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
- ACQPA 22381-certified

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

PPG SIGMACOVER™ 456

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

- 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

PPG SIGMACOVER™ 456

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.)

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

PPG SIGMACOVER™ 456

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)

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 Maximum	3 days Unlimited	24 hours Unlimited	16 hours Unlimited	8 hours Unlimited	5 hours Unlimited	3 hours Unlimited
PPG VIKOTE 56 and SIGMARINE ONE 648	Minimum Maximum	3 days 17 days	24 hours 14 days	16 hours 10 days	8 hours 7 days	5 hours 4 days	3 hours 48 hours
itself and SIGMACOVER 456 MIO	Minimum Maximum	36 hours Unlimited	10 hours Unlimited	4 hours Unlimited	3 hours Unlimited	2 hours Unlimited	2 hours 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 ONE 648
- SIGMACOVER 456 should not be overcoated with coal tar epoxy coatings

PPG SIGMACOVER™ 456

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

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.

PPG SIGMACOVER™ 456

REFERENCES

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

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. The English text of this sheet shall prevail over any translation thereof.

The PPG logo, and all other PPG marks are property of the PPG group of companies. All other third-party marks are property of their respective owners.