

Dura-Plate® 301 Epoxy Systems



Surface and Humidity Tolerant Epoxy Technology

Dura-Plate® 301 epoxy systems offer advanced technology to provide cost-effective solutions while providing outstanding durability and long-term performance. More than 15 million square metres of steel has been protected with Dura-Plate® 301 systems worldwide, including offshore platforms, ships, steel bridges, refineries and tanks.

Designed for 25 year service life under offshore exposure



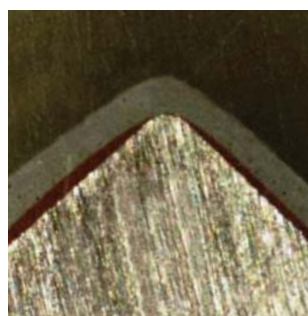
Premier technology over hydroblasted surfaces:

Lower surface preparation costs compared to abrasive blasting. Environmentally responsible.



Environmental tolerance:

No dew-point restrictions. Application over damp surfaces and flash-rust.



Edge retention:

Minimises stripe coat and steel edge grinding costs.



Excellent adhesion:

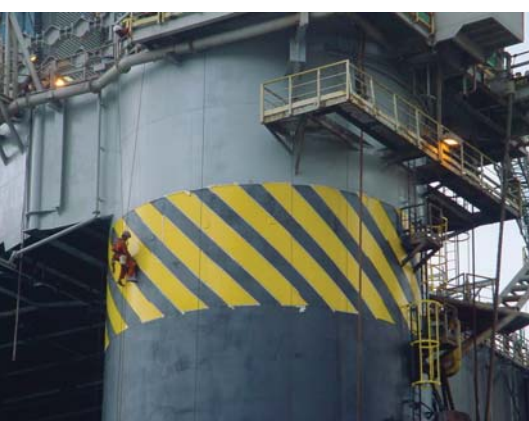
Pull-off adhesion to steel as high as 25 MPa (3625 psi) means long-term performance and tolerance to low profile roughness.

Dura-Plate® 301 is an excellent surface and humidity anticorrosive epoxy, formulated for application over marginally prepared surfaces.

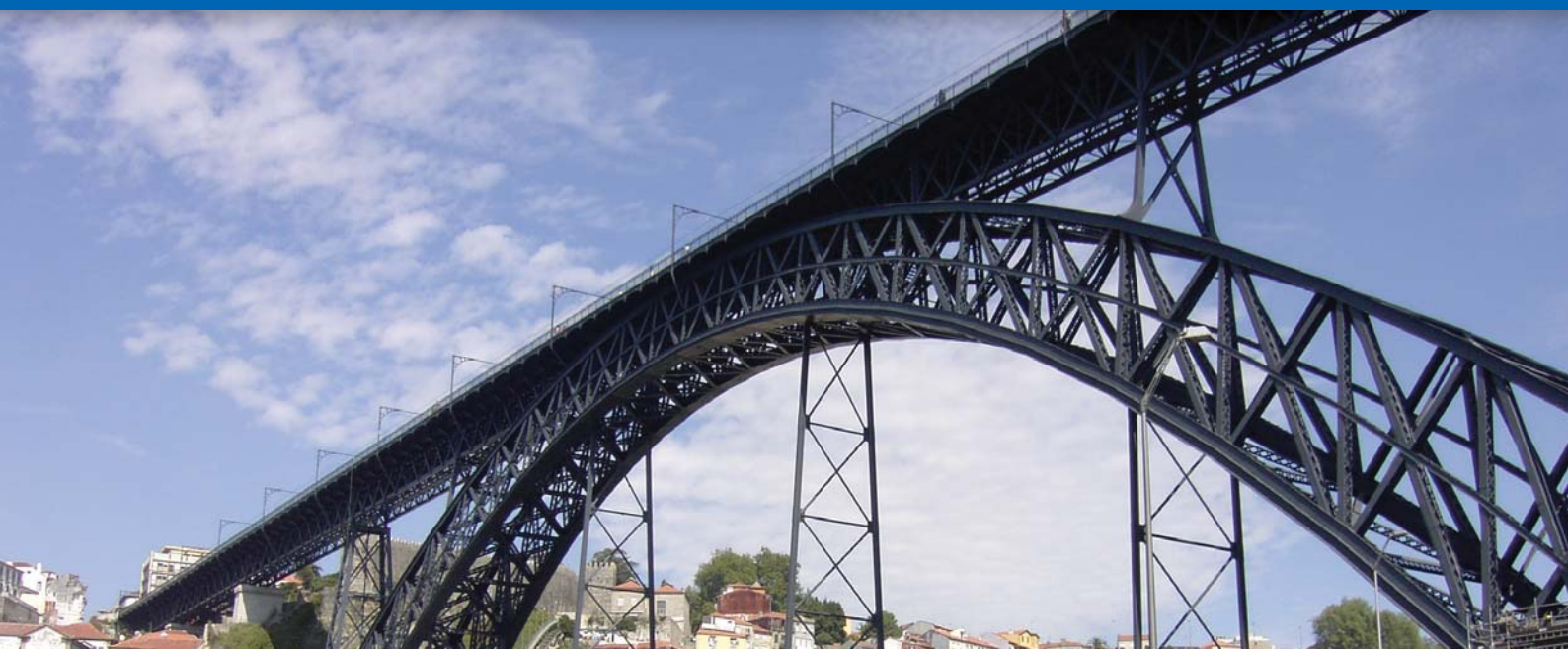
- Apply over damp surfaces
- Apply over flash-rust (WJ2M – SSPC VIS4)
- Can be applied over existing coatings
- Standard airless application, brush or roller application
- Excellent adhesion – up to 25 MPa (3625 PSI)
- Curing down to 0°C (301 W)
- Up to 3 hours pot-life (25°C) (301 K)
- Saves time and labour costs
- Extends painting season
- Up to six months recoatability*.

