.
- Chemical resistant for excellent resistance to sulfuric acid and a wide range of industrial chemicals.
- 100% solids system for solvent free and nearly odor-free application.
- Liquid applied for seamless protection of concrete.
- Usable with aggregate broadcast for a slip-resistant floor finish.

APPLICATIONS
- Horizontal and vertical
- Chemical-resistant industrial flooring
- Primary containment of water and wastewater
- Secondary containment of many chemicals
- Floors, gutters, and troughs
- Manholes, wet wells, and lift stations
- Walls
- Wastewater treatment plants
- Pulp and paper mills
- Metal-treatment plants
- Battery storage areas
- Production areas
- Food-processing plants
- Waste areas

HOW TO APPLY

SURFACE PREPARATION
1. Surface must be clean, structurally sound, and fully cured 28 days.
2. Mechanically profile the surface of both old and new concrete by shotblasting to ICRI CSP 4, then remove dust by vacuuming.
3. Prime with MasterEmaco P 130 or MasterEmaco P 160.

PRIMING

HORIZONTAL APPLICATIONS
1. Prime the prepared substrate with MasterEmaco P 130. Apply MasterEmaco P 130 at a coverage rate of 150–300 ft^2/gallon (3.6–7.4 m^2/L). Refer to the MasterEmaco P 130 data sheet for more details or call BASF Technical Service.
2. Allow MasterEmaco P 130 to become tack free (approximately 3–4 hours) before applying MasterProtect 170CR.

VERTICAL APPLICATIONS
Prime the prepared substrate with MasterEmaco P 160. Apply MasterEmaco P 160at a coverage rate of 300–400 ft^2/gallon (7.3–9.8 m/L). Refer to the MasterEmaco P 160data sheet for more details or call BASF Technical Service.

Technical Data

Composition

MasterProtect 170CR is a 100% solids Novolac Epoxy

Typical Properties

PROPERTY	VALUE
Tack free time, hrs, at 75° F (24° C)	4–6
Initial cure, hrs, at 75° F (24° C)	24
Light traffic, hrs, at 75° F (24° C)	16
Full chemical resistance, days, at 75° F (24° C)	7
Mix ratio, by volume	2 to 1
Application temperature range, ° F (° C)	50–120 (10–49)

Test Data*

PROPERTY	RESULTS	TEST METHOD
Mixed viscosity, cps, at 75° F (24° C)	4,000	ASTM D 2393
Pot life, min, at 75° F (24° C)	30–45	ASTM D 2471
Bond strength, psi (MPa), 14 day moist cure	2,640 (18.2) 100% concrete failure	ASTM C 882
Compressive strength, psi (MPa)	14,300 (99)	ASTM D 695
Tensile strength, psi (MPa)	5,700 (39)	ASTM D 638
Tensile elongation, %, cured 7 days at 75° F (24° C)	3–4	ASTM D 638
Hardness, Shore D	80–82	ASTM D 2240
Abrasion resistance, L/mil coating	40	ASTM D 968

*7 day cure at 70° F (21° C) and 50% relative humidity
All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

Chemical Resistance*

Based on 7-day immersion test at 70° F (21° C)

CHEMICAL	RESULTS
Hydrochloric acid, 50%	Regular contact
Hydrofluoric acid, 50%	Regular contact
Nitric acid, 25%	Occasional contact
Sulfuric acid, 10%	Regular contact
Sulfuric acid, 25%	Regular contact
Sulfuric acid, 50%	Regular contact
Sulfuric acid, 98%	Regular contact
Phosphoric acid, 50%	Regular contact
Acetic acid ,10%	Regular contact
Sodium hydroxide, 50%	Regular contact
Ammonia, 10%	Regular contact
Bleach concentrate	Regular contact
Bleach, 5%	Regular contact
Urea (saturated)	Regular contact
Sugar (saturated)	Regular contact
Sodium chloride (saturated)	Regular contact
Methanol	Regular contact
Butanol	Regular contact
Acetone	Occasional contact
Mineral spirits	Regular contact
Xylene	Regular contact
Lubrication oil	Regular contact
Gasoline	Regular contact
Skydrol	Regular contact

*7 day cure at 70° F (21° C) and 50% relative humidity

MIXING

1. Precondition all components to 70° F (21° C) for 24 hours before using.
2. Thoroughly stir each separate component (epoxy resin Part A and the hardener Part B) before mixing the 2 components together.
3. The mix ratio by volume is 2:1 (A:B). Combine 1 part B with 2 parts A in a clean, suitably sized container. Scrape the sides of the containers to remove as much material as possible to ensure accurate mixing ratio.
4. Mix the components together using a slow-speed (400–600 rpm) drill with Jiffy mixer for at least 3 minutes until uniform in color with no streaks of color in the mixture.

APPLICATION

AS A COATING FOR CONCRETE SUBSTRATES

1. Apply the mixed product to the clean, primed surface by roller or brush. Use the shortest nap roller suitable for the prepared substrate profile.
2. Backroll the coating to ensure good wetting of the substrate, uniform thickness of the coating, and removal of any roller marks.
3. Apply two 20-mil coats at the rate of 80 ft^2/ gal (2 m^2/L) per coat.
4. To make the coating slip resistant, broadcast clean, dry sand into the first coat while it is wet. Apply sand to the point of saturation (approximately 80 lbs/100 ft^2 [3.9 kg/m^2]). When coating is dry, sweep excess sand and apply the second coat of MasterProtect 170CR.
5. Recoating must be done within 24 hours at 70° F (21° C). After 24 hours, mechanically abrade the entire surface of the coating and clean with acetone or xylene. Allow MasterProtect 170CR to dry and reapply the coating within 1 hour.

AS A TOPCOAT FOR EPOXY OR POLYURETHANE FLOOR AND WALL COATINGS

1. When applying MasterProtect 170CR over an existing coating, first conduct a test application.
2. Lightly sand the surface with medium sandpaper or a 60–80 mesh 3M screen back. Vacuum up all dust and solvent wipe floor with acetone. Allow to dry.
3. Apply the MasterProtect 170CR within 1 hour and according to application instructions.

AS A TROWEL-DOWN TOPPING

1. After mixing, slowly add 2–3 parts clean, dry sand by volume to 1 part mixed MasterProtect 170CR epoxy by volume.
2. Trowel or screed the sand-modified MasterProtect 170CR to desired thickness (minimum ¼" or 6 mm).

CURING

Tack free: approximately 4–6 hours
Traffic ready: 24 hours
Fully cured: 7 days at 75° F (24° C) and 50% relative humidity

CLEAN UP

- Clean equipment immediately after use with xylene.
- Clean hands and skin immediately with soap and water, industrial hand cleaner, or denatured alcohol.
- Cured material can be removed by mechanical means only.

FOR BEST PERFORMANCE

- Minimum ambient, surface, and material temperature should be 50° F (10° C) and rising at time of application.
- Acceptable service temperatures vary depending on type and frequency of chemical exposure. Contact Technical Service regarding your unique project considerations.
- 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 master-builders-solutions.basf.us 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 are 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 basfbscst@basf.com or calling 1(800)433-9517. Use only as directed.
For medical emergencies only, call ChemTrec® 1(800)424-9300.

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