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Technical Data Guide



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Maintenance of
Concrete

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MasterProtect® 100CR

Sprayable chemical-resistant epoxy coating

FORMERLY SEWER GUARD® HBS 100 EPOXY LINER

PACKAGING

4 gal (15 L) kits

COLOR

Gray

YIELD

16 ft²/gal (0.4 m²/L) at 100 mils (WFT)

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

1.5 g/L less water and exempt solvents when components are mixed and applied per Manufacturer's instructions

DESCRIPTION

MasterProtect 100CR is a 100% solids, sprayable, high-build chemical-resistant epoxy coating. It is used to provide resistance to hydrogen sulfide attack in the water and sewage-treatment industries. MasterProtect 100CR eliminates the need for prefabricated or cast-in-place manhole liners.

PRODUCT HIGHLIGHTS

- High-build material, sprayable up to 80 mils thick
- Epoxy chemistry for excellent resistance to hydrogen sulfide and many industrial chemicals; high bond strength
- Moisture insensitive, cures well in damp environments
- Low odor, suitable for application in confined spaces
- 100% solids, meets all federal and state VOC regulations

APPLICATIONS

- Vertical and overhead surfaces
- Nontraffic-bearing horizontal surfaces
- Interior and exterior below grade
- Applications requiring resistance to hydrogen sulfide
- Rehabilitating manholes
- Lining large diameter pipes
- Lift stations and pumping stations

SUBSTRATES

- Concrete
- Masonry

HOW TO APPLY

SURFACE PREPARATION

CURED CONCRETE

1. Surface must be clean, structurally sound, and fully cured 28 days.
2. Remove any loose or unsound brick or concrete.
3. Surface must be entirely free of oil, grease, paint, detergent, rust, laitance, or other surface contaminants. Surfaces can be damp but must be free of standing water.
4. Abrade the surface by abrasive blasting or other mechanical scarification techniques to profile of ICRI CSP 4. Water blasting is not recommended.
5. For full surface restoration ½–4" (13–102 mm) deep, use MasterEmaco S 488CI. Trowel or spray MasterEmaco S 488CI onto prepared surface and finish with a wood or plastic float.
6. Allow the MasterEmaco S 488CI to cure a minimum of 4 hours at 70 °F (21 °C) before applying MasterProtect 100CR. If the MasterEmaco S 488CI cures for more than 12 hours, scarify surface to remove all laitance and prime the MasterEmaco S 488CI with MasterEmaco P 130 before applying a coat of MasterProtect 100CR.

A brand of
MECC GROUP

Technical Data**Composition**

MasterProtect 100CR is a 100% solids cyclo-aliphatic amine-cured epoxy coating.

Typical Properties

PROPERTY	VALUE
Pot life , approx min, 4 gallons mixed, at 75 °F (24 °C)	20
Mixing ratio , by volume (Part A to B)	1 to 1
Tack-free time , hrs, at 75 °F (22 °C)	3–5
Final cure , days	7

Test Data

PROPERTY	RESULTS	TEST METHOD
Mixed viscosity , cps, #6 spindle, 50 rpm	9,000–11,000	Brookfield
Adhesion to dry or damp concrete , psi (MPa)	350 (2.4); minimum substrate failure	ASTM D 4541
Adhesion to MasterEmaco S 488CI , psi (MPa)	resulted in substrate failure	ASTM D 4541
Tensile strength , psi (MPa)	3,000 (20.7)	ASTM D 638
Compressive strength , psi (MPa)	8,500 (58.6)	ASTM D 695
Hardness , Shore D	78	ASTM D 2240
Tensile elongation , %	3	ASTM D 638
Compressive modulus , psi (MPa)	5×10^5 (3,400)	ASTM D 695
Flexural strength , psi (MPa)	4,300 (29.6)	ASTM C 580
Flexural modulus , psi (MPa)	3.5×10^5 (2,400)	ASTM C 580
Weight change , after 1 year		
Sulfuric acid concentration	%	
pH 1	0.7	
pH 2	0.3	
pH 3	0.3	

All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

Chemical Resistance

Specimens cured 7 days at 75 °F (24 °C); 1 month immersion time

CHEMICAL	RESULTS
Bleach	Resistant*
Detergent	Resistant
Gasoline	Resistant
Sodium chloride (20% solution)	Resistant
Sodium hydroxide (20% solution)	Resistant
Sulfuric acid (5% solution)	Resistant
Sulfuric acid (10% solution)	Resistant

*Defined as no severe color change or deterioration of the samples.

MIXING

1. Precondition all components to 70 °F (21 °C) for 24 hours before using.
2. If using a conventional airless sprayer, mix each component separately, then pour equal volumes of Part A and Part B into a clean pail. Scrape sides of containers to ensure correct mixing ratios.
3. Do not mix more material than is sprayable within the pot life of the mixed material. (approximately 20 minutes at 70 °F)
4. Mix Part A and B together thoroughly for about 3 minutes using a slow-speed mechanical mixer to obtain a uniform color.

PRIMING

Prime surface with MasterEmaco P 130. Apply MasterProtect 100CR after the primer has become tack free (Approximately 3–5 hours at 70 °F [21 °C]). Recoat with MasterProtect 100CR no later than 24 hours after priming with MasterEmaco P 130.

APPLICATION**SPRAY APPLICATION**

1. Spray apply with a Graco® HydraMax™ 350 (4,000 psi) airless sprayer or equivalent. Use a high-pressure spray hose with an I.D. of 3/8" and a Graco® Flex Plus gun with a heavy-duty RAC tip (0.025–0.031).
2. For moderate chemical conditions, apply MasterProtect 100CR at 30 mils (0.76 mm) at approximately 50 ft²/gallon (1.3 m²/L).
3. Harsh chemical environments require thicker applications at 80–125 mils (2.0–3.2 mm). Two coats may be required to achieve a void-free film on very porous surfaces.
4. Do not use this product if the air, substrate, or material temperature is below 45 °F (7 °C) or expected to fall below 45 °F (7 °C) within 12 hours of application.

ROLLER APPLICATION

Use a 1/4" (6 mm) nap synthetic roller. Only mix enough material that can be applied within 20 minutes. Be aware that spraying is the preferred method of application.

RECOATING MASTERPROTECT 100CR

Recoat within 24 hours at 70 °F (21 °C). After 24 hours, mechanically abrade the entire surface of the coating and clean with acetone or MEK. Allow MasterProtect 100CR to dry and reapply coating within 1 hour.

CLEAN UP

Purge the airless system with xylene before material has time to set. Cured material must be removed mechanically.

FOR BEST PERFORMANCE

- Do not use this product if the air, substrate, or material temperature is below 45 °F (7 °C) or expected to fall below 45 °F (7 °C) within 12 hours.
- Temperature variations affect nonsag properties of this product. Higher temperatures may cause the product to sag; lower temperatures will decrease workability of product by causing it to thicken.
- Do not thin; solvents will prevent proper curing.
- 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 version.
- 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 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.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.

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