* 301W variant only.

**World's only IMO
PSPC approval
over UHP water
jetting and a zinc
free shop primer**



Features	Benefits			
	Performance	Environment	Costs & Time	Safety
Humidity tolerance	Reduced risk of failure associated with humidity levels	Enables the use of UHP, thus reducing the environmental impact of abrasive use and disposal	No wet blast primer needed. No dehumidification needed. Extended painting window - night time, humid conditions	Enables the use of UHP, thus reducing the health and safety hazards associated with abrasive blasting
Surface tolerance	Good adhesion over flash rust, aged existing coatings and power tooled surfaces			
Very high adhesion	Extended durability. Compatible with low roughness profile		Reduces coating failure & need for rework on areas with low profile roughness	
Fully compatability with UHP water jetting	Reduced risk of chloride contamination		Saves the need for abrasive removal after blasting	
Cold curing (301W down to 0°C)	Delivers performance at very low application temperatures		Expands coating season	
No solvent added to formula (97% solids volume)	Reduced risk of solvent retention or film pinholing. No dimensional stress upon curing	Reduced release of environmentally hazardous VOCs	Faster application. Extend painting schedules due to compatibility with hot works in the vicinity	Strongly reduce fire hazard risk. Reduced health risks associated with solvent release
High edge retention	Better protection over edges and welds		Reduced number of stripe coats. Reduced need for edge grinding	
Dry film low smoke liberation and low flame spread index (tested for 301K)	Smaller areas to repair after weld burns means reduction of performance risks	Reduced release of environmentally hazardous fumes in case of fire	Smaller areas to repair after weld burns means reduction of rework time and costs	Reduced smoke intoxication risks in case of fire or during weld procedures



Products

Dura-Plate® 301K:

Primer/buildcoat for use at temperatures above 15°C.

Dura-Plate® 301W:

Primer/buildcoat for use at temperatures from 0°C to 15°C.

Physical Testing*

Performance Criteria	Result
Weathering test NACE TM0184	4000 h no defects
Cathodic disbonding ASTM G8 MIL P24647 (90 days)	< 2 mm No defects
ISO 20340 Cathodic disbondment, after 4,200hrs ISO 15711:2003 method A, ECD	0.5-1.0mm
ISO 20340 Seawater Immersion, after 4,200hrs ISO 4624 Rusting spread from the scribe	18Mpa 0 mm
Falling weight (EN ISO 6272)	6.4 – 8.3 J (fall from 65 to 85 cm)
ASTM E84-01 (flame spread and smoke liberation)	Rating A NFPA N°101
Edge-retention (MIL-PRF 23236 C)	Ratio 74% - 100% (for radius 0.1 mm to 2.4 mm)
Flexibility (NACE RP0394-2002 Procedure B)	5.48% average permanent elongation
IMO PSPC wave tank test over UHP blasted bare metal Undercutting from scribe Cathodic disbondment	6.95 mm 4.9 mm
IMO PSPC wave tank test over PE31 shop primer Undercutting from scribe Cathodic disbondment	4.96 mm 0 mm

Adhesion Data

Testing Data	Result	
PAT Test Standard ISO 4624 (ASTM 4541)	301K (MPa) cured @ 23°C	301W (MPa) cured @ 0°C
Adhesion over abrasive blasted steel		
Sa 2.5 (ISO 8501-1:2007)	14.0	14.0
Adhesion over marginally prepared substrate		
Power Tool St3 (ISO 8501-1:2007)	13.1	15.8
Medium Flash Rust	10.9	13.5
Damp Substrate (Water Misted)	7.0	12.9
Aged Steel (1 week external exposure Rust Grade B)	10.7	12.0
UHP Water jetted	12.0	12.2

Systems Approvals**

NORSOK M501 Revision 5 Approved

System 3B Ballast Tanks

System 7 Immersion

NAVSEA/US NAVY MIL-PRF 23236C APPROVED as Type VII coating (no solvent added), for the following classes:

Class 7 (seawater ballast tanks for high durability, 20 years service life).

Class 15b (use over wet surfaces prepared to bare metal).

Class 17 (bilges).

IMO PSPC TYPE APPROVED BY ABS, DNV, LLOYD'S REGISTER AND GERMANISCHER LLOYD

Type approved as compliant with IMO MSC.215(82) for ballast tank coating with a target useful life of 15 years.



* Please refer to Sherwin-Williams Technical Customer Support Team for further details on testing protocols and specific versions used

** Norsok M501, IMO PSPC and MIL-PRF 23236 testing performed using 301K as primer.

Key Applications

Dura-Plate® 301 is recommended for use whenever valuable assets are exposed to harsh environments and challenging application conditions need to be endured.

Its unique features deliver high durability in new build, maintenance and conversion projects with surface and humidity tolerance characteristics which deliver performance in conditions that would typically eliminate the use of more conventional technologies.

Oil & Gas

- Structural steel
- Ballast water and crude tanks
- Tank storage externals
- Offshore platform legs and under water hull
- FPSO decks, tanks, topsides, underwater hull.

Marine

- Underwater hull
- Decks
- Ballast water tanks
- Topsides.

Infrastructure

- Steel bridges
- Water and waste water.

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