Protective & Marine Coatings

COR-COTE® HCR
NOVOLAC EPOXY

PART A	B62-420	SERIES
PART B	B62V420	HCR/FF HARDENER

Revised: February 23, 2022

PRODUCT INFORMATION

TRM.18

PRODUCT DESCRIPTION

COR-COTE HCR NOVOLAC EPOXY is a 100% solids, high chemical resistant, self leveling hybrid novolac epoxy technology that resists aggressive acids, alkalies, and solvents. Its easy to use, rapid setting formulation may reduce costly downtime.

- Moisture tolerant
- Low viscosity easily wets out aggregate and reinforcing

PRODUCT CHARACTERISTICS

Finish:	Semi-gloss
Color:	Haze Gray, Tile Red, and Clear
Volume Solids:	100%, calculated, mixed
VOC (calculated):	<150 g/L; 1.25 lb/gal, mixed
Mix Ratio:	4:1

Recommended Spreading Rate per coat*:

*Varies with system and application. For use as laminating resin or as thin film primer only. See recommended systems. Not to be used as a stand alone coating.

Drying Schedule @ 20.0 mils wet (500 microns):

	@ 50°F/10°C	@ 73°F/23°C 50% RH	@ 90°F/32°C
To touch:	12 hours	6 hours	4 hours
To recoat:			
minimum:	12 hours	8 hours	6 hours
maximum:	36 hours	24 hours*	18 hours
To cure:	7 days	7 days	6 days

*Can be topcoated up to 30 days after application with either Phenicon HS or Steel-Seam FT910.

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

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

Pot Life:	35 minutes	15 minutes	10 minutes
Sweat-in-Time:		None required	

Shelf Life:	36 months Store indoors at 40°F (4.5°C) to 100°F (38°C)
Viscosity (mixed):	750 cps
Reducer:	Not recommended
Clean Up:	Xylene, R2K4

RECOMMENDED USES

Cor-Cote HCR Novolac Epoxy is used as a binder resin with select aggregate in self-leveling, mortar, and mortar laminate applications.

Protects concrete and steel surfaces in immersion and atmospheric exposure. Ideally suited for lining, containment and flooring applications in various facilities including:

- Automotive
- Electronics
- Metal & mining
- Power
- Water & wastewater
- Nuclear Power Plants
- Nuclear fabrication shops
- Chemical processing
- Food & beverage
- Pharmaceutical
- Pulp & paper
- Petrochemical
- DOE Nuclear Fuel Facilities
- DOE Nuclear Weapons Facilities
- Acceptable for use in USDA inspected 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.

Suitable for use in the Mining & Minerals Industry.

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance (coating)	ASTM D4060	1000 g 1000 cycles CS-17: 70 mg loss
Adhesion	ASTM D4541	Concrete - 350 psi; Steel - 1200 psi
Coefficient of Linear Thermal Expansion	ASTM C531 (in/in/°F)	Self-leveling - 14 x 10^{-6}; Mortar - 13 x 10^{-6}; Mortar Laminate - 14 x 10^{-6}
Compressive Strength	ASTM C579	Self-leveling - 12,000 psi; Mortar - 10,000 psi; Mortar Laminate - 10,800 psi
Critical Radiant Flux*	NFPA 253	1.08 W/cm² @ 22 mils (550 microns); .95 W/cm² @ 65 mils (1625 microns)
Durometer Hardness (coating)	ASTM D2240	Shore D - 80
Flexural Strength	ASTM C580	Self-leveling - 4,000 psi; Mortar - 4,200 psi; Mortar Laminate - 8,300 psi
Fuel Contribution*	NFPA 259	6645 btu/lb
Radiation Tolerance*	ASTM D4082 / ANSI 5.12	Pass at 65 mils (1,625 microns)
Surface Burning*	ASTM E84/NFPA 255	Flame Spread Index 30; Smoke Development Index 113 (at 22 mils / 550 microns)
Tensile Strength	ASTM C307	Self-leveling - 6,000 psi; Mortar - 2,000 psi; Mortar Laminate - 5,000 psi

