



Protective & Marine Coatings

DURA-PLATE® 301L/301K MOISTURE TOLERANT SOLVENT-FREE EPOXY

STANDARD VERSION	PART A:	N02MIL-K SERIES
	PART B:	N02CA301K
LOWER TEMP VERSION	PART A:	N02MIL-L SERIES
	PART B:	N02CA301L

Revised: February 6, 2014

PRODUCT INFORMATION

PRODUCT DESCRIPTION

DURA-PLATE 301L/K is a solvent-free, surface and humidity tolerant two-pack modified epoxy. It can be applied without dew point restrictions and over damp steel surfaces. DURA-PLATE 301L/K show good chemical and abrasion resistance and good edge-retentive properties. It can be applied over steel prepared by hydroblasting, grit blasting or mechanical tooling.

- Excellent edge retention (when used with 301S)
- No dew point or relative humidity restrictions
- Excellent anticorrosive properties
- Can be applied over damp substrates
- Can be applied over medium flash rust
- Excellent substrate and intercoat adhesion

PRODUCT CHARACTERISTICS

Finish:	Semi-gloss
Color:	Red Oxide, Moss Green, Light Gray, White, Dark Gray
Volume Solids:	97 ± 3%
Weight Solids:	98 ± 2%
VOC (EPA Method 24):	<100 g/L ; 0.83 lb/gal
Mix Ratio:	3.3:1, by volume

Theoretical Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.0 (100)	6.0 (150)
Dry mils (microns)	4.0 (100)	6.0 (150)
~Coverage sq ft/gal (m²/L)	267 (6.7)	401 (10)

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

Drying Schedule @ 4.0 mils wet (100 microns):

Version: 301L	@ 50°F/10°C		@ 77°F/25°C	
	50% RH			
To touch:	48 hours	10 hours	24 hours	
Foot traffic:	56 hours	24 hours		
To recoat:				
minimum:	48 hours	16 hours		
maximum:	15 days	7 days		
To cure:	10 days	4 days		
Pot life:	4 hours	45 minutes		

Version: 301K	@ 59°F/15°C		@ 77°F/25°C		@ 104°F/40°C
	50% RH				
To touch:	24 hours	14 hours	5 hours		
Foot traffic:	56 hours	24 hours	16 hours		
To recoat:					
minimum:	24 hours	16 hours	8 hours		
maximum:	15 days	8 days	5 days		
To cure:	10 days	4 days	36 hours		
Pot life:	8 hours	3 hours	30 minutes		

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

Shelf Life:	12 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C)
Flash Point:	>212°F (>102°C), mixed (ASTM D56)
Clean Up:	R6K10 (MEK) or R7K104

RECOMMENDED USES

DURA-PLATE 301L/K is an anticorrosive coating for long service life steel protection. It can be used for both immersion and above the waterline service in marine, offshore, construction and industrial applications.

It is suitable for new building, conversion, repair or maintenance applications. It provides superior performance protecting areas such as ballast tanks, void tanks, crude oil tanks, slop tanks, mud pits, wet spaces, bilges, decks, external hull and steel bridges.

Suitable for use in USDA Inspected Facilities.

Suitable for use in the Mining & Minerals Industry.

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Adhesion (Pull-off) ASTM D4541	After application and curing	1740 - 3480 psi 12,0 - 24,0 MPa
	After 1000 hrs salt fog	1350 - 1550 psi 9,3 - 10,8 MPa (301K + 301S)
	After 700 hrs salt fog	1450 psi / 10,0 MPa (301L + 301S + PU14) NF EN 24624
	After 1000 hrs condensation	1670 - 2000 psi 11,5 - 13,8 MPa (301K + 301S)
Atmospheric Exposure	2.5 years	Rust rating: 10 Blistering rating: 10 Scribe undercut: .5mm
Cathodic Disbonding	MIL-P-24647, 90 days	Passes
Combined Weathering	NACE TM0184, 4000 hrs.	No defects
Compressive Strength	ISO 844	~ 15,000 psi (1.050 KgF/cm ²)
Corrosion Weathering	NORSOK M-501 Rev.4, 4200 hrs.	Rating 10 per ASTM D714 for blistering;
	ASTM D5894, 4032 hrs.	Rating 10 per ASTM D610 for rusting
	ISO 20340, 4200 hrs.	
Edge-retention	MIL-PRF-23236	Ratio of 74-101%, for edge radius from 0.1 mm to 2.4 mm, respectively. 301K + 301S system
Elasticity Modulus	ISO/R 527	~1,422 x 106 psi (100,000 KgF/cm ²)
Fire Resistance	ASTM E84-01	Rating A
Flexibility	ASTM D522, 180° bend, 1/2" mandrel	Passes
Flexural Strength	ISO 178	9245 psi (650 KgF/cm ²)
Humidity Resistance	ASTM D4585, 1000 hrs. ASTM D4585, 2000 hrs.	ASTM D1654, Rating:10 No defects
Maximum Elongation	ISO/R 527	3%
Prohesion	ASTM G85, 2000 hours	Passes
Salt Fog Resistance	ASTM B117, 1000 hours	D1654: Rating: 10
	ASTM B117, 2000 hours	No defects



