



SIGMACOVER 456

5 pages

April 2012
Revision of August 2010

Description

two component high build polyamide cured recoatable epoxy coating

PRINCIPAL CHARACTERISTICS

- general purpose epoxy build coat 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
- a high relative humidity max. 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 durability
- tough, with long term flexibility

COLOURS AND GLOSS

white and various other colours (see also the SigmaCare Shade Card of PPG Protective & Marine Coatings) – semigloss

BASIC DATA AT 20 °C

(1 g/cm³ = 8.35 lb/US gal; 1 m²/l = 40.7 ft²/US gal)

(data for mixed product)

Mass density	1.4 g/cm ³
Volume solids	65% ± 2%
VOC (Directive 1999/13/EC, SED)	max. 250 g/kg (Directive 1999/13/EC, SED)
VOC (UK PG 6/23(92) appendix 3)	max. 344 g/l (approx. 2.9 lb/gal)
Recommended dry film thickness	75 - 150 µm depending on system
Theoretical spreading rate	6.5 m ² /l for 100 µm 8.7 m ² /l
Touch dry after	2 hours at 20 °C
Overcoating interval	min. 3 hours * max. unlimited
Full cure after	4 days * at 20 °C

(data for components)

Shelf life (cool and dry place)	at least 24 months * see additional data
---------------------------------	---

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- previous coat; dry and free from any contamination
- during application and curing a substrate temperature down to -10°C is acceptable provided substrate is dry and free from ice
- substrate temperature should be at least 3°C above dew point

SYSTEM SPECIFICATION

marine

system sheets: 3102, 3103, 3104, 3105

SIGMACOVER 456

April 2012

INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 82 : 18

- too much solvent results in reduced sag resistance
- the temperature of the mixed base and hardener should preferably be above 10°C, otherwise extra solvent may be required to obtain application viscosity
- thinner should be added after mixing the components

Induction time

none

Pot life

5 hours at 20 °C

*see additional data

AIR SPRAY

Recommended thinner

Thinner 91-92

Volume of thinner

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

Nozzle orifice

2 - 3 mm

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 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

Film thickness and spreading rate

theoretical spreading rate m ² /l	8.7	6.5	4.3
dft in µm	75	100	150

Maximum dft when brushing:

60 µm

SIGMACOVER 456

April 2012

Overcoating table for dft up to 150 µm

for Sigma Vikote 46,
SigmaDur 550, SigmaDur 520 and
Sigmarine 40

for SigmaCover 435,
SigmaCover 456

for Sigma Vikote 56 *
and Sigmarine 48 *

substrate temperature	-5°C	5°C	10°C	20°C	30°C	40°C
minimum interval	72 hours	24 hours	16 hours	8 hours	5 hours	3 hours
maximum interval	no limitation					
minimum interval	36 hours	10 hours	4 hours	3 hours	2 hours	2 hours
maximum interval	no limitation					
maximum interval	17 days	14 days	10 days	7 days	4 days	2 days

- finishes require a corresponding undercoat
- surface should be dry and free from chalking and contamination
- SigmaCover 456 should not be overcoated with coal tar epoxy coatings
- surface should be dry and free from chalking and contamination

* colour of SigmaCover 456 should be adapted to the colour of Sigma Vikote 56 or Sigmarine 48

Curing

Curing table for dft up to 150 µm

substrate temperature	dry to handle	full cure
-10°C	24 - 48 hours	20 days
-5°C	24 - 30 hours	14 days
0°C	18 - 24 hours	10 days
5°C	18 hours	8 days
10°C	12 hours	6 days
15°C	8 hours	5 days
20°C	6 hours	4 days
30°C	4 hours	3 days
40°C	3 hours	2 days

- adequate ventilation must be maintained during application and curing (please refer to sheets 1433 and 1434)

In exceptional cases SigmaCover 456 may be applied at lower substrate temperatures (down to -15°C) 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.

SIGMACOVER 456

April 2012

Pot life (at application viscosity)

10 °C	12 hours
20 °C	5 hours
30 °C	4 hours
40 °C	2 hours

Worldwide availability

Whilst it is always the aim of Sigma Coatings to supply the same product on a worldwide basis, 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

Explanation to product data sheets	see information sheet 1411
Safety indications	see information sheet 1430
Safety in confined spaces and health safety	
Explosion hazard - toxic hazard	see information sheet 1431
Safe working in confined spaces	see information sheet 1433
Directives for ventilation practice	see information sheet 1434
Conversion tabels	see information sheet 1410
Surface preparation of concrete (floors)	see information sheet 1496
Relative humidity - substrate temperature - air temperature	see information sheet 1650

SAFETY PRECAUTIONS

- for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets
- this is a solvent borne paint and care should be taken to avoid inhalation of spray mist or vapour as well as contact between the wet paint and exposed skin or eyes

SIGMACOVER 456

April 2012

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 data sheet shall prevail over any translation thereof.

179073	PDS white	7466 7000002200
--------	--------------	--------------------