SHERFLEX™ ELASTOMERIC POLYURETHANE

**Product Information**

**Product Description**

SHERFLEX ELASTOMERIC POLYURETHANE is a high solids, spray applied, aromatic polyurethane coating and lining. It can be applied at thicknesses of 30-250 mils (750-6250 microns) in multiple passes during a single application.

- Fast cure - short down time
- High build and flexible
- Crack bridging capabilities
- Seamless and waterproof
- Impact, tear, and abrasion resistant
- Chemical resistant
- Low permeability

**Product Characteristics**

- Finish: Semi-gloss
- Colors: Beige
- Volume Solids: 100%, mixed
- Mix Ratio: 3:1
- VOC (calculated): <50 g/L ; 0.42 lb/gal, mixed

<table>
<thead>
<tr>
<th>Required Spreading Rate per coat:</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet mils (microns)</td>
<td>30.0</td>
<td>250.0</td>
</tr>
<tr>
<td>Dry mils (microns)</td>
<td>30.0</td>
<td>250.0</td>
</tr>
<tr>
<td>~Coverage sq ft/gal (m²/L)</td>
<td>6 (0.72)</td>
<td>53 (6.4)</td>
</tr>
<tr>
<td>Theoretical coverage sq ft/gal</td>
<td>1604</td>
<td>(39.4)</td>
</tr>
</tbody>
</table>

**Drying Schedule @ 30.0 mils wet (750 microns):**

- @ 40°F/4.5°C: 3 hours to touch, 5 hours to dry
- @ 77°F/25°C: 45 minutes to touch, 2.5 hours to dry
- @ 120°F/49°C: 30 minutes to touch, 1 hour to dry

- 50% RH

- To recoat: 30 days
- To cure: 5 days

**Flash Point:**

- Part A: 240°F (115°C), Closed Cup Part A
- Part B: 390°F (198°C), Closed Cup Part B

**Reducer:** Not recommended

**Clean Up:** Xylene R2K4 or MEK R6K10

**Shelf Life:**

- 12 months, unopened
- Store indoors at 40°F (4.5°C) to 100°F (38°C)
- Drums must be rotated every 90 days.

**Recommended Uses**

- **Potable Water Tank Restrictions:**
  - Tanks ≥ 3,000 gallons
  - Pipes ≥ 61" (1500 mm) dnf
  - Maximum DFT: 100 mils

- Designed for use in immersion service as a tough, flexible, impact resistant, waterproof coating and lining system.

- Not recommended for use with cathodic protection systems.

- For use in areas including:
  - Wet wells
  - Grit chambers
  - Aeration basins
  - Sewer manholes
  - Cooling tower linings
  - Water & wastewater linings
  - Secondary containment
  - Potable water (Beige)

- Suitable for use in the Mining & Minerals Industry.

**Performance Characteristics**

**Substrate:** Concrete

**Surface Preparation:** SSPC-SP13/NACE6, or ICRI No. 310.2, CSP 3-5

**System Tested:**

- 1 ct. Corobond LT Epoxy Primer @ 4.0 mils (100 microns) dft
- 1 ct. Sherflex Elastomeric @ 60.0 mils (1500 microns) dft

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Test Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion Resistance</td>
<td>ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load</td>
<td>106 mg loss</td>
</tr>
<tr>
<td>Adhesion</td>
<td>ASTM D4541</td>
<td>Concrete: 350 psi (concrete failure); Steel: 1800 psi</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>ASTM D149-92a, method A</td>
<td>430 volts/mil</td>
</tr>
<tr>
<td>Direct Impact</td>
<td>ASTM D2794 on steel pipe</td>
<td>160 in./lb, no failures</td>
</tr>
<tr>
<td>Durometer Hardness</td>
<td>ASTM D2240</td>
<td>43 Shore D</td>
</tr>
<tr>
<td>Elongation</td>
<td>ASTM D638</td>
<td>45% at 25°C (77°F)</td>
</tr>
<tr>
<td>Flexibility</td>
<td>ASTM D1737</td>
<td>No effect bending 0.5 mm plate coated with 20 mils (500 microns) over mandrel of 8 mm diameter</td>
</tr>
<tr>
<td>Permeability</td>
<td>ASTM E96</td>
<td>0.189 grains/hr ft² Hg U.S. Perms</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D638</td>
<td>1988 psi at 25°C (77°F)</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>ASTM C177</td>
<td>0.000550 cal/sec/cm²°C per cm at 25°C (0.133 BTU/HR.ft.°F per ft at 77°F)</td>
</tr>
</tbody>
</table>