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Revised: February 6, 2014

PRODUCT INFORMATION

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Immersion or Atmospheric			
1-2 cts.	DURA-PLATE 301L or K	4.0-6.0	(100-150)
1 ct.	DURA-PLATE 301S (optional)	4.0-6.0	(100-150)
Atmospheric			
1-2 cts.	DURA-PLATE 301L or K	4.0-6.0	(100-150)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)

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

CERTIFICATES AND APPROVALS

IMO PSPC (301K only): Type Approved as part of a coating system compliant with IMO MSC.215(82) (Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks and Double Side Skin Spaces). ABS Type Approval Certificate Number: 08-HS314072-PDA. Germanischer Lloyds Type Approval Certificate GL-KORR 1159HH. Lloyds Register Type Approval Certificate No. MNDE/2008/2847.

SNCF: Approved by Société National de Chemins de Fer (France) as a part of a coating system for steel bridges protection using Ultra High Pressure hydroblasting (livret IN 0036).

NFPA: part of a system recognizable as Class A rated by National Fire Protection Agency (USA) regarding Flame Spread and Smoke Developed Index accordingly to NFPA standard 101. Systems have been tested using the ASTM E84 standard by the NGC Fire Testing Laboratory (File FH 1525, Project H330).

Newcastle City Health: Tested for non-contamination of grain cargo by Newcastle Occupational Health, UK (Report 6004/97).

APPLICATION CONDITIONS

Temperature:	301L	301K
Ambient:		
Minimum:	50°F/10°C	59°F/15°C
Substrate:		
Minimum:	50°F/10°C	50°F/10°C
Maximum:	122°F/50°C	122°F/50°C
Relative humidity:	No restrictions	

Refer to product Application Bulletin for detailed application information.

TINTING

Do not tint.

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 PREPARATION

Surface must be clean and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

DURA-PLATE 301L or K is tolerant to hydroblasted, wet or dry abrasive blasted or mechanically treated surfaces.

***Abrasive blasting:** SSPC SP6 or NACE 3 (ISO 8501-1:1988)

Hydroblasting: WJ-2M (SSPC SP12 – VIS4(I) / NACE N°5 - N°7)

***Mechanical Treated:** SSPC SP3 (ISO 8501 -1:1988)

*Recommended surface profile 2-3 mils (50-75 microns)

Additional Advantages: Independently of the type of surface preparation, DURA-PLATE 301 moisture tolerance allows for a clean water surface washing before coating to reduce salt contamination. This procedure allowance means that SC2 non-visual standards (NACE 5 / SSPC-SP12) can easily be reached. DURA-PLATE 301 iron oxides tolerance allows to proceed with the coating application even over a considerably flash rusted surface (equivalent to M degree as described at SSPC VIS4 (I) / NACE N°7 standard).

Recoating over old paints in good condition: DURA-PLATE 301L or K in most cases can be applied over existing sound coating systems. Adhesion with existing coatings should be tested in a small area, before painting. Also, the adhesion of the old material should be verified. All loose materials should be removed. Please contact our Technical Support team to evaluate surface preparation alternatives. Acceptable cleaning and degreasing the surface is required. Abrading the old coating surface, to promote adhesion, is also recommended.

Surface Preparation Standards

Condition of Surface	ISO 8501-1	Swedish Std.	SSPC	NACE
	BS7079:A1	SIS055900		
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	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	-

ORDERING INFORMATION

Packaging and Weight:

5 Gal kit:	Part A:	4 US gal in a 5 US gal container
	Part B:	1 US gal in a 1 US gal container
	Weight:	54.54 ± 0.2 lbs (24.79 K/g)
1 Gal kit:	Part A:	0.8 US gal in a 1 US gal container
	Part B:	0.2 US gal in a 1 US quart container
	Weight:	10.91 ± 0.2 lbs (4.96 K/g)
20 Liter kit:	Part A:	16 Liters in a 20 Liter container
	Part B:	4 Liters in a 5 Liter container
	Weight:	57.64 ± 0.2 lbs (26.2 K/g)
5 Liter kit:	Part A:	4 Liters in a 5 Liter container
	Part B:	1 Liter in a 1 Liter container
	Weight:	14.41 ± 0.2 lbs (6.55 K/g)

DISCLAIMER

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	PART B:	N02CA301L

Revised: February 6, 2014

APPLICATION BULLETIN

SURFACE PREPARATIONS

Surface must be clean and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

DURA-PLATE 301L or K is tolerant to hydroblasted, wet or dry abrasive blasted or mechanically treated surfaces.

