COR-COTE® HCR NOVOLAC EPOXY

Product Description

COR-COTE HCR NOVOLAC EPOXY is a 100% solids, high chemical resistant, self leveling hybrid novolac epoxy technology that resists aggressive acids, alkaliés, 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):
- @ 73°F/23°C
- 50% RH
- To touch: 6 hours
- To recoat:
  - minimum: 8 hours
  - maximum: 24 hours*
- To cure: 7 days

*Can be recoated 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: 15 minutes
Sweat-in-Time: None required

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
- DOE Nuclear Weapons Facilities
- Acceptable for use in USDA inspected facilities

* Nuclear qualifications are NRC license specific to the facility.
Suitable for use in the Mining & Minerals Industry.

Performance Characteristics

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

*Substrate: Concrete

www.sherwin-williams.com/protective

continued on back
**Recommended Systems**

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Dry Film Thickness / ct. Miles</th>
<th>Microns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete or Steel (lining, containment, flooring): Mortar Laminate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. For Steel: Dura-Plate UHS Primer</td>
<td>4.0-8.0</td>
<td>(100-200)</td>
</tr>
<tr>
<td>For Concrete: Corobond 100 Epoxy Primer/Sealer</td>
<td>4.0-6.0</td>
<td>(100-150)</td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR Epoxy (Clear) with 25 lbs Type M Aggregate per 1.25 gallons (4.7L)</td>
<td>60.0-65.0</td>
<td>(1500-1625)</td>
</tr>
<tr>
<td>yields 60-65 sq. ft. (1.5-1.6 m²/L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. 1.0 oz. woven roving fiberglass mat with Cor-Cote HCR Epoxy (Clear) saturant</td>
<td>30.0-45.0</td>
<td>(750-1125)</td>
</tr>
<tr>
<td>(with woven roving)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR FF Flake Filled Epoxy</td>
<td>15.0-20.0</td>
<td>(375-500)</td>
</tr>
<tr>
<td>Heavy Duty Mortar Laminate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. For Steel: Dura-Plate UHS Primer</td>
<td>4.0-8.0</td>
<td>(100-200)</td>
</tr>
<tr>
<td>For Concrete: Corobond 100 Epoxy Primer/Sealer</td>
<td>4.0-6.0</td>
<td>(100-150)</td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR Epoxy (Clear) with 25 lbs Type M Aggregate per 1.25 gallons (4.7L)</td>
<td>65.0</td>
<td>(165-1675)</td>
</tr>
<tr>
<td>yields 60-65 sq. ft. (1.5-1.6 m²/L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. 10.0 oz. woven roving fiberglass mat with Cor-Cote HCR Epoxy (Clear) saturant</td>
<td>30.0-45.0</td>
<td>(750-1125)</td>
</tr>
<tr>
<td>(with woven roving)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR FF Flake Filled Epoxy</td>
<td>15.0-20.0</td>
<td>(375-500)</td>
</tr>
<tr>
<td>Self-leveling Mortar (horizontal only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. Corobond 100 Epoxy Primer/Sealer</td>
<td>4.0-6.0</td>
<td>(100-150)</td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR Epoxy with 19 lbs. Type S Aggregate per 1.25 gallons (4.7L)</td>
<td>60.0-70.0</td>
<td>(1500-1750)</td>
</tr>
<tr>
<td>yields 50-56 sq. ft. (1.2-1.4 m²/L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR FF Flake Filled Epoxy</td>
<td>15.0-20.0</td>
<td>(375-500)</td>
</tr>
<tr>
<td>Mortar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct. Corobond 100 Epoxy Primer/Sealer</td>
<td>4.0-6.0</td>
<td>(100-150)</td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR Epoxy with 70 lbs Type T Aggregate per 1.25 gallons (4.7L)</td>
<td>3/16” dft yields 40-44 sq. ft</td>
<td>0.9-1.0 m²/L</td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR Epoxy</td>
<td>15.0-20.0</td>
<td>(375-500)</td>
</tr>
<tr>
<td>1 ct. Cor-Cote HCR FF Flake Filled Epoxy</td>
<td>15.0-20.0</td>
<td>(375-500)</td>
</tr>
<tr>
<td>Concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Ct. Corobond 100 primer @</td>
<td>2.0-4.0</td>
<td>(50-100)</td>
</tr>
<tr>
<td>1 Ct. Cor-Cote HCR @</td>
<td>15.0-20.0</td>
<td>(375-500)</td>
</tr>
<tr>
<td>1 Ct. Cor-Cote HCR FF @</td>
<td>15.0-20.0</td>
<td>(375-500)</td>
</tr>
</tbody>
</table>

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-SP-13/NACE 6-4.3.1 or 4.3.2, or ICRI No. 310.2R CSP 3-5

**Tinting**

Do not tint.

**Application Conditions**

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

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 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.

www.sherwin-williams.com/protective
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.

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 ...............0.015" - 0.019"
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.
**APPLICATION PROCEDURES**

For detailed installation instructions, refer to the Installation Procedures for the respective system type in the ControlTech Technical Resource Manual.

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 cans. Combine one part of Acetic A 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. Marbled 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 T aggregate at 50 to 60 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 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 30 to 35 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.

**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):**

<table>
<thead>
<tr>
<th></th>
<th>73°F/23°C 50% RH</th>
</tr>
</thead>
<tbody>
<tr>
<td>To touch:</td>
<td>6 hours</td>
</tr>
<tr>
<td>To recoat:</td>
<td>minimum: 8 hours</td>
</tr>
<tr>
<td></td>
<td>maximum: 24 hours*</td>
</tr>
<tr>
<td></td>
<td>To cure: 7 days</td>
</tr>
<tr>
<td>Pot Life:</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Sweat-in-Time:</td>
<td>None required</td>
</tr>
</tbody>
</table>

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.

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

Use of Corobond Conductive Epoxy Primer on concrete is recommended in order to provide a uniform conductive underlayment. Repair holidays found prior to application of final coat.

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.

**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.

**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.

www.sherwin-williams.com/protective

TRM.18