Meets ASTM D16, Type V

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**RECOMMENDED SYSTEMS**

<table>
<thead>
<tr>
<th>Surface</th>
<th>Dry Film Thickness / ct. Mils</th>
<th>(Microns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct Corobond Conductive Epoxy Primer</td>
<td>2.0-4.0 (50-100)</td>
<td></td>
</tr>
<tr>
<td>1 ct SherFlex Elastomeric</td>
<td>60.0-250.0* (1500-6250)</td>
<td></td>
</tr>
<tr>
<td>Concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ct Corobond LT Epoxy Primer</td>
<td>4.0-8.0 (100-200)</td>
<td></td>
</tr>
<tr>
<td>1 ct SherFlex Elastomeric</td>
<td>60.0-250.0* (1500-6250)</td>
<td></td>
</tr>
</tbody>
</table>

Other acceptable primers:
- Dura-Plate UHS Primer
- Corobond HS Primer
- Dura-Plate 235
- Corothane I-PrePrime (Smooth Concrete, air and surface temperature below 70° F)
- FasTop Primer (for new concrete)

**Steel:**
- SherFlex Elastomeric 30.0-250.0* (750-6250)
- Copoxy Shop Primer (as a hold primer) 1.0 (25)
- SherFlex Elastomeric 30.0-250.0* (750-6250)

**Steel, Potable Water (lining):**
- SherFlex Elastomeric 30.0-100.0* (750-2500)

**Concrete, Potable Water (lining):**
- Macropoxy 240 1.0-1.5 (25-40)
- SherFlex Elastomeric 30.0-100.0* (750-2500)

**Concrete, Potable Water (lining):**
- Macropoxy 240 3.0-4.0 (75-100)
- SherFlex Elastomeric 60.0-100.0* (1500-2500)

* Potable Water Applications:
  - Maximum DFT allowed is 100 mils (2500 microns)
  - SherFlex S may be applied up to 80 mils (2000 microns) dft.

If applied over SherFlex, the dft of the SherFlex S should not exceed 30 mils (750 microns).

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
  - Immersion: SSPC-SP10/NACE 2, 3.0 mil (75 micron) profile minimum
- Concrete
  - Immersion: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 3-5

**Surface Preparation Standards**

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>BS7079:01</th>
<th>Swedish Std.</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</td>
<td>Sa 2</td>
<td>Sa 2</td>
<td>Sp 5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Near White Metal</td>
<td>Sa 2.5</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>Sa 2</td>
<td>Sp 6</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>Sa 1</td>
<td>Sp 7</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Hand Tool Cleaning</td>
<td>D St 2</td>
<td>D St 2</td>
<td>D St 3</td>
<td>2</td>
<td></td>
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<tr>
<td>Rusted</td>
<td>C St 3</td>
<td>C St 3</td>
<td>C St 3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Pitted &amp; Rusted</td>
<td>D St 3</td>
<td>D St 3</td>
<td>D St 3</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**TINTING**

Do not tint.

**APPLICATION CONDITIONS**

Temperature:
- Material: 140°F (60°C) minimum, 160°F (71°C) maximum
- Air and surface: 20°F (-29°C) minimum, 120°F (49°C) maximum
- 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: 5 gal (18.9L) cans or 53 gallon (200L) drums
- Part B: 5 gal (18.9L) cans or 53 gallon (200L) drums

**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, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANDABILITY 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
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 (3 mils/75 microns or greater). Remove all weld spatter and round all sharp edges by grinding. Coat all steel before flash rusting occurs.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2, CSP 3-5. 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 Steel-Seam FT910. Primer required.

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. 310.2R 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 3-5.

