



# Protective & Marine Coatings

PART A B88C10  
 PART A B88C11  
 PART A B88C12  
 PART B B88R99  
 PART B B88V99

# COROBOND™ VINYL ESTER PRIMER

VE WHITE/OPAQUE  
 VE CLEAR  
 VEN CLEAR  
 RED CHP - CUMENE HYDROGEN PEROXIDE (CATALYST)  
 CLEAR CHP - CUMENE HYDROGEN PEROXIDE (CATALYST)

Revised: September 12, 2013

## PRODUCT INFORMATION

TRM.44

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

### 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 a 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\*:

	Concrete		Steel	
	Min.	Max.	Min.	Max.
Wet mils (microns)	5.0	125	6.0	150
Dry mils (microns)	3.5	88	4.5	112
~Coverage sq ft/gal (m <sup>2</sup> /L)	250	6.1	325	8.0
Theoretical coverage sq ft/gal (m <sup>2</sup> /L) @ 1 mil/25 micron dft	1600 (39.2)			

\*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 50% RH	@ 90°F/32°C
<b>To touch:</b>	16 hours	6 hours	3 hours
<b>To recoat:</b>			
<b>minimum:</b>	12 hours	3 hours	2 hours
<b>maximum*:</b>	7 days	96 hours	72 hours
<b>To cure:</b>	48 hours	24 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

**Shelf Life:** 3 months, unopened  
 Store indoors at 73°F (23°C).

**Viscosity:** 2,100 cps  
**Reducer:** Not recommended  
**Clean Up:** MEK, R6K10

### 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:

Test Name	Test Method	Results
Adhesion	ASTM D4541; ASTM D1002 (modified, metal to laminate)	350 psi, 100% concrete failure (ASTM D4541); 1,430 psi (ASTM D1002)
Barcol Hardness	ASTM D2583	30
Flexural Strength	ASTM D790	17,000 psi
Heat Deflection Temperature	ASTM D648	175°F (79°C)
Heat Resistance for FGD Systems	ASTM D5499, Test Method A, 350°F (177°C)	Passes
Sulfuric Acid Resistance for FGD Systems	ASTM D6137, 350°F (177°C)	Passes
Tensile Elongation	ASTM D638	11%
Tensile Strength	ASTM D638	10,500 psi

#### B88C12:

Test Name	Test Method	Results
Adhesion	ASTM D4541	350 psi, 100% concrete failure
Barcol Hardness	ASTM D2583	35
Flexural Strength	ASTM D790	19,000 psi
Heat Distortion Temperature	ASTM D3299	295°F-305°F (146°C-152°C)
Tensile Elongation	ASTM D638	3%
Tensile Strength	ASTM D638	10,500 psi



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<b>RECOMMENDED SYSTEMS</b>		<b>Dry Film Thickness / ct.</b>	
		<b>Mils</b>	<b>(Microns)</b>
<b>Concrete or Steel (lining): Laminate</b>			
1 ct.	Corobond Vinyl Ester Primer	2.0-3.0*	(50-75)
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		
1 ct.	Magnaplate Vinyl Ester Resin with 1-1/2 oz glass mat	40.0-50.0	(1000-1250)
1 ct.	Magnaplate Vinyl Ester Resin with Wax Solution	15.0-20.0	(375-500)
<b>Concrete or Steel (lining): Laminate</b>			
1 ct.	Corobond Vinyl Ester Primer	3.5-4.5*	(88-112)
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		
1 ct.	Polyglass Polyester Resin with 1 1/2 oz glass mat	40.0-50.0	(1000-1250)
1 ct.	Polyglass Polyester Resin with Wax Solution	15.0-20.0	(375-500)
<b>Concrete or Steel (coating, lining, containment): Medium Film Lining</b>			
1 ct.	Corobond Vinyl Ester Primer	2.0-3.0*	(50-75)
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		
1 ct.	Mangalux 304 Vinyl Ester	14.0-16.0	(350-400)
1 ct.	Mangalux 304 Vinyl Ester with Wax Solution	14.0-16.0	(350-400)
<b>Medium Film Lining</b>			
1 ct.	Corobond Vinyl Ester Primer	2.0-3.0*	(50-75)
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		
1 ct.	Cor-Cote VEN FF Flake Filled Vinyl Ester	15.0-20.0	(375-500)
1 ct.	Cor-Cote VEN FF with Wax Solution	15.0-20.0	(375-500)

\* 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.

<b>SURFACE PREPARATION</b>				
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				
<b>Surface Preparation Standards</b>				
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	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	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 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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Revised: September 12, 2013

## APPLICATION BULLETIN

TRM.44

### 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.

\*Refert to System Selection Guide

#### 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 4	4
Hand Tool Cleaning	OC St 2	OC St 2	SP 3	-
Pitted & Rusted	OC St 2	OC St 2	SP 3	-
Rusted	OC St 3	OC St 3	SP 3	-
Power Tool Cleaning	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.

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

Brush.....Natural bristle

#### Roller

Cover .....3/8" nap with solvent resistant core

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



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## APPLICATION BULLETIN

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### 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:

#### Recommended Spreading Rate per coat\*:

	Concrete		Steel	
	Min.	Max.	Min.	Max.
Wet mils (microns)	5.0 125	6.0 150	3.0 75	4.0 100
Dry mils (microns)	3.5 88	4.5 112	2.0 50	3.0 75
~Coverage sq ft/gal (m <sup>2</sup> /L)	250 6.1	325 8.0	400 9.8	500 12.0
Theoretical coverage sq ft/gal (m <sup>2</sup> /L) @ 1 mil/25 micron dft	1600 (39.2)			

\*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 50% RH	@ 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	24 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.

### 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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### 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. Mix with catalyst as instructed in Mixing Instructions. Apply putty using a trowel or putty knife.

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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### WARRANTY

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