



**Industrial  
&  
Marine  
Coatings**

**4.67**

**DURA-PLATE® 235  
MULTI-PURPOSE EPOXY**

**PART A  
PART B**

**B67-235  
B67V235**

**SERIES COLORS  
HARDENER**

**PRODUCT INFORMATION**

Revised 1/06

PRODUCT DESCRIPTION	RECOMMENDED USES																																			
<p><b>Dura-Plate 235 Multi-Purpose Epoxy</b> is a modified epoxy phenalkamine, formulated specifically for immersion and atmospheric service in marine and industrial environments. Dura-Plate 235 provides exceptional performance in corrosive environment, and can be applied at temperatures as low as 0°F.</p> <ul style="list-style-type: none"> <li>• Self-priming</li> <li>• Low temperature application</li> <li>• Surface tolerant - damp surfaces</li> <li>• Provides salt water and fresh water immersion resistance</li> <li>• Cures at temperatures as low as 0°F</li> <li>• Approved as a primer under MIL-P-23236, Type IV, Class 2, Grade B</li> </ul>	<p>For use over prepared steel and masonry surfaces.</p> <ul style="list-style-type: none"> <li>• Salt water and fresh water immersion resistance</li> <li>• Ballast tanks, offshore and marine structures</li> <li>• Bilges and wet void areas</li> <li>• Above- and below- water hull areas</li> <li>• Decks and superstructures</li> <li>• Water and waste water tanks</li> <li>• Acceptable for use with cathodic protection systems.</li> <li>• Dura-Plate 235 Black meets or exceeds the performance criteria of C-200; SSPC Paint 16; and Mil-P-23236B(SH) Type I or IV Class 2</li> <li>• Suitable for use in USDA inspected facilities</li> </ul> <p><b>Note:</b> Not for immersion service when tinted.</p>																																			
PRODUCT CHARACTERISTICS	PERFORMANCE CHARACTERISTICS																																			
<p><b>Finish:</b> Semi-Gloss</p> <p><b>Color:</b> Wide range of colors available</p> <p><b>Volume Solids:</b> 68% ± 2%, mixed</p> <p><b>Weight Solids:</b> 79% ± 2%, mixed</p> <p><b>VOC (EPA Method 24):</b> Unreduced: &lt;280 g/L; 2.33 lb/gal Reduced 10%: &lt;327 g/L; 2.72 lb/gal</p> <p><b>Mix Ratio:</b> 4:1 by volume</p> <p><b>Recommended Spreading Rate per coat:</b> Wet mils: 6.0 - 12.0 Dry mils: 4.0 - 8.0 Coverage: 136 - 272 sq ft/gal approximate</p> <p><b>NOTE:</b> Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.