



Protective & Marine Coatings

COR-COTE® HCR FF FLAKE FILLED NOVOLAC EPOXY

PART A
PART B

B62-425
B62V420

SERIES
HCR/FF HARDENER

Revised: May 4, 2021

PRODUCT INFORMATION

TRM.19

PRODUCT DESCRIPTION

COR-COTE HCR FF FLAKE FILLED NOVOLAC EPOXY is a 100% solids, high chemical resistant hybrid novolac epoxy coating and lining that resists aggressive acids, alkalies, and solvents. Overlapping glass flakes reduce permeability, providing excellent performance in immersion service.

- Low permeation rate
- Moisture tolerant
- Glass flake addition enhances edge protection

PRODUCT CHARACTERISTICS

Finish:	Semi-gloss
Color:	Haze Gray, Tile Red
Volume Solids:	100%, calculated, mixed
VOC (calculated):	<100 g/L; .83 lb/gal, mixed
Mix Ratio:	4:1

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	15.0 (375)	20.0 (500)
Dry mils (microns)	15.0 (375)	20.0 (500)
~Coverage sq ft/gal (m ² /L)	80 (2.0)	100 (2.45)
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.

Drying Schedule @ 15.0 mils wet (375 microns):

	@ 50°F/10°C	@ 73°F/23°C 50% RH	@ 90°F/32°C
To touch:	12 hours	6 hours	3 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

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):	10,000 - 15,000 cps
Reducer:	Not recommended
Clean Up:	Xylene, R2K4

RECOMMENDED USES

Cor-Cote HCR FF Flake Filled Novolac Epoxy is used as a coating/lining and as a topcoat for self-leveling, mortar and mortar laminate applications.

Protects concrete and steel surfaces in immersion and atmospheric exposure in tank linings, secondary containment, and process flooring applications in various facilities including:

- Automotive
- Electronics
- Metal & mining
- Power
- Water & wastewater
- Acceptable for use in USDA inspected facilities
- Suitable for use in the Mining & Minerals Industry
- Chemical processing
- Food & beverage
- Pharmaceutical
- Pulp & paper
- Petrochemical

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060	1000 g 1000 cycles CS-17; 85 mg loss
Adhesion (Concrete)	ASTM D4541	350 psi, 100% concrete failure
Durometer Hardness	ASTM D2240	Shore D - 90
Flammability	ASTM D635	Self-extinguishing over concrete
Water Vapor Transmission	ASTM E96	0.0016 perm in



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RECOMMENDED SYSTEMS

	Dry Film Thickness / ct.	
	Mils	(Microns)
Steel, with hold primer (coating, lining):		
Medium Film Lining		
1 ct. Macropoxy 240	1.0-1.5	(25-40)
(as required for blast hold primer)		
1 ct. Steel-Seam FT910 as required for filling pits and transitioning sharp edges, weld seams, etc.		
2 cts. Cor-Cote HCR FF Flake Filled Epoxy	15.0 -20.0	(375-500)
Concrete (containment, flooring, with flexible base coat):		
Flexible Laminate		
1 ct. Corobond 100 Epoxy Primer/Sealer	4.0-6.0	(100-150)
1 ct. Steel-Seam FT910 as required for filling voids and bugholes on concrete		
1 ct. General Polymers 3555	20.0-30.0	(500-750)
1 ct. Cor-Cote HCR (clear) with 1 oz glass mat (with glass mat)	20.0-30.0	(500-750)
2 cts. Cor-Cote HCR FF Flake Filled Epoxy	15.0-20.0	(375-500)
Steel or Concrete (lining, containment, flooring):		
Medium Film Lining		
1 ct. For Steel: Dura-Plate UHS Primer	4.0-8.0	(100-200)
For Concrete: Corobond 100 Epoxy	4.0-6.0	(100-150)
Primer/Sealer		
1 ct. Steel-Seam FT910 as required for filling pits and transitioning sharp edges, weld seams, etc. on steel, for filling voids and bugholes on concrete		
2 cts. Cor-Cote HCR FF Flake Filled Epoxy	15.0-20.0	(375-500)
Mortar Laminate		
1 ct. For Steel: Dura-Plate UHS Primer	4.0-8.0	(100-200)
For Concrete: Corobond 100 Epoxy	4.0-8.0	(100-200)
Primer/Sealer		
1 ct. Steel-Seam FT910 as required for filling pits and transitioning sharp edges, weld seams, etc. on steel for filling voids and bugholes on concrete		
1 ct. Cor-Cote HCR (Clear) with 25 lbs Type M Aggregate per 1.25 gallons (4.7L)	60.0-65.0	(1500-1625)
yields 60-65 sq. ft. (1.5-1.6 m ² /L)		
1 ct. 1.0 oz. glass mat with Cor-Cote HCR (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	4.0-8.0	(100-200)
Primer/Sealer		
1 ct. Cor-Cote HCR Epoxy (Clear) with 25 lbs Type M Aggregate per 1.25 gallons (4.7L)	60.0-65.0	(1500-1625)
yields 60-65 sq. ft. (1.5-1.6 m ² /L)		
1 ct. 10.0 oz. woven roving fiberglass mat with Cor-Cote HCR (Clear) saturant (with woven roving)	30.0-40.0	(750-1125)
1 ct. Cor-Cote HCR Epoxy (Clear) with 25 lbs Type M Aggregate per 1.25 gallon (4.7L)	60.0-65.0	(1500-1625)
yields 60-65 sq. ft. (1.5-1.6 m ² /L)		

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/NACE 3, 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	C St 2	C St 2	SP 2	-
Pitted & Rusted	C St 2	C St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	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.

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.

Reduction Not recommended

Cleanup Xylene, R2K4

Airless Spray:

Pump 45:1
Gun Filter free airless
Fluid Hose 3/8" I.D.
Tip Orifice019" - .023"
Fluid Pressure 2100 - 3100 psi

Brush:

Brush Natural bristle for applications in small areas

Roller:

Cover 3/8" nap

Squeegee:

Flat squeegee For horizontal applications followed by back roll with 3/8" nap roller

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

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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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions:

For coating applications, premix individual components separately, using a low-speed drill and Jiffy Blade model ES mixer. Make certain no pigment or glass flake 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. 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. Marbled or streaky appearance is an indication of improper mixing.

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	15.0 (375)	20.0 (500)
Dry mils (microns)	15.0 (375)	20.0 (500)
~Coverage sq ft/gal (m ² /L)	80 (2.0)	100 (2.45)
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To touch:	12 hours	6 hours	3 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

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.

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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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 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.

Cor-Cote HCR FF may discolor over time and is not intended for use as a decorative coating.

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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