- ***Abrasive blasting:** SSPC SP6 or NACE 3 (ISO 8501-1:1988)
- ***Hydroblasting:** WJ-2M (SSPC SP12 – VIS4(I) / NACE N°5 - N°7)
- ***Mechanical Treated:** SSPC SP3 (ISO 8501 -1:1988)

*Recommended surface profile 2-3 mils (50-75 microns)

Additional Advantages: Independently of the type of surface preparation, DURA-PLATE 301 moisture tolerance allows for a clean water surface washing before coating to reduce salt contamination. This procedure allowance means that SC2 non-visual standards (NACE 5 / SSPC-SP12) can easily be reached. DURA-PLATE 301 iron oxides tolerance allows to proceed with the coating application even over a considerably flash rusted surface (equivalent to M degree as described at SSPC VIS4 (I) / NACE N°7 standard).

Recoating over old paints in good condition: DURA-PLATE 301L or K in most cases can be applied over existing sound coating systems. Adhesion with existing coatings should be tested in a small area, before painting. Also, the adhesion of the old material should be verified. All loose materials should be removed. Please contact our Technical Support team to evaluate surface preparation alternatives. Acceptable cleaning and degreasing the surface is required. Abrading the old coating surface, to promote adhesion, is also recommended.

APPLICATION CONDITIONS

Temperature:	301L	301K
Ambient:		
Minimum:	50°F/10°C	59°F/15°C
Substrate:		
Minimum:	50°F/10°C	50°F/10°C
Maximum:	122°F/50°C	122°F/50°C
Relative humidity:	No restrictions	

Refer to product Application Bulletin for detailed application information.

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.

Clean UpR6K10 (MEK) or R7K104

Airless Spray

Pressure.....	3625 - 4350 psi (250-300 bar)
Tip015" - .021"
Reduction.....	None

Conventional Spray

Gun	DeVilbiss MBC-510
Fluid Tip	D
Cap	64HD
Atomization Pressure.....	35-40 psi
Fluid Pressure.....	15 psi
Fluid & Air Lines.....	3/8"

Plural Component Equipment

Pump.....	Graco XP70 or ExtremeMix
Pressure.....	5,000 psi
Hose.....	3/8" ID
Tip015" - .021"
Pump Heater Setting.....	80-90

Brush (for stripe coating and repair only)

Brush.....Nylon/polyester or natural bristle

Roller (for stripe coating and repair only)

Cover3/8" woven with solvent resistant core

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted C St 2	C St 2	SP 2	-
Pitted & Rusted	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted D St 3	D St 3	SP 3	-

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



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APPLICATION BULLETIN

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Mix paint thoroughly to a uniform consistency with low speed power agitation prior to use.

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

Theoretical Spreading Rate per coat:		
	Minimum	Maximum
Wet mils (microns)	4.0 (100)	6.0 (150)
Dry mils (microns)	4.0 (100)	6.0 (150)
~Coverage sq ft/gal (m²/L)	267 (6.7)	401 (10)

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

Drying Schedule @ 4.0 mils wet (100 microns):		
Version: 301L	@ 50°F/10°C	@ 77°F/25°C
		50% RH
To touch:	48 hours	10 hours
Foot traffic:	56 hours	24 hours
To recoat:		
minimum:	48 hours	16 hours
maximum:	15 days	7 days
To cure:	10 days	4 days
Pot life:	4 hours	45 minutes

Version: 301K	@ 59°F/15°C	@ 77°F/25°C	@ 104°F/40°C
		50% RH	
To touch:	24 hours	14 hours	5 hours
Foot traffic:	56 hours	24 hours	16 hours
To recoat:			
minimum:	24 hours	16 hours	8 hours
maximum:	15 days	8 days	5 days
To cure:	10 days	4 days	36 hours
Pot life:	8 hours	3 hours	30 minutes

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 R6K10 (MEK) or R7K104. Clean tools immediately after use with R6K10 (MEK) or R7K104. After cleaning, flush spray equipment with R6K10 (MEK) or R7K104 to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using R6K10 (MEK) or R7K104.

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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.

Reduction of material will 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 R6K10 (MEK) or R7K104.

Holiday Detection (if required): Prior to immersion service, test coating with appropriate holiday detection equipment. Refer to NACE RPO188-0 for specific procedures.

Guidance on techniques and required equipment to inspect a coating system incorporating Opti-Check OAP Technology can be found in SSPC-TU 11.

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.

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.