Surface Preparation Standards

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>BS7079/A1</th>
<th>SSIS055900</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</td>
<td>Sa 3</td>
<td>Sa 3</td>
<td>Sa 3</td>
<td>Sa 3</td>
<td>Sa 3</td>
</tr>
<tr>
<td>Near White Metal</td>
<td>Sa 2.5</td>
<td>Sa 2.5</td>
<td>Sa 2.5</td>
<td>Sa 2.5</td>
<td>Sa 2.5</td>
</tr>
<tr>
<td>Commercial Blast</td>
<td>Sa 2</td>
<td>Sa 2</td>
<td>Sa 2</td>
<td>Sa 2</td>
<td>Sa 2</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>Sa 1</td>
<td>Sa 1</td>
<td>Sa 1</td>
<td>Sa 1</td>
</tr>
<tr>
<td>Hand Tool Cleaning</td>
<td>Rusty</td>
<td>D St 2</td>
<td>D St 2</td>
<td>D St 2</td>
<td>D St 2</td>
</tr>
<tr>
<td></td>
<td>Pitted &amp; Rusted</td>
<td>D St 2</td>
<td>D St 2</td>
<td>D St 2</td>
<td>D St 2</td>
</tr>
<tr>
<td>Power Tool Cleaning</td>
<td>Rusty</td>
<td>C St 2</td>
<td>C St 2</td>
<td>C St 2</td>
<td>C St 2</td>
</tr>
<tr>
<td></td>
<td>Pitted &amp; Rusted</td>
<td>C St 2</td>
<td>C St 2</td>
<td>C St 2</td>
<td>C St 2</td>
</tr>
</tbody>
</table>

Temperature: 140°F (60°C) minimum, 160°F (71°C) maximum
Air and surface: -20°F (-29°C) minimum, 120°F (49°C) maximum
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
Clean Up .......................Xylene R2K4, MEK R6K10
Purge Solvent .................MEK R6K10, Acetone

Recommended Spray Equipment*
Pump.........................Graco Hydra-Cat or Xtreme mix system with remote manifold (restriction required on Hardener side)
Pressure......................3000 psi working pressure
Hose.........................3/8" Resin, 1/4" Hardener, 1/4" whip hose from Mixing Manifold to Gun, 10 ft maximum 5" Static Mixing Tube with disposable plastic insert.
Tip..........................025" - 0.35"

Conventional Spray ..........Not recommended
Brush ..........................Repairs and touch-up only

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

If specific application equipment is not listed above, equivalent equipment may be substituted.
Surface preparation must be completed as indicated.

Mixing Instructions: Agitate components thoroughly with low speed power agitation before use to disperse pigment and assure homogeneity. Do not reduce (thin). Do not mix resins A and B together. CAUTION: Do not agitate in air and moisture. Both components should be heated to approximately 140°F-160°F (60°C-71°C) to achieve spray pattern consistency.

Plural component application required, 3:1 mix ratio.

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

<table>
<thead>
<tr>
<th>Recommended Spreading Rate per coat:</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet mils (microns)</td>
<td>30.0 (750)</td>
<td>250.0 (6250)</td>
</tr>
<tr>
<td>Dry mils (microns)</td>
<td>30.0 (750)</td>
<td>250.0 (6250)</td>
</tr>
<tr>
<td>~Coverage sq ft/gal (m²/L)</td>
<td>6.0 (0.72)</td>
<td>53 (6.4)</td>
</tr>
<tr>
<td>Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft</td>
<td>1604 (39.4)</td>
<td></td>
</tr>
</tbody>
</table>

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

Clean spills and spatters immediately with Xylene R2K4, or MEK R6K10. Clean tools and equipment immediately after use (including both A and B sides of plural component spray system) with Xylene R2K4, or MEK R6K10.

For immersion applications, a minimum total dry film thickness of 30 mils (750 microns) for steel and 60 mils (1500 microns) for concrete is required.

For Immersion Service: (if required) Holiday test in accordance with ASTM D5162 for steel, or ASTM D4787 for concrete.

Use only heated, plural component equipment capable of producing 4,000 psi output consistently.

In order to prevent blockage of spray equipment, clean equipment before use or before periods of extended downtime with Xylene R2K4, or MEK R6K10. Do not agitate in air and moisture.

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 air and moisture.

For concrete, refer to moisture content testing per SSPC SP-13/ NACE No. 6. Do not proceed with MVE >3lbs.

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

* Potable Water Applications:
  • Maximum DFT allowed is 100 mils (2500 microns)
  • SherFlex S may be applied up to 80 mils (2000 microns) dft.
  If applied over SherFlex, the dft of the SherFlex S should not exceed 30 mils (750 microns).

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

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