</p> <p><b>Drying Schedule @ 6.0 mils wet @ 50% RH:</b></p> <table border="1"> <thead> <tr> <th></th> <th>@ 0°F</th> <th>@ 40°F</th> <th>@ 77°F</th> <th>@ 120°F</th> </tr> </thead> <tbody> <tr> <td>To touch:</td> <td>18 hours</td> <td>3½ hours</td> <td>2 hours</td> <td>20 mins</td> </tr> <tr> <td>To handle:</td> <td>36 hours</td> <td>12 hours</td> <td>3½ hours</td> <td>40 mins</td> </tr> <tr> <td>To recoat:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>  minimum:</td> <td>36 hours</td> <td>12 hours</td> <td>3½ hours</td> <td>40 mins</td> </tr> <tr> <td>  maximum:</td> <td>6 months</td> <td>6 months</td> <td>6 months</td> <td>6 months</td> </tr> <tr> <td>Cure to service:</td> <td>30 days</td> <td>14 days</td> <td>7 days</td> <td>3 days</td> </tr> </tbody> </table> <p><b>Pot Life:</b> 16 hours 8 hours 4 hours 1 hour</p> <p><b>Sweat-in-time:</b> 1 hour 30 mins 15 mins 5 mins</p> <p>If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity and film thickness dependent.</p> <p><b>Shelf Life:</b> 36 months, unopened Store indoors at 40°F to 100°F</p> <p><b>Flash Point:</b> 116°F PMCC, mixed</p> <p><b>Reducer/Clean Up:</b> Reducer R7K104</p>		@ 0°F	@ 40°F	@ 77°F	@ 120°F	To touch:	18 hours	3½ hours	2 hours	20 mins	To handle:	36 hours	12 hours	3½ hours	40 mins	To recoat:					minimum:	36 hours	12 hours	3½ hours	40 mins	maximum:	6 months	6 months	6 months	6 months	Cure to service:	30 days	14 days	7 days	3 days	<p><b>System Tested:</b> (unless otherwise indicated) Substrate: Steel Surface Preparation: SSPC-SP10 2 cts. Dura-Plate 235 @ 5.0 mils dft/ct</p> <p><b>Abrasion Resistance:</b> Method: ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load Result: 65 mg loss</p> <p><b>Adhesion:</b> Method: ASTM D4541 Result: 850 psi</p> <p><b>Direct Impact Resistance:</b> Method: ASTM D2794 Result: 10 in lb</p> <p><b>Dry Heat Resistance:</b> Method: ASTM D2485 Result: 250°F</p> <p><b>Moisture Condensation Resistance:</b> Method: ASTM D4585, 100°F, 2000 hours Result: Rating 10 per ASTM D610 for rusting Rating 10 per ASTM D714 for blistering</p> <p><b>Pencil Hardness:</b> Method: ASTM D3363 Result: H</p> <p><b>IMMERSION (Ambient temperature)</b></p> <ul style="list-style-type: none"> <li>• Salt Water ..... Recommended</li> <li>• Fresh Water ..... Recommended</li> <li>• Ballast Tank Mix ..... Recommended</li> </ul> <p>Epoxy coatings may darken or yellow following application and curing.</p>
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**4.67**

