

SIGMASHIELD™ 1200 LT

DESCRIPTION

Two-component, abrasion-resistant, solvent-free, amine-cured phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- Single coat system designed for under water hull of ice going and ice breaking vessels, with mechanical anti-fouling properties (easy to clean)
- Recognised by Lloyd's register as an abrasion resistant ice coating
- Excellent abrasion and impact resistance
- Highly durable deck system, which needs heavy impact and abrasion resistance such as cattle decks of livestock carriers and car decks of Ro-Ro vessels
- Low coefficient of friction
- Resistant to well designed cathodic protection
- Also suitable for tanks and other structures requiring abrasion resistance
- Excellent resistance to crude oil up to 120°C (250°F)
- Good chemical resistance against a wide range of chemicals and solvents
- Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
- Cures at temperatures down to 5°C (41°F)
- Service life is expected more than 20 years when dried film is not seriously damaged

COLOR AND GLOSS LEVEL

- Light Gray, dark gray, redbrown, black (other colors available on request)
- Gloss

BASIC DATA AT 10°C (50°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 2010/75/EU, SED: max. 92.0 g/kg UK PG 6/23(92) Appendix 3: max. 136.0 g/l (approx. 1.1 lb/US gal)
Recommended dry film thickness	400 - 600 µm (16.0 - 24.0 mils)
Theoretical spreading rate	2.5 m ² /l for 400 µm (100 ft ² /US gal for 16.0 mils)
Dry to touch	8 hours
Overcoating Interval	Minimum: 24 hours Maximum: 22 days
Full cure after	5 days

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Data for mixed product

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 – Spreading rate and film thickness
- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; blast cleaned to a minimum of ISO-Sa2½, blasting profile 50 – 100 µm (2.0 – 4.0 mils)
- Surface must be dry and free from any contamination

Substrate temperature and application conditions

- Substrate temperature during application and curing should be above 5°C (41°F)
- Substrate temperature during application should be at least 3°C (5°F) above dew point

INSTRUCTIONS FOR USE

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

- When mixing, the temperature of the base and hardener should be at least 20°C (68°F)
- At lower temperature, the viscosity will be too high for spray application
- No thinner should be added

Induction time

None

Pot life

30 minutes at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life



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Airless spray

- Twin-feed, hot airless spray
- Heavy-duty, single-feed airless spray equipment preferably 60:1 pump ratio and suitable high-pressure hoses
- In-line heating or insulated hoses may be necessary to avoid cooling down of paint in hoses at low air temperature
- Length of hoses should be as short as possible

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.53 mm (0.021 in)

Nozzle pressure

At 20°C (68°F) paint temperature min. 28.0 MPa (approx. 280 bar; 4061 p.s.i.). At 30°C (86°F) min. 22.0 MPa (approx. 220 bar; 3191 p.s.i.)

Brush/roller

- For stripe coating and spot repair only

Recommended thinner

No thinner should be added

Cleaning solvent

THINNER 90-53 or THINNER 90-83

Notes:

- 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
400 µm (16.0 mils)	2.5 m ² /l (100 ft ² /US gal)
600 µm (24.0 mils)	1.7 m ² /l (67 ft ² /US gal)

Note: Maximum DFT when brushing: 150 µm (6.0 mils)

Measuring wet film thickness

- A difference is often obtained between the measured apparent WFT and the real applied WFT. This is due to the thixotropy and the surface tension of the paint, which retards the release of air, trapped in the paint film for some time
- Recommendation is to apply a WFT, which is equal to the specified DFT plus 60 µm (2.4 mils)

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Measuring dry film thickness

- Because of low initial hardness the DFT cannot be measured for some days (depending on ambient temperature) after application, due to the penetration of the measuring device into the paint film
- The DFT should be measured using a calibration foil of known thickness placed in between the coating and the measuring device

Overcoating interval for DFT up to 500 µm (20.0 mils)					
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)
itself, SIGMACOVER 555 and SIGMACOVER 456	Minimum	24 hours	16 hours	8 hours	4 hours
	Maximum exposed to direct sunshine	14 days	14 days	7 days	5 days
	Maximum NOT exposed to direct sunshine	22 days	22 days	14 days	10 days

Note: Surface should be dry and free from any contamination

Curing time for DFT up to 500 µm (20 mils)		
Substrate temperature	Dry to handle	Full cure
5°C (41°F)	36 hours	12 days
10°C (50°F)	24 hours	5 days
20°C (68°F)	12 hours	3 days
30°C (86°F)	6 hours	48 hours

Note: Although the paint is solvent free 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)	30 minutes
30°C (86°F)	20 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

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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.

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
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650

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