

# New Guard Coatings Group

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# SIGMASHIELD™ 220

## DESCRIPTION

Two-component, reinforced high solids polyamine adduct cured epoxy primer

## PRINCIPAL CHARACTERISTICS

- General-purpose primer for coating systems for steel
- Good abrasion resistance
- Outstanding sea water resistance
- Excellent corrosion resistance
- Good resistance against chemically-polluted water
- Resistant to well designed/controlled cathodic protection

## COLOR AND GLOSS LEVEL

- Yellow/green
- 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	78 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 176.0 g/kg max. 262.0 g/l (approx. 2.2 lb/US gal)
Recommended dry film thickness	125 µm (5.0 mils)
Theoretical spreading rate	6.2 m <sup>2</sup> /l for 125 µm (250 ft <sup>2</sup> /US gal for 5.0 mils)
Dry to touch	4 hours
Overcoating Interval	Minimum: 3.5 hours Maximum: 14 days
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

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## RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

### Immersion exposure

- Steel; blast cleaned to ISO-Sa2½, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
- Steel with approved zinc silicate shop primer; sweep blasted to SPSS-Ss or powertool cleaned to SPSS-Pt3
- Surface must be dry and free from any contamination

### Atmospheric exposure conditions

- Steel; blast cleaned to ISO-Sa2 or ISO-Sa2½, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
- Steel; hydrojetted to VIS WJ2/3L
- Steel with approved shop primer; power tool cleaned to SPSS-Pt2
- 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 and curing should be at least 3°C (5°F) above dew point
- Relative humidity during application and curing should not exceed 85%

## SYSTEM SPECIFICATION

- ANTICORROSIVE SYSTEMS FOR UNDERWATER AND BOOTTOP - SYSTEM SHEET 3101
- SYSTEMS FOR BOOTTOP AND TOPSIDE - SYSTEM SHEET 3102
- SYSTEMS FOR DECKS - SYSTEM SHEET 3103
- SYSTEMS FOR CARGO HOLDS - SYSTEM SHEET 3107

## INSTRUCTIONS FOR USE

### Mixing ratio by volume: base to hardener 75:25 (3:1)

- The temperature of the paint should preferably be above 15°C (59°F), otherwise extra thinner may be required to obtain application viscosity
- Adding too much thinner results in reduced sag resistance and slower cure
- Thinner should be added after mixing the components

### Induction time

None

### Pot life

2 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life



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## Air spray

### **Recommended thinner**

THINNER 91-92

### **Volume of thinner**

5 - 10%, depending on required thickness and application conditions

### **Nozzle orifice**

1.5 - 3.0 mm (approx. 0.060 - 0.110 in)

### **Nozzle pressure**

0.2 - 0.4 MPa (approx. 2 - 4 bar; 29 - 58 p.s.i.)

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## Airless spray

### **Recommended thinner**

THINNER 91-92

### **Volume of thinner**

0 - 10%, depending on required thickness and application conditions

### **Nozzle orifice**

Approx. 0.53 - 0.69 mm (0.021 - 0.027 in)

### **Nozzle pressure**

15.0 MPa (approx. 150 bar; 2176 p.s.i.)

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## Brush/roller

- Only for touch-up and spot repair

### **Recommended thinner**

THINNER 91-92

### **Volume of thinner**

0 - 5%

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## Cleaning solvent

THINNER 90-53

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## ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
100 µm (4.0 mils)	7.8 m <sup>2</sup> /l (313 ft <sup>2</sup> /US gal)
125 µm (5.0 mils)	6.2 m <sup>2</sup> /l (250 ft <sup>2</sup> /US gal)

Note: Maximum DFT when brushing: 80 µm (3.1 mils)

Overcoating interval for DFT up to 150 µm (6.0 mils)						
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
epoxy coatings	Minimum	14 hours	7 hours	3.5 hours	2 hours	1.5 hours
	Maximum	28 days	28 days	14 days	7 days	4 days
polyurethanes	Minimum	22 hours	14 hours	10 hours	6 hours	4 hours
	Maximum	28 days	28 days	14 days	7 days	4 days

### Notes:

- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)
- Surface should be dry and free from any contamination

Curing time for DFT up to 150 µm (6.0 mils)			
Substrate temperature	Dry to handle	Service- water immersion	Full cure
5°C (41°F)	14 hours	10 days	17 days
10°C (50°F)	7 hours	7 days	14 days
20°C (68°F)	3.5 hours	5 days	7 days
30°C (86°F)	2 hours	4 days	5 days
40°C (104°F)	1.5 hours	3 days	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
10°C (50°F)	3 hours
20°C (68°F)	2 hours
30°C (86°F)	1 hour

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## SAFETY PRECAUTIONS

- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes
- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets

## 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

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