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MULTI-PURPOSE EPOXY**

**PART A  
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**B67-235  
B67V235**

**SERIES COLORS  
HARDENER**

**PRODUCT INFORMATION**

RECOMMENDED SYSTEMS	SURFACE PREPARATION
<p><b>Steel, immersion or atmospheric service:</b> 2 cts. Dura-Plate 235 @ 4.0 - 8.0 mils dft/ct</p> <p><b>Steel, immersion service:</b> 1 ct. Dura-Plate 235 @ 4.0 - 8.0 mils dft 1-2 cts. Dura-Plate UHS @ 10.0 - 12.0 mils dft/ct</p> <p><b>Steel, immersion service:</b> 1 ct. Dura-Plate 235 @ 4.0 - 8.0 mils dft 1-2 cts. TarGuard Coal Tar Epoxy @ 8.0 - 16.0 mils dft/ct</p> <p><b>Steel, immersion service:</b> 2 cts. Dura-Plate 235 @ 4.0 - 8.0 mils dft 2 cts. SeaGuard Anti-Foulant (refer to respective data pages for coverage)</p> <p><b>Steel, atmospheric service:</b> 1 ct. Dura-Plate 235 @ 4.0 - 8.0 mils dft 1-2 cts. Macropoxy 646 @ 5.0 - 10.0 mils dft/ct</p> <p><b>Steel, atmospheric service:</b> 1 ct. Zinc-Clad II Plus @ 3.0 - 5.0 mils dft 1-2 cts. Dura-Plate 235 @ 4.0 - 8.0 mils dft/ct</p> <p><b>Steel, atmospheric service:</b> 1 ct. Zinc-Clad IV @ 3.0 - 5.0 mils dft 1-2 cts. Dura-Plate 235 @ 4.0 - 8.0 mils dft/ct</p> <p><b>Steel, atmospheric service:</b> 1 ct. Corothane I GalvaPac Zinc Primer @ 3.0 - 4.0 mils dft 1-2 cts. Dura-Plate 235 @ 4.0 - 8.0 mils dft/ct</p> <p><b>Steel, atmospheric service:</b> 1 ct. Dura-Plate 235 @ 4.0 - 8.0 mils dft 1-2 cts. Acrolon 218 HS @ 3.0 - 6.0 mils dft/ct or Hi-Solids Polyurethane @ 3.0 - 5.0 mils dft/ct</p> <p><b>Concrete/Masonry, immersion service:</b> 1 ct. Kem Cati-Coat HS Epoxy Filler/Sealer @ 10 - 20 mils dft/ct, as required to fill voids and provide a continuous substrate 2 cts. Dura-Plate 235 @ 4.0 - 8.0 mils dft/ct</p> <p><b>Galvanized, atmospheric service:</b> 1 ct. Dura-Plate 235 @ 4.0 - 8.0 mils dft</p>	<p>Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure good adhesion. Refer to product Application Bulletin for detailed surface preparation information. Minimum recommended surface preparation:</p> <p><b>Iron &amp; Steel:</b> Atmospheric: SSPC-SP2 or SSPC-SP12/NACE 5, WJ-4 Immersion: SSPC-SP10, 2 mil profile or SSPC-SP-12/NACE 5, WJ-2</p> <p><b>Concrete &amp; Masonry:</b> Atmospheric: SSPC-SP13/NACE 6, or ICRI 03732, CSP 1-3 Immersion: SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI 03732, CSP1-3</p> <p>Galvanized, atmospheric: SSPC-SP1</p>
	<p style="text-align: center;"><b>TINTING</b></p> <p>Tint Part A with 844 Colorants only. Mill White tints at 150%. Ultradeep Base tints at 100%. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.</p> <p><b>Note:</b> Not for immersion service when tinted.</p>
	<p style="text-align: center;"><b>APPLICATION CONDITIONS</b></p> <p>Temperature: 0°F minimum, 120°F maximum (air and surface) At least 5°F above dew point Material should be at least 40°F for optimal performance.</p> <p>Relative humidity: 85% maximum</p> <p>Refer to product Application Bulletin for detailed application information.</p>
	<p style="text-align: center;"><b>ORDERING INFORMATION</b></p> <p>Packaging: Part A: 1 gallon and 4 gallons in a 5 gallon container Part B: 1 quart and 1 gallon Weight per gallon: 11.3 ± 0.2 lb, mixed may vary with color</p>
	<p style="text-align: center;"><b>SAFETY PRECAUTIONS</b></p> <p>Refer to the MSDS sheet before use.</p> <p>Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.</p>
<p style="text-align: center;"><b>DISCLAIMER</b></p>	<p style="text-align: center;"><b>WARRANTY</b></p>
<p>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.</p>	<p>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.</p>

The systems listed above are representative of the product's use. Other systems may be appropriate.



