Protective & Marine Coatings

Certified to NSF/ANSI 61

POLY-COTE™ 110

PART A	B65V110	ISOCYANATE
PART B	B65-110	FAST SET SERIES
PART B	B65-111	RAPID SET SERIES

Revised: March 5, 2020

PRODUCT INFORMATION

5.56

PRODUCT DESCRIPTION

POLY-COTE 110 is a two component polyurethane coating formulated to provide optimal build properties and aesthetic properties. The required coating thickness can be applied in one coat – even on seams, welds and rivets. It is a 100% solids,aromatic polyurethane formulated without solvents. Poly-Cote 110 was developed for production applications where cure speeds and excellent application characteristics are required.

- NSF/ANSI Standard 61 approved
- Meets AWWA C222
- Meets USDA requirement for incidental contact

PRODUCT CHARACTERISTICS

Color:	Off White, Blue (Fast Set only), Gray, and Black
Finish:	Gloss
Volume Solids:	100%, mixed
VOC:	No measurable VOC levels
Mix Ratio:	1:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**20.0** (500)	**>500** (12,500)
Dry mils (microns)	**20.0** (500)	**>500*** (12,500)
~Coverage sq ft/gal (m^2/L)	**3** (0.07)	**80** (1.96)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1600** (39.2)	

* 250 mils (6250 microns) maximum for NSF applications

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance. Brush and roll applications are intended for field repairs and weld seams. Utilize Poly-Cote 115FR for these applciations.

Drying Schedule @ 35.0 mils wet (875 microns):

Fast Set:	**@ 75°F/24°C**
Tack free:	90-150 seconds
To recoat (max.):	2 hours
To handle:	5-10 minutes
To cure*:	4 hours

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.
At 24 hour cure to service at 70ºF (21ºC) for NSF applications.

Pot life: 15-20 seconds (100 grams mass)

Drying Schedule @ 35.0 mils wet (875 microns):

Rapid Set:	**@ 75°F/24°C**
Tack free:	4-6 minutes
To recoat (max.):	4 hours
To handle:	20-25 minutes
To cure*:	6 hours

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.
At 24 hour cure to service at 70ºF (21ºC) for NSF applications.

Pot life: 55-65 seconds (100 grams mass)

PRODUCT CHARACTERISTICS (CONT'D)

Shelf Life:	12 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C)
Flash Point:	428°F (220°C)
Reducer:	Not recommended

RECOMMENDED USES

- Water Conveyance Piping
- Water & Wastewater Market
- Mining
- Rail
- Pulp & Paper Industry
- Transmission Poles

NOTE: For NSF Approved applications: 250 mils (6250 microns) DFT maximum with 24 hour cure to service at 70ºF (21ºC.)
Potable Water: Meets NSF Standard 61- Drinking water components. Fittings ≥ 2 in.; Pipe ≥ 8 in.; Tank ≥ 50 gallons; Valve ≥ 2 in.
*Refer to NSF website http://nsf.org for additional information

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	<100 mg loss
Adhesion	ASTM D4541	>1500 psi
	ASTM D6677	Rating - 10
Cathodic Disbondment	ASTM G95, mtd A	<12-mm radius
Chemical Resistance	ASTM D543	10% H_2SO_4 <5% 30% NaCl <5% 30% NaOH <5% Diesel Fuel <5%
Dielectric Strength	ASTM D149	>250 V/mil
Elongation	ASTM D412	>3%
Flexibility	ASTM D522, 3" mandrel	No cracking or delamination
Hardness, Durameter	ASTM D2240	>65, Shore D
Impact Resistance	ASTM G14	>75 in-lbs, minimum
Service Temperature	Dry - Continuous: -40°F (-40°C) to 200°F (93°C) Maximum Surge: 350°F (177°C) Immersion - Insulated (max): 140°F (60°C) Non-Insulated: 120°F (49°C)	
Tensile Strength	ASTM D412	>4000 psi
Water Absorption	ASTM D570	2.0%, maximum
Water Vapor Permeability	ASTM E96	0.09 in. lbs. @ 53 mils (1325 microns)

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PRODUCT INFORMATION

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RECOMMENDED SYSTEMS

PRIMERS
Steel: Self-priming
Galvanized Steel: Self-priming
Ductile Iron: Self-priming

	Dry Film Thickness / ct. Mils	(Microns)
Steel- Immersion :AWWA C222		
1 ct Poly-Cote 110	20.0	(400)
Galvanized, Immersion		
1 ct Poly-Cote 110	20.0	(400)
Ductile Iron, Immersion		
1 ct Poly-Cote 110	20.0	(400)

TOPCOATS
Approved aliphatic urethanes. Contact your Sherwin-Williams representative for more information.

