COR-COTE® VEN FF
FLAKE FILLED VINYL ESTER NOVOLAC

**PRODUCT DESCRIPTION**

COR-COTE VEN FF FLAKE FILLED VINYL ESTER NOVOLAC is a multi-functional epoxy novolac based vinyl ester. It provides resistance to many aromatic and aliphatic solvents, organic and mineral acids and strong oxidizers. It also provides excellent resistance to thermal degradation. Overlapping glass flakes reduce permeability, providing excellent performance in immersion service.

- Excellent chemical resistance
- Time tested and proven technology
- High temperature resistance
- Ambient cure or heated post-cure for enhanced performance
- Low permeation rate
- Enhanced edge protection

**PRODUCT CHARACTERISTICS**

**Finish:** Matte

**Color:** Haze Gray, Tile Red

**Volume Solids:** 100% Reactive

Note: Cor-Cote Flake Filled Vinyl Ester Novolac is a reactive material, however some shrinkage will occur in application due to styrene evaporation as well as normal spray losses. Resulting practical volume solids will be approximately 80%.

**VOC (ASTM D 2369 method E):** <100 g/L; 0.83 lbs/gal

**Mix Ratio:** Use CHP catalyst at the rate of 2.0 - 4.0 fluid oz. per gallon of Part A, depending on environmental conditions.

**Recommended Spreading Rate per coat:**

<table>
<thead>
<tr>
<th>Coverage sq ft/gal</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet mils (microns)</td>
<td>20.0 (500)</td>
<td>25.0 (625)</td>
</tr>
<tr>
<td>Dry mils (microns)</td>
<td>15.0 (375)</td>
<td>20.0 (500)</td>
</tr>
<tr>
<td>~Coverage sq ft/gal</td>
<td>64 (1.6)</td>
<td>80 (2.0)</td>
</tr>
<tr>
<td>Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns diff</td>
<td>1600 (39.2)</td>
<td></td>
</tr>
</tbody>
</table>

**Drying Schedule @ 20.0 mils wet (500 microns):**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 50°F/10°C</td>
<td>12 hours</td>
<td>4 days</td>
</tr>
<tr>
<td>@ 70°F/23°C</td>
<td>3 hours</td>
<td>72 hours</td>
</tr>
<tr>
<td>@ 90°F/32°C</td>
<td>2 hours</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

**To recoat:**
- minimum: 12 hours
- maximum*: 4 days

**To handle:** 16 hours

**To cure:** 48 hours

*If uncertain, test by rubbing surface with styrene. If surface does not become tacky, surface must be lightly blasted or sanded prior to recoating.

**Performance Characteristics**

**Test Name** | **Test Method** | **Results**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion Resistance</td>
<td>ASTM D4060</td>
<td>1000 g 1000 cycles CS-17: 75 mg loss</td>
</tr>
<tr>
<td>Adhesion</td>
<td>ASTM D4541</td>
<td>Concrete - 350 psi, Steel - 2000 psi</td>
</tr>
<tr>
<td>Atlas Cell, DI Water</td>
<td>NACE TM0174</td>
<td>Pass, 130°F (54°C)</td>
</tr>
<tr>
<td>Durometer Hardness</td>
<td>ASTM D2240</td>
<td>Shore D - 80</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>ASTM D790</td>
<td>5,000 psi</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D638</td>
<td>3,000 psi</td>
</tr>
<tr>
<td>Water Vapor Transmission</td>
<td>ASTM E96</td>
<td>0.0011 perm in.</td>
</tr>
</tbody>
</table>

**Recommended Uses**

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

Protects concrete and steel 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
- Chemical processing
- Food & beverage
- Pharmaceutical
- Pulp & paper
- Petrochemical

**Product Information**

TRM.47

**Revised May 21, 2018**

www.sherwin-williams.com/protective
**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**

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>Swedish Std.</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</td>
<td>Sa 3</td>
<td>Sa 3</td>
<td>SP 5</td>
<td>1</td>
</tr>
<tr>
<td>Near White Metal</td>
<td>Sa 2.5</td>
<td>Sa 2.5</td>
<td>SP 10</td>
<td>2</td>
</tr>
<tr>
<td>Commercial Blast</td>
<td>Sa 2</td>
<td>Sa 2</td>
<td>SP 6</td>
<td>3</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>Sa 1</td>
<td>SP 7</td>
<td>4</td>
</tr>
<tr>
<td>Hand Tool Cleaning</td>
<td>St 2</td>
<td>St 2</td>
<td>SP 2</td>
<td>-</td>
</tr>
<tr>
<td>Power Tool Cleaning</td>
<td>St 3</td>
<td>St 3</td>
<td>SP 3</td>
<td>-</td>
</tr>
<tr>
<td>Rusted</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pitted &amp; Rusted</td>
<td>St 2</td>
<td>St 2</td>
<td>SP 2</td>
<td>-</td>
</tr>
<tr>
<td>Pitted &amp; Rusted</td>
<td>St 3</td>
<td>St 3</td>
<td>SP 3</td>
<td>-</td>
</tr>
</tbody>
</table>

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
  - 85% maximum

**Relative humidity:**

Refer to product Application Bulletin for detailed application information.

**Ordering Information**

- **Packaging:**
  - Part A: 1 gallon (3.78L) and 5 gallons (18.9L)
  - Part B: 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.
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. A primer is required. If surface deterioration presents an unacceptably rough surface, prime with Corobond Vinyl Ester Primer. Poly-Glass Polyester Putty is recommended to patch and resurface damaged concrete. Fill all cracks, voids and bugholes with Poly-Glass Polyester Putty.

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
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 MEK, R6K10

Catalyst Injection Spray:
Pump Catalyst injection (external mixing)
Pump Ratio 30:1 with catalyst pump
Gun Polycraft or equivalent
Fluid Hose 3/8” - 1/2” I.D.
Tip Orifice 0.036” - 0.045”
Fan Width 40 degrees
Fluid Pressure 2000 - 3000 psi
Filter Screen Filters must be removed

Brush
Brush Natural bristle for applications in small areas

Roller
Cover 3/8” nap with solvent resistant core

Squeegee:
Flat squeegee For horizontal applications followed by back roll with roller

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

Surface preparation must be completed as indicated.
For detailed installation instructions, refer to the Installation Procedures for the respective system type in the ControlTech Technical Resource Manual.

Mixing Instructions: Premix Part A component 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. Use CHP Cumene Hydrogen Peroxide catalyst at the rate of 2.0 - 4.0 fluid oz. per gallon of Part A, depending on environmental conditions. Mix with low-speed drill and Jiffy Blade model ES mixer for three minutes and until uniform.

For topcoat only: Add 970-C-949 Wax Solution at the rate of 3 - 4 oz per gallon of Part A to obtain a completely tack free surface. Add wax solution before adding catalyst. If wax solution is cloudy, it will clear with gentle warming. DO NOT USE FLAME TO HEAT THE WAX SOLUTION.

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

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

Drying Schedule @ 20.0 mils wet (500 microns):

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<tr>
<th>@ 50°F/10°C</th>
<th>@ 73°F/23°C</th>
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</tr>
</thead>
<tbody>
<tr>
<td>RH</td>
<td></td>
<td></td>
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To recoat:
- Minimum: 12 hours
- Maximum*: 4 days

To handle:
- 16 hours

To cure:
- 48 hours

If uncertain, test by rubbing surface with styrene. If surface does not become tacky, surface must be lightly blasted or sanded prior to recoating.

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

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

Pot Life: 25-45 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 MEK, R6K10. Clean tools immediately after use with MEK, R6K10. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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