*Substrate: Concrete

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Concrete or Steel (lining, containment, flooring):			
Mortar Laminate			
1 ct.	*For Steel:* Dura-Plate UHS Primer	4.0-8.0	(100-200)
	For Concrete: Corobond 100 Epoxy Primer/Sealer	4.0-6.0	(100-150)
1 ct.	Cor-Cote HCR Epoxy (Clear) with 19-20 lbs Type M Aggregate per 1.25 gallons (4.7L) yields 60-65 sq. ft. (1.5-1.6 m^2/L)	60.0-65.0	(1500-1625)
1 ct.	1.0 oz. glass mat with Cor-Cote HCR Epoxy (Clear) saturant (with glass mat)	20.0-30.0	(500-750)
1 ct.	Cor-Cote HCR FF Flake Filled Epoxy	15.0-20.0	(375-500)
Heavy Duty Mortar Laminate			
1 ct.	*For Steel:* Dura-Plate UHS Primer	4.0-8.0	(100-200)
	For Concrete: Corobond 100 Epoxy Primer/Sealer	4.0-6.0	(100-150)
1 ct.	Cor-Cote HCR Epoxy (Clear) with 19-20 lbs Type M Aggregate per 1.25 gallons (4.7L) yields 60-65 sq. ft. (1.5-1.6 m^2/L)	65.0	(1625)
1 ct.	10.0 oz. woven roving fiberglass mat with Cor-Cote HCR Epoxy (Clear) saturant (with woven roving)	30.0-45.0	(750-1125)
1 ct.	Cor-Cote HCR Epoxy (Clear) with 19-20 lbs Type M Aggregate per 1.25 gallons (4.7L) yields 60-65 sq. ft. (1.5-1.6 m^2/L)	65.0	(1625)
Self-leveling Mortar (horizontal only)			
1 ct.	Corobond 100 Epoxy Primer/Sealer	4.0-6.0	(100-150)
1 ct.	Cor-Cote HCR Epoxy with 19 lbs. Type S Aggregate per 1.25 gallons (4.7L) yields 50-56 sq. ft. (1.2-1.4 m^2/L)	60.0-70.0	(1500-1750)
1 ct.	Cor-Cote HCR FF Flake Filled Epoxy	15.0-20.0	(375-500)
Mortar			
1 ct.	Corobond 100 Epoxy Primer/Sealer	4.0-6.0	(100-150)
1 ct.	Cor-Cote HCR Epoxy with 19-20 lbs Type M Aggregate per 1.25 gallons (4.7L) @ 3/16" dft yields 40-44 sq. ft. (0.9-1.0 m^2/L)		
1 ct.	Cor-Cote HCR Epoxy	15.0-20.0	(375-500)
1 ct.	Cor-Cote HCR FF Flake Filled Epoxy	15.0-20.0	(375-500)
Concrete			
1 Ct.	Corobond 100 primer @	2.0-4.0	(50-100)
1 Ct.	Cor-Cote HCR @	15.0-20.0	(375-500)
1 Ct.	Cor-Cote HCR FF @	15.0-20.0	(375-500)

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

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

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:
- Atmospheric: SSPC-SP6/NACE3, 2 mil (50 micron) profile
- Immersion: SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) profile

Concrete & Masonry:
- Atmospheric: SSPC-SP13/NACE 6, or ICRI No. 310.2R CSP 3-5
- Immersion: SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI No. 310.2R CSP 3-5

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:	50°F (10°C) minimum, 90°F (32°C) maximum (air, surface, 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:
- Part A: 1 gallon (3.78L) and 4 gallons (15.1L)
- Part B: 1 quart (0.94L) and 1 gallon (3.78L)

SAFETY PRECAUTIONS

Refer to the SDS 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.

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APPLICATION BULLETIN

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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 (immersion service)
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). Remove all weld spatter and round all sharp edges. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel (atmospheric service)
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns).Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 3-5. 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.

Concrete, Immersion Service:
For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2R, CSP 3-5.

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	-

APPLICATION CONDITIONS

Temperature:	50°F (10°C) minimum, 90°F (32°C) maximum (air, surface, 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.