ADVANTAGES

- Low permeability - improves life cycle performance and corrosion resistance.
- Chemical resistant - resistant to a broad spectrum of acidic and caustic chemicals
- Abrasion & Impact resistant - reduces the need for field touch-up caused by damage from handling, transporting, and installation; Increases life cycle due to reduced abrasion and impact from foreign materials.
- Excellent adhesion - exceeds 1,500 psi on properly prepared steel
- High film build properties - achieve specified DFT's in a single coat even are sharp edges and angles
- Easily Maintained - Repairs can be completed quickly with the use of the Poly-Cote 115FR Field Repair Kit
- Physical toughness - high physical performance strengths offering extreme durability

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.

Minimum recommended surface preparation:
Steel:
Large parts/structures (>50 ft²): SSPC-SP10/NACE No. 2, minimum 3 mil (75 micron) angular profile
Small area (<50 ft²): SSPC-SP11

Ductile Iron Pipe:
Atmospheric: NAPF 500-03-03 Power Tool Cleaning
Buried & Immersion: NAPF 500-03-04 Abrasive Blast Cleaning
Cast Ductile Iron Fittings: NAPF 500-03-05 Abrasive Blast Cleaning

Galvanized Steel:
Large parts/structures (>50 ft²): SSPC SP16, minimum 3 mil (50 micron) angular profile
Small area (<50 ft²): SSPC-SP3

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	-
Power Tool Cleaning	Rusted	C St 3	SP 3	-
	Pitted & Rusted	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:
Part A: 140°F (60°C) minimum, 160°F (71°C) maximum, Preheat Product to 110ºF
Part B: 140°F (60°C) minimum, 160°F (71°C) maximum, Preheat Product to110ºF
Hose: 140°F (60°C) minimum, 160°F (71°C) maximum
Air: 0°F (-18°C) minimum, 120°F (49°C) maximum
Surface: 40°F (4.5°C) minimum, 140°F (60°C) maximum
at least 5°F (2.8°C) above dew point

Relative humidity: 95% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging: 50 gallons (189L) in a 55-gallon (208L) size drum and 250 gallons (945L) in a 250-gallon (945L) size tote

Weight:
Part A: 9.20 ± 0.2 lb/gal ; 1.10 Kg/L
Part B: 9.70 ± 0.2 lb/gal ; 1.16 Kg/L
Mixed: 9.45 ± 0.2 lb/gal ; 1.13 Kg/L

SAFETY PRECAUTIONS

Refer to the SDS 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: March 5, 2020

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
(For Galvanizing - Contact Your Local Rep for Applicable Surface Prep Standards)
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. The substrate shall not contain soluble salt concentrations in excess of 3 ppm for chlorides, 5 ppm for nitrates, and 10 ppm for sulfates. Surface with soluble salt concentrations in excess of these values shall be cleaned until satisfactory results are obtained. Minimum surface preparation for large surfaces shall be Near White Metal Blast Cleaning per SSPC-SP10/NACE No. 2. Blast clean all surfaces using sharp, angular abrasive for optimum surface profile (3 mils or greater average, with no individual reading being less than 2.5 mils per NACE RP0287). Small surface areas (<50 sq. ft.) shall be Power Tool Cleaned To Bare metal per SSPC-SP11. Grind all surfaces utilizing mechanical scarification capable of producing the greatest surface profile and shall be performed in a perpendicular pattern to the direction of flow on the substrate. Remove all weld spatter, smooth all rough welds, and round all sharp edges by grinding prior to abrasive blasting.

Existing coating shall be feathered 1.5 in. to 3 in. when coating adjacent bare steel, such as girth welds. Prior to coating, the applicator will tape off, using duct tape, a line between feathered coating and the remaining non-blasted coating and ensure the edge of tape is on the roughened coating.

Cleaned surface shall be dry air blasted and either brushed off or vacuumed, in a manner to remove dust and debris prior to coating, and shall be coated before any rust blooming occurs. Any cleaned steel showing rust stains shall be re-prepared prior to coating.

