



Protective & Marine Coatings

CARFLEX® HS EPOXY

PART A C35W250
 PART A C35L250
 PART B C35V200

WHITE
 BLUE
 HARDENER

Revised: May 8, 2017

PRODUCT INFORMATION

4.80

PRODUCT DESCRIPTION

CARFLEX HS EPOXY is a 100% solids BPA free, polyamide-cured modified epoxy formulated for the lining of dry bulk rail hopper cars, storage tanks and grain elevators. It provides excellent corrosion protection, has excellent flexibility, and is impact and abrasion resistant. It has been designed as a one-coat or two-coat system.

- FDA approved for dry bulk (FDA Regulation 175.300)

PRODUCT CHARACTERISTICS

Finish:	Gloss
Color:	White and Blue
Volume Solids:	98% ± 2%, mixed
Weight Solids:	98% ± 2%, mixed
VOC (EPA Method 24):	<100 g/L; 0.83 lb/gal, mixed
Mix Ratio:	2:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	8.0 (200)	12.0 (300)
Dry mils (microns)	8.0 (200)	12.0 (300)
~Coverage sq ft/gal (m ² /L)	134 (3.3)	200 (5)

Drying Schedule @ 10.0 mils wet @ 50% RH:

	@ 77°F
To touch:	4.5 hours
To handle:	4-5 hours
To recoat:	
minimum:	4 hours
maximum:	30 days

Cure schedule: 1 hr at ambient temperature followed by 2 hours at 120°F, then allow 24 hours at ambient cure before service.

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

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

Pot Life:	30 minutes @ 77°F
Sweat-in-time:	None required

Shelf Life:	6 months, unopened Store indoors at 50°F to 100°F.
Flash Point:	>210°F, PMCC, mixed
Reducer:	None
Clean Up:	Reducer 005

RECOMMENDED USES

- Rail hopper car lining
- Dry bulk storage tanks
- Grain elevators
- Marine vessels

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	107 mg loss
Adhesion	ASTM D4541	>2500 psi
Direct Impact Resistance	ASTM D2794	28 in. lbs.
Elongation	ASTM D638, Type 4 Geometry	48%
Flexibility	ASTM D522, 180° bend, 3/8" mandrel	Passes
Tensile Strength	ASTM D638	1000 psi



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RECOMMENDED SYSTEMS

		Dry Film Thickness /ct.	
		Mils	(Microns)
Steel, atmospheric:			
2 cts.	Carflex HS Epoxy	8.0-12.0	(200-300)
or			
1 ct.	Carflex HS Epoxy	8.0-12.0	(200-300)

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.

Minimum recommended surface preparation:

Iron & Steel:

Atmospheric:	SSPC-SP6, 2 mil profile
Lining for rail hopper cars:	SSPC-SP10, 2 mil profile
Lining for marine vessels:	SSPC-SP10, 2 mil profile

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	SSPC	NACE
White Metal	Sa 3	SP 5	1
Near White Metal	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted C St 2	SP 2	-
Pitted & Rusted	D St 2	SP 2	-
Rusted	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted D St 3	SP 3	-

TINTING

Tinting not recommended.

APPLICATION CONDITIONS

Temperature: 50°F minimum, 110°F maximum
At least 5°F above dew point
(air, surface and material)

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

TEST APPLICATION ONLY INFORMATION

Packaging:
Part A: 5 gallons in a 5-gallon pail
Part B: 5 gallons in a 5-gallon pail

Weight: 10.8 ± 0.2 lb/gal ; mixed

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.

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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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, Atmospheric Service:

Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6/NACE 3, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel within 8 hours or before flash rusting occurs.

Iron & Steel, Lining for Rail Hopper Cars:

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 by grinding. Prime any bare steel the same day as it is cleaned.

APPLICATION CONDITIONS

Temperature: 50°F minimum, 110°F maximum
At least 5°F above dew point (air, surface and material)

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.

Reducer Not recommended

Clean Up Reducer 005

Plural Heated Spray

Heated Plural Component, recommended 120°F
Extreme Mix 68:1 Graco
Pressure..... 50 psi at 120°F
Hose..... 3/8-1/2" ID
Tip Number 417-519
Filter 60 mesh
Reduction..... none

Brush

Brush..... Nylon/Polyester or Natural Bristle
Reduction..... none

Roller

Cover 3/8" woven with solvent resistant core
Reduction..... none

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

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

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	SSPC	NACE
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Near White Metal	Sa 2.5	SP 10	2
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Hand Tool Cleaning	St 2	SP 2	-
Pitted & Rusted	St 2	SP 2	-
Rusted	St 3	SP 3	-
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Pitted & Rusted	St 3	SP 3	-



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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with power agitation. Make sure that the application equipment is operating properly with a 2 parts A to 1 part B ratio.

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

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	8.0 (200)	12.0 (300)
Dry mils (microns)	8.0 (200)	12.0 (300)
~Coverage sq ft/gal (m ² /L)	134 (3.3)	200 (5)

Drying Schedule @ 10.0 mils wet @ 50% RH:

@ 77°F

To touch:	4.5 hours
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To recoat:	
minimum:	4 hours
maximum:	30 days

Cure schedule: 1 hr at ambient temperature followed by 2 hours at 120°F, then allow 24 hours at ambient cure before service.

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

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

Pot Life:	30 minutes @ 77°F
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 Reducer 005. Clean tools immediately after use with Reducer 005.

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PERFORMANCE TIPS

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.

Spreading rates can be calculated using 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.

No reduction of material is recommended as it can affect film build, appearance, and adhesion. Use for FDA 21CFR175.300 requires no solvent remain in coating film.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer 005.

Refer to Product Information sheet for additional performance characteristics and properties.

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