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**PART A  
PART B**

**4.67A  
DURA-PLATE® 235  
MULTI-PURPOSE EPOXY**  
SERIES COLORS  
HARDENER

**APPLICATION BULLETIN**

Revised 1/06

SURFACE PREPARATION	APPLICATION CONDITIONS
<p><b>General Surface Preparation</b> Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure good adhesion.</p> <p><b>Iron &amp; Steel, Immersion Service:</b> 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 or SSPC-SP12/NACE 5. For SSPC-SP10/NACE 2, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils). For SSPC-SP12/NACE No. 5, all surfaces to be coated shall be cleaned in accordance with WJ-2. Pre-existing profile should be approximately 2 mils. Light rust bloom is allowed. Remove all weld spatter and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned.</p> <p><b>Iron &amp; Steel, Atmospheric Service:</b> Minimum surface preparation is Hand Tool Clean per SSPC-SP2 or SSPC-SP12/NACE 5. For surfaces prepared by SSPC-SP2, first 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). For surfaces prepared by SSPC-SP12/NACE No. 5, all surfaces shall be cleaned in accordance with WJ-4. Pre-existing profile should be approximately 2 mils. Prime any bare steel the same day as it is cleaned.</p> <p><b>Galvanized Steel</b> Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1 (recommended solvent is VM&amp;P Naphtha). 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.</p> <p><b>Concrete/Masonry, Atmospheric Service:</b> <b>New</b> For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI 03732, CSP 1-3. Surface must be clean, dry, sound, and offer sufficient profile to achieve adequate adhesion. Minimum substrate cure is 28 days at 75°F. Remove all form release agents, curing compounds, salts, efflorescence, laitance, and other foreign matter by sandblasting, shotblasting, mechanical scarification, or suitable chemical means. Refer to ASTM D4260. Rinse thoroughly to achieve a final pH between 8.0 and 10.0. Allow to dry thoroughly prior to coating.</p> <p><b>Old</b> Surface preparation is done in much the same manner as new concrete; however, if the concrete is contaminated with oils, grease, chemicals, etc., they must be removed by cleaning with a strong detergent. Refer to ASTM D4258. Form release agents, hardeners, etc. must be removed by sandblasting, shotblasting, mechanical scarification, or suitable chemical means. If surface deterioration presents an unacceptably rough surface, Kem Cati-Coat HS Epoxy Filler/Sealer is recommended to patch and resurface damaged concrete.</p> <p><b>Concrete/Masonry, Immersion Service:</b> For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 4.3.2, or ICRI 03732, CSP 1-3.</p> <p><b>Always follow the industry standards listed below:</b> 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-SP13/NACE 6 Surface Preparation of Concrete ICRI 03732</p>	<p>Temperature: 0°F minimum, 120°F maximum (air and surface) At least 5°F above dew point Material should be at least 40°F for optimal performance.</p> <p>Relative humidity: 85% maximum</p> <hr/> <p><b>APPLICATION EQUIPMENT</b></p> <p>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.</p> <p><b>Reducer/Clean Up</b> ..... Reducer R7K104</p> <p><b>Airless Spray</b></p> <p>Unit ..... 30:1 Pump Pressure ..... 2400 - 2800 psi Hose ..... 1/4" - 3/8" ID Tip ..... .015" - .019" Filter ..... 60 mesh Reduction ..... As needed, up to 10% by volume</p> <p><b>Conventional Spray</b></p> <p>Gun ..... DeVilbiss MBC-510 Fluid Tip ..... E Air Nozzle ..... 704 Atomization Pressure .. 60-65 psi Fluid Pressure ..... 5-15 psi Reduction ..... As needed, up to 10% by volume</p> <p><b>Brush</b></p> <p>Brush ..... Natural Bristle Reduction ..... Not recommended</p> <p><b>Roller</b></p> <p>Cover ..... 3/8" woven with phenolic core Reduction ..... Not recommended</p> <p>If specific application equipment is not listed above, equivalent equipment may be substituted.</p>



**Industrial  
&  
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**4.67A**

**DURA-PLATE® 235  
MULTI-PURPOSE EPOXY**

**PART A  
PART B**

**B67-235  
B67V235**

**SERIES COLORS  
HARDENER**

## APPLICATION BULLETIN

### APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly using power agitation. Make certain no pigment remains on the bottom of the can. Then combine 4 parts by volume of Part A with 1 part by volume of Part B. Thoroughly agitate the mixture with power agitation. Allow the material to sweat-in as indicated prior to application. Re-stir before using.

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

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

**Recommended Spreading Rate per coat:**

Wet mils: 6.0 - 12.0  
Dry mils: 4.0 - 8.0  
Coverage: 136 - 272 sq ft/gal approximate

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

**Drying Schedule @ 6.0 mils wet @ 50% RH:**

	@ 0°F	@ 40°F	@ 77°F	@ 120°F
To touch:	18 hours	3½ hours	2 hours	20 minutes
To handle:	36 hours	12 hours	3½ hours	40 minutes
To recoat:				
minimum:	36 hours	12 hours	3½ hours	40 minutes
maximum:	6 months	6 months	6 months	6 months
Cure to service:	30 days	14 days	7 days	3 days
<b>Pot Life:</b>	16 hours	8 hours	4 hours	1 hour
<b>Sweat-in-time:</b>	1 hour	30 mins	15 minutes	5 minutes

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.

### PERFORMANCE TIPS

Stripe coat 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 mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer R7K104.

Prior to immersion service, test coating with appropriate holiday detection equipment. Set charge in accordance with manufacturer's recommendation.

Not recommended for immersion service when tinted.

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

### CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer R7K104. Clean tools immediately after use with Reducer R7K104. Follow manufacturer's safety recommendations when using any solvent.

### SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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### DISCLAIMER

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### 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.