SIGMAGUARD™ 603

DESCRIPTION

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

PRINCIPAL CHARACTERISTICS

- One-coat protection for maintenance or major refurbishment of ballast water tanks and crude oil tanks
- Tolerant to marginal surface preparation
- Good corrosion resistance
- Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
- Reduced explosion risk and fire hazard
- Good visibility due to light color

COLOR AND GLOSS LEVEL

- Offwhite, light gray
- Gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.3 kg/l (10.8 lb/US gal)
Volume solids	100%
VOC (Supplied)	Directive 2010/75/EC, SED: max. 111.0 g/kg max. 144.0 g/l (approx. 1.2 lb/US gal)
Recommended dry film thickness	300 µm (12.0 mils)
Theoretical spreading rate	3.3 m^2/l for 300 µm (134 ft^2/US gal for 12.0 mils)
Dry to touch	8 hours
Overcoating Interval	Minimum: 24 hours Maximum: 20 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

Substrate conditions

- Steel; blast cleaned to ISO-Sa2½, blasting profile 50 – 100 µm (2.0 – 4.0 mils)
- Steel; blast cleaned to ISO-Sa2 or power tool cleaned to ISO-St2 for good corrosion protection
- Coated steel; hydro jetted to VIS WJ2/3 L (blasting profile 50 – 100 µm (2.0 – 4.0 mils))
- Previous coat of approved coating must be dry and free from any contamination
- Pitted steel; blast cleaned to ISO-Sa2½ is recommended
- Suitable primer; SIGMACOVER 280
- Suitable for damp surfaces

Substrate temperature and application conditions

- Substrate temperature during application and curing should be above 5°C (41°F)
- There are no resistrictions regarding dew point temperature and relative humidity

SYSTEM SPECIFICATION

- SIGMAGUARD 603: 1 x 300 µm (12.0 mils)

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 4:1

- The temperature of the mixed base and hardener should preferably 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

0 minute

Note:

- No induction time required

Pot life

1 hour at 20°C (68°F)

Note:

- See ADDITIONAL DATA – Pot life

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Airless spray

- Use 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
- In-line heating or insulated hoses may be necessary to avoid cooling down of paint in hoses at low air temperature
- Application with 45:1 airless spray equipment is possible, provided in-line, heated high-pressure hoses are used
- Length of hoses should be as short as possible

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.53 – 0.64 mm (0.021 – 0.025 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.)

Note:

- In case of using 45:1 airless spray equipment, the paint must be heated to approximately 30°C (86°F) in order to obtain the right application viscosity

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

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ADDITIONAL DATA

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)

Maximum dry film thickness

- The DFT should be measured using a calibration foil of known thickness placed in between the coating and the measuring device
- Because of low initial hardness the DFT cannot be measured within some days, due to the penetration of the measuring device into the soft paint film

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
300 µm (12.0 mils)	3.3 m^2/l (134 ft^2/US gal)
400 µm (16.0 mils)	2.5 m^2/l (100 ft^2/US gal)

Note:

- Maximum DFT when brushing: 200 µm (8.0 mils)

Overcoating interval for DFT up to 300 µm (12.0 mils)					
Overcoating with...	**Interval**	**5°C (41°F)**	**10°C (50°F)**	**20°C (68°F)**	**30°C (86°F)**
itself	Minimum	3.5 days	36 hours	24 hours	16 hours
	Maximum	20 days	20 days	20 days	14 days

Note:

- Surface should be dry and free from any contamination

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Curing time for DFT up to 300 µm (12.0 mils)			
Substrate temperature	**Dry to handle**	**Service- water immersion**	**Full cure**
5°C (41°F)	60 hours	10 days	15 days
10°C (50°F)	30 hours	5 days	7 days
20°C (68°F)	16 hours	4 days	5 days
30°C (86°F)	10 hours	48 hours	3 days

Note:

- Adequate ventilation must be maintained during application and curing

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

- See Safety Data Sheet and product label for complete safety and precaution requirements
- 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
- No solvent present; however, spray mist is not harmless, a fresh air mask should be used during spraying
- Ventilation should be provided in confined spaces to maintain good visibility

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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