HI-SOLIDS POLYURETHANE 250

ALIPHATIC POLYURETHANE

Product Information

5.30

Product Description

HI-SOLIDS POLYURETHANE 250 is a two-component, aliphatic, acrylic polyurethane resin coating. It is designed for high performance protection with outstanding exterior gloss and color retention.

- Good/excellent resistance to corrosion and weathering
- Outstanding color and gloss retention
- Chemical resistant
- Suitable for use in USDA inspected facilities
- Formerly named Hi-Solids Polyurethane CA
- Resists film attack by mildew (MR White Tint Base only, B65WWJ305)
- Applications down to 20°F (-7°C)

Finish:
Gloss and Semi-Gloss

Color:
Wide range of colors possible

Volume Solids:
63% ± 4%, may vary by color
Ultra White or sheen

Weight Solids:
74% ± 2%, may vary by color
Ultra White or sheen

VOC (EPA Method 24):
<250 g/L; 2.08 lb/gal Mixed

Mix Ratio:
4:1 by volume

Recommended Spreading Rate per coat:
Minimum Maximum
Wet mils (microns) 4.5 (112.5) 8.0 (200)
Dry mils (microns) 3.0 (75) 5.0 (125)
~Coverage sq ft/gal (m²/L) 208 (5.2) 347 (8.5)

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

Drying Schedule @ 4.5 mils (112.5 microns) wet:

@ 40°F/4.5°C 77°F/25°C 100°F/38°C 120°F/49°C 50% RH
To touch: 4 hours 2 hours 1 hour .5 hours
To handle: 16 hours 8 hours 4 hours 2 hours
To recoat: minimum: 24 hours 18 hours 14 hours 10 hours
maximum: 30 days 30 days 30 days 30 days
To cure: 14 days 10 days 8 days 7 days

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Pot Life: 8 hours 4 hours 2 hours
Sweat-in-Time: None required

Shelf Life:
Part S: 36 months
Part T: 24 months
Store indoors at 40°F (4.5°C) to 100°F (38°C).

Flash Point:
55°F

Reducer/Clean Up:
Oxsol 100, Reducer #58, or R7K111

Recommended Uses

For use over prepared substrates in industrial environments
- Heavy duty interior and exterior structural coating
- A chemical and abrasion resistant equipment and machinery finish
- A gloss and color retentive heavy duty maintenance coating for use in "high visibility" areas
- Exterior surfaces of steel tanks
- Chemical processing equipment
- Exterior metal siding and trim
- Precipitator surfaces
- Oil Field Machinery
- Marine Applications

Conforms to AWWA D102 Outside Coating Systems #5 & #6. (Gloss only)
Approved finish coat for FIRETEX M90 and M93 series systems (Gloss only)

Performance Characteristics

Substrate*: Steel
Surface Preparation*: SSPC-SP6
System Tested*

Test Name Test Method Results
Abrasion Resistance ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load 119 mg loss
Adhesion ASTM D4541 2253 psi
Corrosion Weathering ASTM D5894, 15 cycles Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Direct Impact Resistance ASTM D2794 40 in. lbs.
Dry Heat Resistance ASTM D2485 200°F (93°C)
Flexibility ASTM D522, 180° bend, 1/8" mandrel Passes
Moisture Condensation Resistance ASTM D4585, 100°F (38°C), 1000 hours No rusting, blistering, or delamination
Pencil Hardness ASTM D3363 F
Salt Fog Resistance* ASTM B117, 5,000 hours Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting

Meets the requirements of SSPC Paint No. 36, Level 3 for white and light colors. Dark colors may require a clear coat.
**Recommended Systems**

<table>
<thead>
<tr>
<th>Product</th>
<th>Dry Film Thickness / ct.</th>
<th>Mils</th>
<th>Microns</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steel: Epoxy Primer</strong></td>
<td>1 ct.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Steel: Epoxy Primer</strong></td>
<td>1 ct.</td>
<td>4.0-6.0</td>
<td>(100-150)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Steel: Zinc Rich Primer</strong></td>
<td>1 ct.</td>
<td>4.0-7.0</td>
<td>(100-175)</td>
</tr>
<tr>
<td></td>
<td>1 ct.</td>
<td>5.0-10.0</td>
<td>(125-250)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Steel: Epoxy Mastic Primer</strong></td>
<td>1 ct.</td>
<td>5.0-10.0</td>
<td>(125-250)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Aluminum:</strong></td>
<td>1 ct.</td>
<td>0.7-1.3</td>
<td>(17.5-32.5)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Concrete:</strong></td>
<td>1 ct.</td>
<td>10.0-15.0</td>
<td>(250-375)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Galvanized Metal:</strong></td>
<td>1 ct.</td>
<td>4.0-6.0</td>
<td>(100-150)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Galvanized Metal:</strong></td>
<td>1 ct.</td>
<td>2.0-4.0</td>
<td>(50-100)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>Galvanized Metal:</strong></td>
<td>1 ct.</td>
<td>4.0-6.0</td>
<td>(100-150)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
<tr>
<td><strong>NTPEP System</strong></td>
<td>1 ct.</td>
<td>4.0-7.0</td>
<td>(100-175)</td>
</tr>
<tr>
<td></td>
<td>1 ct.</td>
<td>5.0-10.0</td>
<td>(125-250)</td>
</tr>
<tr>
<td></td>
<td>1-2 cts.</td>
<td>3.0-5.0</td>
<td>(75-125)</td>
</tr>
</tbody>
</table>

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.

