POLY-COTE™ 110

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:

<table>
<thead>
<tr>
<th>Wet mils (microns)</th>
<th>Minimum</th>
<th>Maximum</th>
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<tr>
<td>20.0 (500)</td>
<td>&gt;500 (12,500)</td>
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Dry mils (microns): 20.0 (500) >500* (12,500)

~Coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft

3 (0.07) 80 (1.96)

Theoretical coverage sq ft/gal (m²/L)

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 applications.

Drying Schedule @ 35.0 mils wet (875 microns):

<table>
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<tr>
<th>Fast Set:</th>
<th>@ 75°F/24°C</th>
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<tr>
<td>Tack free:</td>
<td>90-150 seconds</td>
</tr>
<tr>
<td>To recoat (max.):</td>
<td>2 hours</td>
</tr>
<tr>
<td>To handle:</td>
<td>5-10 minutes</td>
</tr>
<tr>
<td>To cure*:</td>
<td>4 hours</td>
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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 70°F (21°C) for NSF applications.

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

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

At 24 hour cure to service at 70°F (21°C) 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


*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
Cathodic Disbondment | ASTM G95, mtd A | <12-mm radius
Chemical Resistance | ASTM D543 | 10% H₂SO₄ <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)
POLY-COTE™ 110

PROTECTIVE & MARINE COATINGS

Revised: May 22, 2019

www.sherwin-williams.com/protective

5.56

NSF®

Certified to NSF/ANSI 61

Revised: May 22, 2019

PRODUCT INFORMATION

Recommended Systems

<table>
<thead>
<tr>
<th>PRIMERS</th>
</tr>
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<tbody>
<tr>
<td><strong>Steel</strong>: Self-priming</td>
</tr>
<tr>
<td><strong>Galvanized Steel</strong>: Self-priming</td>
</tr>
<tr>
<td><strong>Ductile Iron</strong>: Self-priming</td>
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<th>Surface Preparation Standards</th>
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<tr>
<td><strong>Condition of Surface</strong></td>
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<tr>
<td>White Metal</td>
</tr>
<tr>
<td>Near White Metal</td>
</tr>
<tr>
<td>Commercial Blast</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
</tr>
<tr>
<td><strong>Hand Tool Cleaning</strong></td>
</tr>
<tr>
<td><strong>Power Tool Cleaning</strong></td>
</tr>
</tbody>
</table>

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**: Large parts/structures (>50 ft²): NAPF 500-03-04, minimum 3 mil (75 micron) angular profile
- **Small area (<50 ft²)**: NAPF 500-03-03
- **Galvanized Steel**: Large parts/structures (>50 ft²): SSPC SP16, Min 3 mil (50 micron) angular profile
- **Small area (<50 ft²)**: SSPC-SP3

Surface Preparation Standards

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</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>SP 6</td>
<td>2</td>
</tr>
<tr>
<td>Commercial Blast</td>
<td>Sa 2</td>
<td>SP 7</td>
<td>3</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>SP 8</td>
<td>4</td>
</tr>
<tr>
<td>Hand Tool Cleaning Rusted &amp; Pitted</td>
<td>D St 2</td>
<td>SP 2</td>
<td>-</td>
</tr>
<tr>
<td>Power Tool Cleaning Rusted &amp; Pitted</td>
<td>D St 3</td>
<td>SP 3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Application Conditions**

- **Temperature**:
  - **Part A**: 140°F (60°C) minimum, 160°F (71°C) maximum, Preheat Product to 110°F
  - **Part B**: 140°F (60°C) minimum, 160°F (71°C) maximum, Preheat Product to 110°F
  - **Hose**: 0°F (-18°C) minimum, 120°F (49°C) maximum
  - **Surface**: 40°F (4.5°C) minimum, 140°F (60°C) maximum
- **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 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 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 Glavanizing - 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.

Cleared 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 vacuumed, in a manner to remove dust and debris prior to coating, the remaining non-blasted coating and ensure the edge of tape is on the roughened coating.

Ductile Iron Pipe
Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01. 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 Abrasive Blast Cleaning for Ductile Iron Pipe per NAPF 500-03-04. Blast clean all surfaces using sharp, angular abrasive for optimum surface profile (3 mils / 75 microns or greater, with no individual reading being less than 2.5 mils / 63 microns 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.

Recommended Spray Equipment*

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Part A</th>
<th>Part B</th>
</tr>
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<tbody>
<tr>
<td>Hydraulic Spray</td>
<td>140°F (60°C) minimum, 160°F (71°C) maximum, Preheat Product to 110°F</td>
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</tr>
<tr>
<td>Pressure</td>
<td>2000-2500 psi at gun pressure</td>
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</tr>
<tr>
<td>Transfer Pumps</td>
<td>2:1 Graco T2</td>
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</tr>
<tr>
<td>Air</td>
<td>0°F (-18°C) minimum, 120°F (49°C) maximum</td>
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<tr>
<td>Surface</td>
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<tr>
<td>Relative humidity</td>
<td>95% maximum</td>
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Recommended Spray Equipment*

| 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

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

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<tr>
<td>Brush**</td>
<td>Repairs and touch only**</td>
<td></td>
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*Application training is required and spray equipment must be approved by Sherwin-Williams Technical Service.

**For touch up and repair utilize Sherwin-Williams 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.
Mixing Instructions: Surface preparation must be completed as indicated. 

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 into 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 required for Poly-Cote 110, 1:1 mix ratio. 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. Brush and roll applications are intended for field repairs and weld seams. Utilize Poly-Cote 115FR for these applications.

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 158°F (70°C) for NSF applications.

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

**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 70°F (21°C) 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.

**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.

**APPLICATION PROCEDURES**

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 into the product.

Consult your 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.

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