Dura-Plate™ 301

Epoxy systems

NOW
COLD CURING & EXTENDED RECOATABILITY

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.

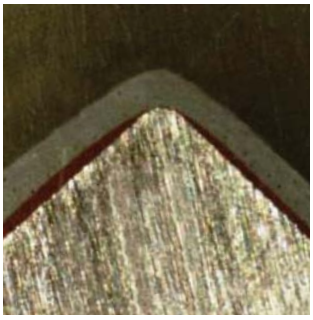
Designed for 25 year service life under offshore exposure

Premier technology over hydroblasted surfaces:

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

Environmental tolerance:

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



Edge retention:

Minimises stripe coat and steel edge grinding costs.

Excellent adhesion:

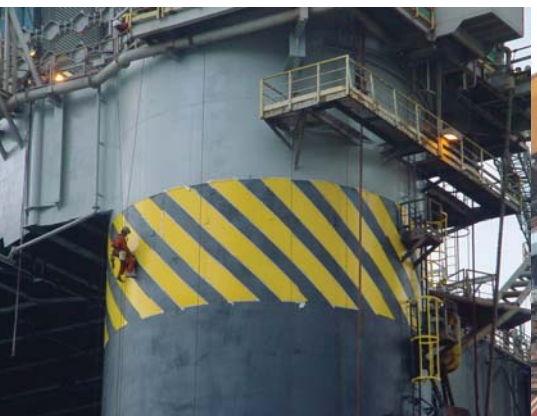
Pull-off adhesion to steel as high 25 MPa (3625 psi) means long-term performance and tolerance to low profile roughness.

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

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

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

* 301W variant only.



Features	Benefits			
	Performance	Environment	Costs and 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 and need for rework on areas with low profile roughness.	
Fully compatibility with UHP water jetting	Reduced risk of chloride contamination.		Saves the need for abrasive removal after blasting.	
Cold curing (301W down to 0ºC)	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/build coat for use at temperatures above 15°C.

Dura-Plate™ 301W:
Primer/build coat for use at temperatures from 0°C to 15°C.

Physical testing*

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

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
Wet 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

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 for water ballast tanks – IMO Res. MSC 215 (82) compliant for >15 years durability.

IMO PSPC for crude oil tanks – IMO Res. MSC.288 (87) compliant for >15 years durability.

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

** NORSOK M501, IMO MSC 215 and MIL-PRF 23236 testing performed using 301K as primer. IMO MSC 288, Network rail and London Underground testing performed using 301W 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.

The Sherwin-Williams difference

By putting our customers first, we know that the innovation, imagination, research and development we put into each and every product will be worth it. You are at the centre of our thinking wherever we operate around the world across five continents whether it is advice, specification or on-site inspection. You are the reason we exist. This is the Sherwin-Williams difference.

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