COROBOND™ VINYL ESTER PRIMER

PRODUCT DESCRIPTION

COROBOND VINYL ESTER PRIMERS are modified epoxy vinyl ester or vinyl ester novolac based products. They are designed to promote adhesion to concrete and metal substrates, and resist mechanical stresses such as impact, tensile and flexural stress.

- Abrasion resistance
- High tensile strength
- Resists thermal stress
- Improved adhesion
- Broad chemical resistance
- Impact resistance
- Superior adhesion to concrete and metal substrates

PRODUCT CHARACTERISTICS

Finish: Semi-gloss
Color: Clear, White/Opaque
Volume Solids: 100% reactive
Note: Corobond Vinyl Ester Primer 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 75%.
VOC (calculated): <250 g/L; 2.1 lb/gal, mixed
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>Test Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion</td>
<td>ASTM D4541; ASTM D1002 (modified, metal to laminate)</td>
</tr>
<tr>
<td>Barcol Hardness</td>
<td>ASTM D2583</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>ASTM D790</td>
</tr>
<tr>
<td>Heat Deflection Temperature</td>
<td>ASTM D648</td>
</tr>
<tr>
<td>Heat Resistance for FGD Systems</td>
<td>ASTM D5499, Test Method A, 350°F (177°C)</td>
</tr>
<tr>
<td>Sulfuric Acid Resistance for FGD Systems</td>
<td>ASTM D6137, 350°F (177°C)</td>
</tr>
<tr>
<td>Tensile Elongation</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D638</td>
</tr>
</tbody>
</table>

B88C12:

- Adhesion: ASTM D4541
- Barcol Hardness: ASTM D2583
- Flexural Strength: ASTM D790
- Heat Distortion Temperature: ASTM D3299
- Tensile Elongation: ASTM D638
- Tensile Strength: ASTM D638

RECOMMENDED USES

- Corobond Vinyl Ester Primer is used in immersion or atmospheric exposure as a primer for polyester and vinyl ester tank lining and secondary containment systems.
- It can also be used as part of a system to fabricate corrosion resistant flexible laminates.
- Used as part of a FGD system
- Acceptable for use in sodium hypochlorite up to 16% concentration.

PERFORMANCE CHARACTERISTICS

B88C10 & B88C11:

<table>
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<tr>
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**COROBOND™ VINYL ESTER PRIMER**

**PARTS**
- **A** B88C10 VE WHITE/OPAQUE
- **A** B88C11 VE CLEAR
- **A** B88C12 VEN CLEAR
- **B** B88R99 RED CHP - CUMENE HYDROGEN PEROXIDE (CATALYST)
- **B** B88V99 CLEAR CHP - CUMENE HYDROGEN PEROXIDE (CATALYST)

**PRODUCT INFORMATION**

<table>
<thead>
<tr>
<th><strong>RECOMMENDED SYSTEMS</strong></th>
<th><strong>Dry Film Thickness / ct.</strong></th>
<th><strong>(Mils)</strong></th>
<th><strong>(Microns)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concrete or Steel (lining):</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laminate</td>
<td>1 ct. Corobond Vinyl Ester Primer 2.0-3.0* (50-75)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-2 cts. Poly-Glass Putty as required for filling pits and transitioning sharp edges, weld seams, etc., or to fill voids and bugholes in concrete</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1 ct. Magnaplate Vinyl Ester Resin 40.0-50.0 (1000-1250) with 1-1/2 oz glass mat</td>
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<tr>
<td></td>
<td>1 ct. Magnaplate Vinyl Ester Resin with Wax Solution 15.0-20.0 (375-500)</td>
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<td></td>
</tr>
<tr>
<td><strong>Concrete or Steel (lining):</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Laminate</td>
<td>1 ct. Corobond Vinyl Ester Primer 3.5-4.5* (88-112)</td>
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</tr>
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<td></td>
<td>1-2 cts. Poly-Glass Putty as required for filling pits and transitioning sharp edges, weld seams, etc., or to fill voids and bugholes in concrete</td>
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<tr>
<td></td>
<td>1 ct. Polyglass Polyester Resin with 40.0-50.0 (1000-1250) 1 1/2 oz glass mat</td>
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<tr>
<td></td>
<td>1 ct. Polyglass Polyester Resin with Wax Solution 15.0-20.0 (375-500)</td>
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<tr>
<td><strong>Concrete or Steel (coating, lining, containment):</strong></td>
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<tr>
<td>Medium Film Lining</td>
<td>1 ct. Corobond Vinyl Ester Primer 2.0-3.0* (50-75)</td>
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<tr>
<td></td>
<td>1-2 cts. Poly-Glass Putty as required for filling pits and transitioning sharp edges, weld seams, etc., or to fill voids and bugholes in concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ct. Mangalux 304 Vinyl Ester 14.0-16.0 (350-400)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ct. Mangalux 304 Vinyl Ester with Wax Solution 14.0-16.0 (350-400)</td>
<td></td>
<td></td>
</tr>
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<td><strong>Medium Film Lining</strong></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>1 ct. Cor-Cote VEN FF Flake Filled Vinyl Ester</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ct. Cor-Cote VEN FF with Wax Solution 15.0-20.0 (375-500)</td>
<td></td>
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</tr>
</tbody>
</table>

*Corobond Vinyl Ester Primer is applied at 2.0-3.0 mils (50-75 microns) dft on steel and 3.5-4.5 mils (88-112 microns) dft on concrete.