Ductile Iron Pipe, Atmospheric Service:
Minimum surface preparation is Power Tool Clean per NAPF 500-03-03. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

Ductile Iron Pipe, Buried and Immersion Service:
Minimum surface preparation is Abrasive Blast Cleaning per NAPF 500-03-04. Ductile iron pipe external surfaces, in some cases, can be damaged by excessive abrasive blast cleaning beyond this standard. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

Ductile Iron Fittings:
Minimum surface preparation is Abrasive Blast Cleaning of Cast Ductile Iron Fittings per NAPF 500-03-05. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

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	-
Power Tool Cleaning	Rusted	C St 3	SP 3	-
	Pitted & Rusted	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:	
Part A:	140°F (60°C) minimum, 160°F (71°C) maximum, Preheat Product to 110ºF
Part B:	140°F (60°C) minimum, 160°F (71°C) maximum, Preheat Product to110ºF
Hose:	140°F (60°C) minimum, 160°F (71°C) maximum
Air:	0°F (-18°C) minimum, 120°F (49°C) maximum
Surface:	40°F (4.5°C) minimum, 140°F (60°C) maximum at least 5°F (2.8°C) above dew point
Relative humidity:	95% 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.

Reducer .....Not recommended
Clean Up .....MEK R6K10
Purge Solvent .....MEK R6K10

Recommended Spray Equipment*
Hydraulic Spray

Pump	Graco/Gusmer H-35 or HXP3 system at 1:1 ratio
Transfer Pumps	2:1 Graco T2
Pressure	2000-2500 psi at gun pressure
Hose	3/8” Resin, 3/8” Isocyanate, 300' Maximum + 10' - 1/4" Resin X 1/4" Isocyanate whip hose, direct impingement,mechanical purge gun
Tip	TBD

Conventional Spray.....Not recommended

Brush** .....Repairs and touch only**

*Application training is required and spray equipment must be approved by Sherwin-Williams Technical Service.

**For touch up and repair utilize Sherwin-William Poly-Cote 115FR.

If specific application equipment is not listed above, equivalent equipment may be substituted and must be approved by Sherwin-Williams Technical Service.

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APPLICATION BULLETIN

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Agitate components thoroughly before use. Do not thin. Do not mix part A and B together. Caution: Do not agitate at high speed or in a manner that would whip air or moisture in to the product. Both components should be heated to approximately 120°F (49°C) - 160°F (71°C) to achieve spray pattern consistency.

Plural component proportioning equipment with a direct impingement, mechanical purge gun is reuired for Poly-Cote 110, 1:1 mix ratio.

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

Recommended Spreading Rate per coat:

	Minimum		Maximum	
Wet mils (microns)	**20.0**	(500)	**>500**	(12,500)
Dry mils (microns)	**20.0**	(500)	**>500***	(12,500)
~Coverage sq ft/gal (m^2/L)	**3**	(0.07)	**80**	(1.96)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1600**	(39.2)		

** 250 mils (6250 microns) maximum for NSF applications.*

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance. Brush and roll applications are intended for field repairs and weld seams. Utilize Poly-Cote 115FR for these applciations.

Drying Schedule @ 35.0 mils wet (875 microns):

Fast Set:	**@ 75°F/24°C**
Tack free:	90-150 seconds
To recoat (max.):	2 hours
To handle:	5-10 minutes
To cure:	4 hours

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.
At 24 hour cure to service at 158ºF (70ºC) for NSF applications.

Pot life: 15-20 seconds (100 grams mass)

Drying Schedule @ 35.0 mils wet (875 microns):

Rapid Set:	**@ 75°F/24°C**
Tack free:	4-6 minutes
To recoat (max.):	4 hours
To handle:	20-25 minutes
To cure:	6 hours

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.
At 24 hour cure to service at 70ºF (21ºC) for NSF applications.

Pot life: 55-65 seconds (100 grams mass)

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

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PERFORMANCE TIPS

For immersion applications, a minimum total dry film thickness of 20 mils for steel is required. Always spark test in accordance with NACE SP0188 for steel after application. Repair holidays prior to placing substrate into service using Poly-Cote 115FR.

Use only heated, plural component equipment capable of producing 3,000 psi output at the pump and 2,200 psi minimum at the gun.

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

While spraying, use 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. All application shall be done in a manner that mitigates runs and sags and provides complete coverage on all surfaces, including difficult to spray areas like welds, seams and angles.

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, climatic conditions, and excessive film build.

Do not agitate in a manner that would whip air and moisture in to the product.

Consult you Sherwin-Williams representative for specific application and performance recommendations.

Where a hold primer is used, do not fill the profile on concrete or steel with excess primer. Topcoat epoxy primers immediately after they become tack free. "Tack free" is defined as slight to medium pressure with a gloved hand, placed on a primed surface, that when lifted shows a slight imprint or distortion to the surface, with no transfer of primer to the glove

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

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with MEK R6K10. Clean tools and equipment immediately after use (including both A and B sides of plural component spray system) with MEK R6K10.

SAFETY PRECAUTIONS

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WARRANTY

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