Protective & Marine Coatings

COR-COTE® E.N. 7000

HIGH BUILD EPOXY NOVOLAC COATING

PART A B67-30
PART B B67V30
SERIES HARDENER

Revised: December 6, 2018

PRODUCT INFORMATION

TRM.77

PRODUCT DESCRIPTION

COR-COTE E.N. 7000 is a 100% solids, two component, high build, epoxy novolac coating designed to protect substrates against severe chemical attack. Low viscosity and excellent adhesion characteristics ensure a tight bond to properly prepared concrete and steel surfaces.

- High build
- Chemical resistant
- Abrasion resistant
- Corrosion resistant
- Easy to apply

PRODUCT CHARACTERISTICS

Finish: Gloss

Color: Haze Gray, Tile Red

Volume Solids: 100%, calculated, mixed

VOC (calculated): <100 g/L; 0.83 lb/gal, mixed

Mix Ratio: 2:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**10.0** (250)	**14.0** (350)
Dry mils (microns)	**10.0** (250)	**14.0** (350)
~Coverage sq ft/gal (m^2/L)	**115** (2.8)	**160** (3.9)
Theoretical coverage sq ft/gal (m^2/L) @ 1 mil / 25 microns dft	**1600** (39.2)	

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Vertical surfaces may require 3-4 coats to achieve the desired dry film thickness.

Drying Schedule @ 14.0 mils wet (350 microns):

@ 77°F/25°C
50% RH

To touch: 6-8 hours
To recoat:
minimum: 8 hours
maximum: 6 days
To cure: 7 days

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Pot Life: 30 minutes
Sweat-in-time: None required

Shelf Life: Part A - 36 months, unopened
Part B - 12 months, unopened
Store indoors at 40°F (4.5°C) to 100°F (38°C).

Flash Point: >200°F (93°C), PMCC, mixed
Reducer: Not recommended
Clean Up: Reducer #54

RECOMMENDED USES

- Protection of concrete and steel surfaces from severe chemical attack. Used on containment structures to protect steel and concrete floors and walls from concentrated acids.
- Secondary containment
- Valves
- Equipment bases
- Spillways
- Lab and processing areas (floors and walls)
- Nuclear Power Plants
- DOE Nuclear Fuel Facilities
- Nuclear fabrication shops
- DOE Nuclear Weapons Facilities
- This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities*.

* Nuclear qualifications are NRC license specific to the facility.

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS-17 Wheel	70 mgs lost
Adhesion	ASTM D1002 (steel), ASTM D4541 (concrete)	Steel: 1,200 psi; Concrete: 350 psi (100% concrete failure)
Flammability	ASTM D635	Self-extinguishing over concrete
Gloss	60° Gloss Meter @ 73°F (23°C), 50% RH	90 millage pts
Hardness, Shore D	ASTM D2240	70
Impact Resistance, Direct	MIL-D-3134J, inch pound greater than 160	Passes
Impact Resistance, Reverse	MIL-D-3134J, inch pound greater than 110	Passes
Permeability	ASTM E96, Procedure E	0.015 perm-inch
Radiation Tolerance*	ASTM D4082 / ANSI 5.12	Pass
Resistance to Elevated Temperatures	MIL-D-3134J	No slip or flow at required temperature of 158°F (70°C)

*System tested (Report No. IM54.1157-02-01):
Cor-Cote HCR @ 7.0 mils (175 microns) dft
Cor-Cote E.N. 7000 @ 16.0 mils (400 microns) dft

Epoxy coatings may darken or yellow following application and curing.

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Concrete:			
1 ct.	Corobond 100 Epoxy Primer/Sealer Apply primer to achieve uniform hiding, appearance, and complete wetting of the concrete surface. Coating will be partially absorbed into the concrete. Roll out any puddles.	4.0-6.0	(100-150)
1-2 cts.	Kem Cati-Coat HS Epoxy Filler/Sealer, as required to fill voids and bugholes to provide a continuous substrate.	10.0-20.0	(250-500)
1 ct.	Cor-Cote E.N. 7000 High Build Epoxy Novolac	10.0-14.0	(250-350)

Vertical surfaces may require 3-4 coats of Cor-Cote EN 7000 to achieve the desired dry film thickness.

* May be applied at higher film thicknesses per coat when used as a floor coating.

Steel:			
1 ct.	Macropoxy 240 (if required)	3.5-5.0	(88-125)
1 ct.	Cor-Cote E.N. 7000 High Build Epoxy Novolac	10.0-14.0	(250-350)

Vertical surfaces may require 3-4 coats of Cor-Cote EN 7000 to achieve the desired dry film thickness.

* May be applied at higher film thicknesses per coat when used as a floor coating.

The systems listed above are representative of the product's use, other systems may be appropriate.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel: SSPC-SP6/NACE 3, 2 mil (50 micron) profile

Concrete & Masonry: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 2-3

Surface Preparation Standards

Condition of Surface		ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature: 55°F (13°C) minimum, 100°F (38°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

2:1 mix: Part A - 2 gallons (7.56L) in a 3 gallon (11.3L) pail
Part A - 5 gallons (18.9L)
Part B - 4 gallons (15.1L) in one box
Part B - 5 gallons (18.9L)

Weight: 10.5 ± 0.2 lb/gal ; 1.3 Kg/L, mixed

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DISCLAIMER

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APPLICATION BULLETIN

TRM.77

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel
Minimum surface preparation is commercial blast cleaning per SSPC-SP6/NACE 3. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Remove all weld spatter and round all sharp edges. Prime any bare steel within 8 hours or before flash rusting occurs.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 2-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.

Follow the standard methods listed below when applicable:
ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Surface Preparation Standards

	Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
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Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:	55°F (13°C) minimum, 100°F (38°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Clean up: .....Reducer #54

Airless Spray
Pump.....74:1 minimum
Hose.....3/8" ID
Tip .....023"
Filter .....60 mesh
Reduction.....Not recommended

Brush
Brush.....Natural Bristle
Reduction.....Not recommended

Roller
Cover .....3/8" woven with solvent resistant core
Reduction.....Not recommended

If specific application equipment is not listed above, equivalent equipment may be substituted.

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Mix individual components only after all surfaces are completely prepared and ready to be coated. Thoroughly agitate each component using low speed mechanical agitation, i.e., Jiffy Blade model ES. Then combine 2 parts by volume of Part A with 1 part by volume of Part B. Using mechanical agitation, thoroughly mix material for 3 minutes at 250 rpm. Only mix full units. Be sure to mix material from the bottom and sides of the containers.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**10.0** (250)	**14.0** (350)
Dry mils (microns)	**10.0** (250)	**14.0** (350)
~Coverage sq ft/gal (m^2/L)	**115** (2.8)	**160** (3.9)
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NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Vertical surfaces may require 3-4 coats to achieve the desired dry film thickness.

Drying Schedule @ 14.0 mils wet (350 microns):

@ 77°F/25°C
50% RH

To touch:	6-8 hours
To recoat:	
minimum:	8 hours
maximum:	6 days
To cure:	7 days

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life:	30 minutes
Sweat-in-time:	None required

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #54. Clean tools immediately after use with Reducer #54. Follow manufacturer's safety recommendations when using any solvent.

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PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

No reduction of material is recommended as it can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #54.

Refer to Product Information sheet for additional performance characteristics and properties.

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