

# PPG SIGMASHIELD® 680

## DESCRIPTION

Two-component, epoxy anticorrosive primer, based upon pure epoxy technology

## PRINCIPAL CHARACTERISTICS

- Specialized for use under SIGMAGLIDE fouling release system
- Excellent anticorrosive properties and water resistance
- Good abrasion resistance
- Suitable for application and curing in a wide range of climatic conditions

## COLOR AND GLOSS LEVEL

- Gray, yellow/green and redbrown
- Low sheen

## BASIC DATA AT 20°C (68°F)

Data for mixed product	
<b>Number of components</b>	Two
<b>Mass density</b>	1.4 kg/l (11.7 lb/US gal)
<b>Volume solids</b>	60 ± 2%
<b>VOC (Supplied)</b>	Directive 2010/75/EU, SED: max. 287.0 g/kg max. 392.0 g/l (approx. 3.3 lb/US gal)
<b>Recommended dry film thickness</b>	150 µm (6.0 mils)
<b>Theoretical spreading rate</b>	6.0 m <sup>2</sup> /l for 100 µm (241 ft <sup>2</sup> /US gal for 4.0 mils)
<b>Dry to touch</b>	3 hours
<b>Full cure after</b>	7 days
<b>Shelf life</b>	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

- Previous coat must be sound, dry and free from any contamination
  - Surface must be free from grease, salts and any contamination
  - Steel; blast cleaned to ISO Sa2½, blasting profile 40 – 70 µm (1.6 – 2.8 mils) or power tool cleaned to ISO-St3
  - Shop primed steel; pretreated to SPSS Pt3
  - Coated steel; hydrojetted to VIS WJ2L (blasting profile 30 – 75 µm (1.2 – 3.0 mils))
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### Substrate temperature and application conditions

- Substrate temperature during application and curing should be between 5°C (41°F) and 40°C (104°F)
  - Substrate temperature during application and curing should be at least 3°C (37°F) above dew point
  - Relative humidity during application and curing should not exceed 85%
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## INSTRUCTIONS FOR USE

### Mixing ratio by volume: base to hardener 4:1

- The temperature of the mixed base and hardener should preferably be above 5°C (41°F), otherwise extra thinner may be required to obtain application viscosity
  - Thinner should be added after mixing the components
  - Adding too much thinner results in reduced sag resistance
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### Pot life

4 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**

0 - 15%, depending on required thickness and application conditions

#### **Nozzle orifice**

1.5 – 2.0 mm (approx. 0.060 – 0.079 in)

#### **Nozzle pressure**

0.3 - 0.4 MPa (approx. 3 - 4 bar; 44 - 58 p.s.i.)

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**Airless spray**

**Recommended thinner**

THINNER 91-92

**Volume of thinner**

0 - 15%, depending on required thickness and application conditions

**Nozzle orifice**

Approx. 0.53 – 0.74 mm (0.021 – 0.029 in)

**Nozzle pressure**

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

**Brush/roller**

**Recommended thinner**

No extra thinner is necessary

**Volume of thinner**

Up to 5% THINNER 91-92 can be added if desired

**ADDITIONAL DATA**

Overcoating interval for DFT up to 150 µm (6.0 mils)							
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
SIGMAGLIDE 790	Minimum	28 hours	24 hours	20 hours	12 hours	10 hours	8 hours
	Maximum	7 days	7 days	6 days	5 days	4 days	2 days
itself	Minimum	13 hours	6 hours	4 hours	3 hours	2 hours	1 hour
	Maximum	1 months	1 months	1 months	14 days	14 days	14 days

Note:

- Surface should be dry and free from any contamination



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Curing time for DFT up to 150 µm (6.0 mils)			
Substrate temperature	Dry to touch	Dry to handle	Full cure
5°C (41°F)	4 hours	8 hours	9 days
10°C (50°F)	3 hours	6 hours	7 days
15°C (59°F)	2 hours	4 hours	5 days
20°C (68°F)	2 hours	3 hours	4 days
30°C (86°F)	1 hour	2 hours	3 days
40°C (104°F)	1 hour	2 hours	2 days

Note:

- Adequate ventilation must be maintained during application and curing

Pot life (at application viscosity)	
Mixed product temperature	Pot life
5°C (41°F)	10 hours
10°C (50°F)	7 hours
15°C (59°F)	6 hours
20°C (68°F)	4 hours
30°C (86°F)	2 hours
40°C (104°F)	1 hour

## SAFETY PRECAUTIONS

- See Safety Data Sheet and product label for complete safety and precaution requirements
- 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

## WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective & 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

- Information sheet | Explanation of product data sheets



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## WARRANTY

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