

# SIGMASHIELD™ 1200

## 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
  - Recognised by Lloyd's register as an abrasion resistant ice coating
  - Excellent abrasion and impact resistance
  - Resistant to well designed cathodic protection
  - Low coefficient of friction
  - Suitable for new construction and for maintenance/repair
  - Also suitable for tanks and other structures requiring abrasion resistance
  - Excellent resistance to crude oil up to 90°C (194°F)
  - Excellent water resistance
  - Good chemical resistance against a wide range of chemicals and solvents
  - Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
  - Reduced explosion risk and fire hazard
- 

## COLOR AND GLOSS LEVEL

- Light gray, dark gray, brown (other colors available on request)
  - Gloss
-

# SIGMASHIELD™ 1200

## 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. 97.0 g/kg max. 143.0 g/l (approx. 1.2 lb/US gal)
Recommended dry film thickness	400 - 500 µm (16.0 - 20.0 mils)
Theoretical spreading rate	2.5 m <sup>2</sup> /l for 400 µm (100 ft <sup>2</sup> /US gal for 16.0 mils) 2.0 m <sup>2</sup> /l for 500 µm (80 ft <sup>2</sup> /US gal for 20.0 mils)
Dry to touch	6 hours
Overcoating Interval	Minimum: 24 hours Maximum: 2 months
Full cure after	5 days
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 should be above 10°C (50°F)
- Substrate temperature during application and curing 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)
- No thinner should be added
- At lower temperature, the viscosity will be too high for spray application

### Induction time

None



**PPG Protective & Marine Coatings**

Bringing innovation to the surface.™

# SIGMASHIELD™ 1200

**Pot life**

1 hour at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

---

**Airless spray**

- Heavy-duty, single-feed airless spray equipment preferably 60:1 pump ratio and suitable high-pressure hoses

**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 <sup>2</sup> /l (100 ft <sup>2</sup> /US gal)
500 µm (20.0 mils)	2.0 m <sup>2</sup> /l (80 ft <sup>2</sup> /US gal)

---

## SIGMASHIELD™ 1200

Overcoating interval for DFT up to 500 µm (20.0 mils)				
Overcoating with...	Interval	10°C (50°F)	20°C (68°F)	30°C (86°F)
itself, SIGMACOVER 525 and SIGMACOVER 456	Minimum	36 hours	24 hours	16 hours
	Maximum exposed to direct sunshine	22 days	14 days	7 days
	Maximum NOT exposed to direct sunshine	3 months	2 months	1 month
SIGMADUR 550	Minimum	36 hours	24 hours	16 hours
	Maximum exposed to direct sunshine	14 days	7 days	4 days
	Maximum NOT exposed to direct sunshine	3 months	2 months	1 month

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
10°C (50°F)	30 hours	7 days
20°C (68°F)	16 hours	5 days
30°C (86°F)	10 hours	3 days

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)	1 hour
30°C (86°F)	45 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

# SIGMASHIELD™ 1200

## 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

## WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

## LIMITATIONS OF LIABILITY

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT. The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at [www.ppgpmc.com](http://www.ppgpmc.com). The English text of this sheet shall prevail over any translation thereof.

The PPG Logo, Bringing innovation to the surface., and all other trademarks herein are property of the PPG group of companies.



**PPG Protective &  
Marine Coatings**

Bringing innovation to the surface.™