**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: SSPC-SP6/NACE 3, 2 mil (50 micron) profile
* Aluminum: SSPC-SP1
* Galvanizing: SSPC-SP1
* Concrete & Masonry: SSPC-SP13/NACE 6

**Surface Preparation Standards**

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>BS7079:A1</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</td>
<td>Sa 3</td>
<td>SP 6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Near White Metal</td>
<td>Sa 2.5</td>
<td>SP 10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Commercial Blast</td>
<td>Sa 2</td>
<td>SP 6</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>SP 7</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Hand Tool Cleaning</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Rusted Pitted &amp; Rusted</td>
<td>CSt 2</td>
<td>SP 9</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Power Tool Cleaning</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Rusted Pitted &amp; Rusted</td>
<td>CSt 3</td>
<td>SP 3</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**Tinting**

Tint with MAXITONER Colorants only into Part S. Extra White tints at 200% tint strength. Ultradeep tints at 150% tint strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

**Application Conditions**

Temperature: 20°F (-7°C) minimum, 120°F (49°C) maximum (air, surface, and material)

Do not apply over surface ice 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 S: 1 gallon (3.78L) and 4 gallon (15.12L) kits
- Part T: quarts and gallons

Weight: 10.7 ± 0.2 lb/gal ; 1.3 Kg/L mixed, may vary with color

**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 MERCHANDABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
**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**

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 (2-3 mils / 50-75 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

**Aluminum**

Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. Primer required.

**Galvanized Steel**

Allow to weather a minimum of six months prior to coating. Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned.

**Concrete and Masonry**

For surface preparation, refer to SSPC-SP13/NACE 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. Fill bug holes, air pockets and other voids with ArmorSeal Crack Filler. Weathered masonry and soft or porous cement board must be brush blasted or power tool cleaned to remove loosely adhering contamination and to get to a hard, firm surface. Laitance must be removed by etching with a 10% muriatic acid solution and thoroughly neutralized with water. Primer required. Brick must be allowed to weather for one year prior to surface preparation and painting.

**Application Conditions**

- Temperature: 20°F (-7°C) minimum, 120°F (49°C) maximum (air, surface, and material)
- Do not apply over surface ice
- 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.

**Reducer/Clean Up**

- Oxsol 100, Reducer #58, or R7K111

**Airless Spray**

- Pressure: 2500 - 2800 psi
- Hose: 3/8" ID
- Tip: .013" - .017"
- Filter: none
- Reduction: As needed up to 10% by volume

**Conventional Spray**

- Gun: Binks 95
- Fluid Nozzle: 63 B
- Air Nozzle: 69 PB
- Atomization Pressure: 50 - 70 psi
- Fluid Pressure: 20 - 25 psi
- Reduction: As needed up to 15% by volume

**Brush**

- Brush: Natural bristle
- Reduction: As needed up to 15% by volume

**Roller**

- Cover: 3/8" woven with phenolic core
- Reduction: As needed up to 15% by volume

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

---

**Surface Preparation Standards**

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>BS7079:A1</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</td>
<td>Sa 3</td>
<td>SP 5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Near White Metal</td>
<td>Sa 2.5</td>
<td>SP 10</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Commercial Blast</td>
<td>Sa 2</td>
<td>SP 6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>SP 4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Hand Tool Cleaning</td>
<td>Rusted</td>
<td>D Si 2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pitted &amp; Rusted</td>
<td>D Si 3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Power Tool Cleaning</td>
<td>Rusted</td>
<td>D Si 2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pitted &amp; Rusted</td>
<td>D Si 3</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>
Surface preparation must be completed as indicated.

Mixing Instructions: Mix contents of each component thoroughly with power agitation. Make certain no pigment remains on the bottom of the can. Then combine 4 parts by volume of Part S with 1 part by volume of Part T. Thoroughly agitate the mixture with power agitation.

If reducer solvent is used, add only after both components have been thoroughly mixed.

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

### Recommended Spreading Rate per coat:

<table>
<thead>
<tr>
<th>Wet mils (microns)</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 (112.5)</td>
<td>8.0 (200)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dry mils (microns)</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0 (75)</td>
<td>5.0 (125)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>~Coverage sq ft/gal (m²/L)</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>208 (5.2)</td>
<td>347 (8.5)</td>
<td></td>
</tr>
</tbody>
</table>

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

### Drying Schedule @ 4.5 mils (112.5 microns) wet:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>To touch</th>
<th>To handle</th>
<th>To recoat: minimum</th>
<th>To recoat: maximum</th>
<th>To cure</th>
<th>Pot Life</th>
<th>Sweat-in-Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>40°F/4.5°C</td>
<td>4 hours</td>
<td>16 hours</td>
<td>24 hours</td>
<td>14 days</td>
<td>14 days</td>
<td>8 hours</td>
<td>None required</td>
</tr>
<tr>
<td>50% RH</td>
<td>2 hours</td>
<td>8 hours</td>
<td>18 hours</td>
<td>14 days</td>
<td>14 days</td>
<td>4 hours</td>
<td>2 hours</td>
</tr>
<tr>
<td>77°F/25°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100°F/38°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120°F/49°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

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 Oxsol 100, Reducer #58, or R7K111. Clean tools immediately after use with Oxsol 100, Reducer #58, or R7K111. Follow manufacturer’s safety recommendations when using any solvent.

### Performance Tips

- Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.
- 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 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.
- Excessive reduction of material can affect film build, appearance, and adhesion.
- 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 Oxsol 100, Reducer #58, or R7K111.
- Mixed coating is sensitive to water. Use water traps in all air lines.
- Moisture contact can reduce pot life and affect gloss and color.
- Quik-Thane Urethane Accelerator is acceptable for use. See Quik-Thane Urethane Accelerator product data sheet for details.
- E-Z Roll Urethane Defoamer is acceptable for use. See E-Z Roll Urethane Defoamer product data sheet for details.
- Refer to Product Information sheet for additional performance characteristics and properties.

### 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.

### 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.

### 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.