Reducer .....Not recommended

Cleanup .....Xylene, R2K4

Airless Spray:
Pump.....30:1
Gun .....Standard airless
Fluid Hose.....1/4" I.D.
Tip Orifice.....015" - .019"
Fluid Pressure.....2100 - 3100 psi
Filter Screen.....60 mesh

Brush:
Brush.....Natural bristle for applications in small areas

Roller:
Cover .....3/8" nap for coatings
Ribbed roller.....For mortar laminate applications

Trowel:
Notched trowel.....For self-leveling applications
Flat trowel .....For mortar applications

Squeegee:
Notched squeegee.....For self-leveling applications
Flat squeegee .....For coating applications

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

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APPLICATION PROCEDURES

Consult your Sherwin-Williams Representative for detailed installation instructions.

Surface preparation must be completed as indicated.

Mixing Instructions:
Premix individual components separately, using a low-speed drill and Jiffy Blade model ES mixer. Make certain no pigment remains on the bottom or sides of the can. Combine one part by volume of Part B to four parts by volume of Part A. Mix with low speed drill and Jiffy Blade model ES mixer for three minutes and until uniform.

For coatings applications:
Combine parts A and B as instructed above. To insure that no unmixed materials remain on the sides and bottom of the cans after mixing, visually observe the container by pouring the material into a separate container. Marbeled or streaky appearance is an indication of improper mixing. Apply via brush, roller or spray to the film thickness and spreading rate indicated below. Vertical surfaces may require 3-4 coats to achieve the desired dry film thickness.

Recommended Spreading Rate per coat as a coating:*
*Varies with system and application. See recommended systems. Not to be used as a stand alone coating.

For self-leveling applications:
Combine Parts A and B as instructed above. Slowly add Type S aggregate at 19 to 22 pounds per 1.25 gallons (4.7L) of mixed resin in a mortar mixer. Blend materials until no lumps remain and the aggregate is uniformly mixed with the resin. Apply via notched trowel and/or squeegee to desired thickness. Apply topcoats as indicated, following application procedures of the products listed in recommended systems

For mortar applications:
Combine Parts A and B as instructed above. Slowly add Type M aggregate at 19-20 pounds per gallon to the mixed resin in a mortar mixer. Blend materials until no lumps remain and the aggregate is uniformly mixed with the resin. Apply via screed and/or hand trowel to desired thickness. Apply topcoats as indicated, following application procedures of the products listed in recommended systems

For mortar laminate applications:
Combine Parts A and B as instructed above. Slowly add Type M aggregate at 19-20 pounds per 1.25 gallons (4.7L) to the mixed resin in a mortar mixer. Blend materials until no lumps remain and the aggregate is uniformly mixed with the resin. Apply via hand trowel to desired thickness. Apply topcoats as indicated, following application procedures of the products listed in recommended systems.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Xylene, R2K4. Clean tools immediately after use with Xylene, R2K4. Follow manufacturer's safety recommendations when using any solvent.

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APPLICATION GUIDELINES

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

Recommended Spreading Rate per coat*:

*Varies with system and application. For use as laminating resin or as thin film primer only. See recommended systems. Not to be used as a stand alone coating.

Drying Schedule @ 20.0 mils wet (500 microns):

	@ 50°F/10°C	@ 73°F/23°C *50% RH*	@ 90°F/32°C
To touch:	12 hours	6 hours	4 hours
To recoat:			
minimum:	12 hours	8 hours	6 hours
maximum:	36 hours	24 hours*	18 hours
To cure:	7 days	7 days	6 days

*Can be topcoated up to 30 days after application with either Phenicon HS or Steel-Seam FT910.

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

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

Pot Life:	35 minutes	15 minutes	10 minutes
Sweat-in-Time:		None required	

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

PERFORMANCE TIPS

For concrete, always perform Calcium Chloride test as per ASTM F1869. Do not proceed with MVE >3 lbs.

For steel, stripe coat all chine, welds, bolted connections, and sharp angles to prevent early failure in these areas.

Pot life of this material is moderately short. Working time can be extended by mixing small batches and by getting material out of mixing containers and on to the working surface in desired film thickness as quickly as possible.

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.

For Immersion Service: (if required) Holiday test in accordance with ASTM D5162 for steel, or ASTM D4787 for concrete.

Do not apply material beyond recommended pot life.

Do not mix previously catalyzed material with new.

Consult your Sherwin-Williams representative for specific application and performance recommendations.

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

SAFETY PRECAUTIONS

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