SIGMALINE™ 2500

DESCRIPTION

Two-component, solvent-free amine cured novolac phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- One-coat system direct to metal for pipe internals and externals
- Excellent resistance to cathodic protection
- Excellent resistance to crude oil up to 120°C (250°F)
- Glossy and smooth appearance
- Reduced explosion risk and fire hazard
- Fast-curing, especially when applied to preheated substrates
- Can be applied to rotating pipes at a dry-film thickness (DFT) up to 600 µm (24.0 mils) at a substrate temperature up to 90°C (194°F)

COLOR AND GLOSS LEVEL

- Dark brown
- Gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.5 kg/l (12.5 lb/US gal)
Volume solids	100%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 83.0 g/kg max. 125.0 g/l (approx. 1.0 lb/US gal)
Recommended dry film thickness	600 - 1000 µm (24.0 - 40.0 mils)
Theoretical spreading rate	1.7 m^2/l for 600 µm (67 ft^2/US gal for 24.0 mils) 1.0 m^2/l for 1000 µm (40 ft^2/US gal for 40.0 mils)
Dry to touch	30 minutes at 60 °C (140°F)
Overcoating Interval	Minimum: 3 hours Maximum: 1 month
Full cure after	48 hours
Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 months when stored cool and dry

Notes:
- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time

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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; blast cleaned to a minimum of ISO-Sa2½ (SSPC SP-10), blasting profile 50 – 100 µm (2.0 – 4.0 mils)

Substrate temperature and application conditions

- Substrate temperature during application and curing should be above 15°C (59°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
- Substrate temperature during automatic application between 40°C (104°F) and 60°C (140°F) is recommended, which will ensure good curing and appearance

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 80:20 (4:1)

- Application with twin-feed hot airless spray equipment

Induction time

None

Pot life

5 minutes at 50°C (122°F)

Note: See ADDITIONAL DATA – Pot life

Airless spray

- Twin-feed, hot airless spray
- Pumping viscosity is achieved at 40°C (104°F) to 60°C (140°F)
- Temperature in the mixing unit must be between 40°C - 70°C (104°F - 158°F)

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.48 – 0.78 mm (0.019 – 0.031 in)

Nozzle pressure

At 40°C (104°F) paint temperature min. 19.0 MPa (approx. 190 bar; 2756 p.s.i.). At 60°C (140°F) min. 15.0 MPa (approx. 150 bar; 2176 p.s.i.)

Note: Sag resistance depends on both paint and substrate temperature. Film build can be optimized by applying multiple passes wet-in-wet after allowing the previous pass to set

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Brush/roller
- Only for touch-up and spot repair

Recommended thinner
No thinner should be added

Cleaning solvent
THINNER 90-83 (preferred) or THINNER 90-53

Cleaning procedures
- All application equipment must be cleaned immediately after use
- Paint inside the spraying equipment must be removed before the pot life has been expired

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
600 µm (24.0 mils)	1.7 m^2/l (67 ft^2/US gal)
800 µm (32.0 mils)	1.3 m^2/l (50 ft^2/US gal)
1000 µm (40.0 mils)	1.0 m^2/l (40 ft^2/US gal)

Overcoating interval for DFT up to 600 µm (24.0 mils)				
Overcoating with...	**Interval**	**20°C (68°F)**	**30°C (86°F)**	**40°C (104°F)**
itself	Minimum	3 hours	1.5 hours	1 hour
	Maximum	1 month	1 month	1 month

Notes:
- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)
- When exposed to sunlight maximum interval is 2 days for all mentioned temperatures

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Curing time for DFT up to 600 µm (24.0 mils)		
Substrate temperature	**Dry to handle**	**Full cure**
20°C (68°F)	3 hours	48 hours
30°C (86°F)	1.5 hours	24 hours
40°C (104°F)	1 hour	12 hours
50°C (122°F)	40 minutes	6 hours
60°C (140°F)	30 minutes	3 hours
70°C (158°F)	20 minutes	2 hours
90°C (194°F)	10 minutes	1 hour

Note: Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
20°C (68°F)	20 minutes
50°C (122°F)	5 minutes
60°C (140°F)	4 minutes
70°C (158°F)	3 minutes

Note: Due to exothermic reaction, temperature during and after mixing may increase

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- Although this is a solvent-free paint, care should be taken to avoid inhalation of spray mist, as well as contact between the wet paint and exposed skin or eyes
- Ventilation should be provided in confined spaces to maintain good visibility

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

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REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431
• SAFE WORKING IN CONFINED SPACES	INFORMATION SHEET	1433
• DIRECTIVES FOR VENTILATION PRACTICE	INFORMATION SHEET	1434
• CLEANING OF STEEL AND REMOVAL OF RUST	INFORMATION SHEET	1490
• SPECIFICATION FOR MINERAL ABRASIVES	INFORMATION SHEET	1491
• SURFACE PREPARATION OF STEEL PIPES AND FITTINGS SHOP APPLICATION	INFORMATION SHEET	1492
• INTERNAL CHEMICAL CLEANING OF STEEL PIPES IN-SITU APPLICATION	INFORMATION SHEET	1493
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650

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