



Protective & Marine Coatings

DURA-PLATE™ 301K SURFACE TOLERANT

Revised 08/2017 - Issue 3

PRODUCT INFORMATION

PRODUCT DESCRIPTION

DURA-PLATE 301K is a solvent-free, surface and humidity tolerant two-pack modified epoxy. It can be applied without dew point restrictions and over wet steel surfaces. 301K shows good chemical resistant, abrasion resistant and 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 wet substrates
- Can be applied over medium flash rust
- Excellent substrate and intercoat adhesion

PRODUCT CHARACTERISTICS

Finish:	Semi-gloss
Colour:	Red Oxide, Light Grey, White, Light Green, Black
Volume Solids:	97 ± 3%
Weight Solids:	98 ± 2%
VOC (EPA Method 24):	<150 g/l; 1.25 lb/gal
Mix Ratio:	3.3:1 by volume
Weight:	1.31Kg/l (may vary slightly with shade)

Theoretical Spreading Rate per coat:

	Minimum	Maximum
Wet microns (mils)	100 (4)	300 (12)
Dry microns (mils)	100 (4)	300 (12)
~Coverage m²/L (sq ft/gal)	10 (401)	3.3 (137)

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

	@ 15°C/59°F	@ 25°C/77°F 50% RH	@ 40°C/104°F
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	7 days	4 days
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 4.5°C (40°F) to 38°C (100°F)
Flash Point:	> 102°C (>212°F), mixed (ASTM D56)
Clean Up:	TH03

RECOMMENDED USES

DURA-PLATE 301K 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.

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 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 D1654, Rating:10
	ASTM D4585, 2000 hrs.	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

RECOMMENDED SYSTEMS

Immersion or Atmospheric	Dry Film Thickness / ct.	
	Microns	(Mils)
1-2 cts. DURA-PLATE 301K	100-150	(4-6)
1 ct. DURA-PLATE 301S (optional)	100-150	(4-6)
Atmospheric		
1-2 cts. DURA-PLATE 301	100-150	(4-6)
1-2 cts. Acrolon 218 HS Polyurethane	75-150	(3-6)

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



Protective & Marine Coatings

DURA-PLATE™ 301K SURFACE TOLERANT

Revised 08/2017 - Issue 3

PRODUCT INFORMATION

CERTIFICATES AND APPROVALS

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).

Over bare metal: ABS Type Approval Certificate N°08-HS314072-PDA. Germanischer Lloyds Type Approval Certificate GL-KORR 1159HH. Lloyds Register Type Approval Certificate N°. MNDE/2008/2847.

Over Macropoxy PE31 shop primer: ABS Type Approval Certificate N° 09-HS538809-PDA.

Over UHP hydroblasting, abrasive blasting and Macropoxy PE31 shop primer: DNV Type Approval Certificate N° K-4211.

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
Ambient:	
Minimum:	15°C/59°F
Substrate:	
Minimum:	10°C/50°F
Maximum:	50°C/122°F
Relative humidity:	No restrictions
Dew Point:	No restrictions

APPLICATION EQUIPMENT

Airless Spray - GRACO KING 56:1 OR SIMILAR - ALL FILTERS

REMOVED - MIN 3/8" HOSE DIAMETER

Nozzle Size:	17-21 thou (0.43 – 0.54mm)
Fan Angle:	60° - 80°
Operating Pressure:	3500-3900 psi (246-274kg/cm ²)

The airless spray details given above are intended as a guide only. Details such as fluid hose length and diameter, paint temperature and job shape and size all have an effect on the spray tip and operating pressure chosen. However, the operating pressure should be the lowest possible consistent with satisfactory atomisation. As conditions will vary from job to job, it is the applicators' responsibility to ensure that the equipment in use has been set up to give the best results. If in doubt Sherwin-Williams should be consulted.

Brush

The material is suitable for brush application, as a stripe coat or for touch up of small areas @ 75µm dft maximum.

Application of more than one coat will be necessary to give equivalent dry film thickness to a single spray applied coat.

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

Abrasive blasting: Sa 2 ISO 8501-1:2007 (SSPC-SP6/NACE 3)

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

Mechanical Treated: ST3 ISO 8501-1:2007 (SSPC-SP3)

Additional Advantages: Independently of the type of surface preparation, 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. 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: 301K 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 Sherwin-Williams to evaluate surface preparation alternatives. Acceptable cleaning and degreasing the surface is required. Abrading the old coating surface, to promote adhesion, is also recommended.

Tolerant to application to surfaces which may be wet at the time of application. An acceptable 'wet' surface is defined as a surface on which a thin, even film of moisture is present, but is free from running water, droplets or pooled water. An acceptable wet condition can be field tested by drawing a "V" the size of a hand in a vertical substrate. If this causes water to drip or run down the surface then the water load in the surface is too high ("saturated"). If not, it is considered "wet" and it is acceptable to apply DURA-PLATE 301K.

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	SP 2	-
	Pitted & Rusted	D St 2	SP 2	-
	Rusted	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted	D St 3	SP3	-

ORDERING INFORMATION

20 litre kit:	Part A: 15.35 litres in a 20 litre container
	Part B: 4.65 litres in a 5 litre container
4 litre kit:	Part A: 3.07 litres in a 5 litre container
	Part B: 0.93 litres in a 1 litre container

HEALTH AND SAFETY

Consult Product Health and Safety Data Sheet for information on safe storage, handling and application of this product.

WARRANTY

Any person or company using the product without first making further enquiries as to the suitability of the product for the intended purpose does so at their own risk, and Sherwin-Williams can accept no liability for the performance of the product, or for any loss or damage arising out of such use.

The information detailed in this Data Sheet is liable to modification from time to time in the light of experience and of normal product development, and before using, customers are advised to check with Sherwin-Williams, quoting the reference number, to ensure that they possess the latest issue.