PPG SIGMACOVER™ 456

DESCRIPTION

Two-component, high-build, polyamide-cured recoatable epoxy coating

PRINCIPAL CHARACTERISTICS

- General-purpose epoxy buildcoat or finish in protective coating systems, for steel and concrete structures exposed to atmospheric land or marine conditions
- Easy application, both by airless spray and brush
- Cures even at temperatures down to -10°C (14°F)
- A high relative humidity (maximum 95%) during application and curing does not influence the quality of the coating
- Good adhesion on most aged, sound alkyd, chlorinated rubber and epoxy coatings
- Can be recoated with various two-component and conventional coatings, even after long weathering periods
- Resistant to water and splash of mild chemicals
- Excellent corrosion resistance
- Tough, with long-term flexibility

COLOR AND GLOSS LEVEL

- Standard and custom colors
- Semi-gloss

Note:

- Epoxy coatings will characteristically chalk and fade upon exposure to sunlight

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.4 kg/l (11.7 lb/US gal)
Volume solids	65 ± 2%
VOC (Supplied)	Directive 2010/75/EU, SED: max. 250.0 g/kg max. 344.0 g/l (approx. 2.9 lb/US gal)
Recommended dry film thickness	75 - 150 µm (3.0 - 6.0 mils) depending on system
Theoretical spreading rate	6.5 m^2/l for 100 µm (261 ft^2/US gal for 4.0 mils)
Dry to touch	2 hours
Overcoating Interval	Minimum: 3 hours Maximum: Unlimited
Full cure after	4 days
Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 months when stored cool and dry

Notes:

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- 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

- Compatible previous coat must be dry and free from any contamination

Substrate temperature and application conditions

- Substrate temperature during application and curing down to -10°C (14°F) is acceptable; provided the substrate is free from ice and dry
- 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 82:18 (4.56:1)

- Adding too much thinner results in reduced sag resistance
- The temperature of the mixed base and hardener should be above 10°C (50°F), otherwise extra thinner may be required to obtain application viscosity
- Thinner should be added after mixing the components

Pot life

5 hours at 20°C (68°F)

Note:

- See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner

THINNER 91-92

Volume of thinner

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

Nozzle orifice

2.0 – 3.0 mm (approx. 0.079 – 0.110 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 - 5%, depending on required thickness and application conditions

Nozzle orifice

Approx. 0.48 – 0.58 mm (0.019 – 0.023 in)

Nozzle pressure

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

Brush/roller

Recommended thinner

THINNER 91-92

Volume of thinner

0 – 5%

Cleaning solvent

- THINNER 90-53

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
75 µm (3.0 mils)	8.7 m^2/l (348 ft^2/US gal)
100 µm (4.0 mils)	6.5 m^2/l (261 ft^2/US gal)
150 µm (6.0 mils)	4.3 m^2/l (174 ft^2/US gal)

Note:

- Maximum DFT when brushing: 60 µm (2.4 mils)

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Overcoating interval for DFT up to 150 µm (6.0 mils)							
Overcoating with...	**Interval**	**-5°C (23°F)**	**5°C (41°F)**	**10°C (50°F)**	**20°C (68°F)**	**30°C (86°F)**	**40°C (104°F)**
SIGMADUR 520 and SIGMADUR 550	Minimum	3 days	24 hours	16 hours	8 hours	5 hours	3 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
PPG VIKOTE 56 and SIGMARINE 48	Minimum	3 days	24 hours	16 hours	8 hours	5 hours	3 hours
	Maximum	17 days	14 days	10 days	7 days	4 days	48 hours
SIGMACOVER 435 and SIGMACOVER 456	Minimum	36 hours	10 hours	4 hours	3 hours	2 hours	2 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

Notes:

- Surface should be dry and free from any contamination
- Color of SIGMACOVER 456 should be adapted to the color of PPG VIKOTE 56 or SIGMARINE 48
- Finishes require a corresponding undercoat
- SIGMACOVER 456 should not be overcoated with coal tar epoxy coatings

Curing time for DFT up to 150 µm (6.0 mils)		
Substrate temperature	**Dry to handle**	**Full cure**
-10°C (14°F)	24 - 48 hours	20 days
-5°C (23°F)	24 - 30 hours	14 days
5°C (41°F)	18 hours	8 days
10°C (50°F)	12 hours	6 days
20°C (68°F)	6 hours	4 days
30°C (86°F)	4 hours	3 days
40°C (104°F)	3 hours	48 hours

Notes:

- Adequate ventilation must be maintained during application and curing
- In exceptional cases SIGMACOVER 456 may be applied at lower substrate temperatures (down to -15°C (5°F)) provided that the surface is free from ice and other contamination. In such cases special care must be taken to avoid thick film application as this may lead to checking/crazing or solvent entrapment. It should be clear that application at lower temperatures will require additional thinning to obtain application viscosity, however this will affect the sag resistance of the applied coating and can induce solvent retention.Optimal curing and designed product properties will only be achieved when minimum required substrate temperature is reached

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Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
10°C (50°F)	12 hours
20°C (68°F)	5 hours
30°C (86°F)	4 hours
40°C (104°F)	2 hours

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

- Guide | PPG SIGMACARE PLUS | Online guide to maintenance at sea
- Information sheet | Explanation of product data sheets

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