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.

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**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. 310.2, CSP 3-6*
  - Immersion: SSPC-SP13/NACE 6-4.3.1 or 4.3.2

*Refer to System Selection Guide

**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 5 gallons (18.9L)
  - Part B: 1 gallon (3.78L) CHP

**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.

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COROBOND™ VINYL ESTER PRIMER

PART A

B88C10 VE
B88C11 VE
B88C12 VEN

PART B

B88R99 RED CHP - CUMENE HYDROGEN PEROXIDE (CATALYST)
B88V99 CLEAR CHP - CUMENE HYDROGEN PEROXIDE (CATALYST)

WHITE/OPAQUE
CLEAR

Protective & Marine Coatings

TRM.44
Revised: September 12, 2013
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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. 310.2, CSP 3-6. 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. If surface deterioration presents an unacceptably rough surface, prime with Corobond Vinyl Ester Primer. Patch and resurface with Poly-Glass Putty. Fill all cracks, voids and bugholes with Poly-Glass Putty (over Corobond Vinyl Ester Primer).

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. 310.2 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. 310.2, CSP 3-6.

*Refer to System Selection Guide

<table>
<thead>
<tr>
<th>Surface Preparation Standards</th>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>Swedish Std. SIS05900</th>
<th>SSPC 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 Rusted</td>
<td>C St 2</td>
<td>C St 2</td>
<td>SP 2</td>
<td>-</td>
</tr>
<tr>
<td>Hand Tool Cleaning Pitted &amp; Rusted</td>
<td>D St 3</td>
<td>D St 3</td>
<td>SP 3</td>
<td>-</td>
</tr>
<tr>
<td>Power Tool Cleaning Rusted</td>
<td>C St 2</td>
<td>C St 2</td>
<td>SP 2</td>
<td>-</td>
</tr>
<tr>
<td>Power Tool Cleaning Pitted &amp; Rusted</td>
<td>D St 3</td>
<td>D St 3</td>
<td>SP 3</td>
<td>-</td>
</tr>
</tbody>
</table>

Application Bulletin

Application Conditions

Temperature: 50°F (10°C) minimum, 90°F (32°C) maximum
At least 5°F (2.8°C) above dew point
Relative humidity: 85% maximum

Application Equipment

Reduction ......................Not recommended
Cleanup .......................MEK, R6K10
Airless Spray
Pump Ratio .....................45:1
Fluid Hose .................3/8" ID
Tip Orifice ....................015" - 0.17"
Fan Width at 12" ............12"-14"
Fluid Pressure ..............2500-3000 psi
Filter Screen ..................60 mesh
Conventional Spray
Gun ..................Binks 95
Tip and needle ............68
Air Cap ..................302 or 306
Atomization Pressure ......75 - 85 psi
Fluid Pressure ............35 - 40 psi
Brush ........................Natural bristle
Roller ........................Cover .....................3/8" nap with solvent resistant core
COROBOND™ VINYL ESTER PRIMER

APPLICATION BULLETIN

TRM.44

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Use CHP catalyst at the rate of 2.0 - 4.0 fluid oz. per gallon (3.78L) of Part A, depending on environmental conditions. Mix with low-speed drill and Jiffy Blade model ES mixer for three minutes and until uniform.

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

<table>
<thead>
<tr>
<th>Recommended Spreading Rate per coat*</th>
<th>Concrete</th>
<th>Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min.</td>
<td>Max.</td>
<td>Min.</td>
</tr>
<tr>
<td>Wet mils (microns)</td>
<td>5.0</td>
<td>125</td>
</tr>
<tr>
<td>Dry mils (microns)</td>
<td>3.5</td>
<td>88</td>
</tr>
<tr>
<td>Coverage sq ft/gal (m²/L)</td>
<td>250</td>
<td>6.1</td>
</tr>
<tr>
<td>Theoretical coverage sq ft/ gal (m²/L) @ 1 mil/25 micron dft</td>
<td>1600</td>
<td>(39.2)</td>
</tr>
</tbody>
</table>

*Varies with system and application. See recommended systems. Not to be used as a stand alone coating.

Drying Schedule @ 3.0 mils wet (75 microns):

@ 50°F/10°C | @ 73°F/23°C | @ 90°F/32°C

To touch: | 16 hours | 6 hours | 3 hours |
To recoat: minimum | 12 hours | 3 hours | 2 hours |
maximum* | 7 days | 96 hours | 72 hours |
To cure: | 48 hours | 16 hours | 16 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: 15-25 minutes
Sweat-in-time: Not required

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

PERFORMANCE TIPS

Read and understand the individual Systems Installation Procedures for thin film linings, medium film linings, laminate linings, self-leveling, mortars, mortar laminates and heavy duty mortar laminates.

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.

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.

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. In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with MEK, R6K10.

Store in a temperature controlled environment, 50°F (10°C) to 80°F (26°C), and out of direct sunlight. Keep resins, catalysts, and solvents separated from each other and away from sources of ignition.

Allow primer to become tacky prior to application of subsequent coating or lining system. If planning to install subsequent system after the primer has fully cured, lightly sprinkle 40-60 mesh silica sand into the primer prior to its curing. Adhere to recoat drying schedule indicated in the Application Procedures.

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

When used as a putty, add 0.5 to 1.0 lbs of CAB-O-SIL TS-720 treated fumed silica with one gallon of uncatalyzed Part A resin. 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. In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with MEK, R6K10.

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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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.

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