

SIGMALINE™ 2000

DESCRIPTION

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

PRINCIPAL CHARACTERISTICS

- One-coat system direct to metal for pipe externals
- Suitable for e.g. bell holing jobs
- Resistant to well designed cathodic protection
- Glossy and smooth appearance
- Can be applied by heavy-duty, twin-feed, hot, airless spray equipment
- Can be applied at a substrate temperature of 90°C (194°F)
- Reduced explosion risk and fire hazard
- Meets the requirements of EN10289

COLOR AND GLOSS LEVEL

- Redbrown
- Gloss

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 | 100% |
| VOC (Supplied) | Directive 2010/75/EU, SED: max. 108.0 g/kg max. 146.0 g/l (approx. 1.2 lb/US gal) China GB 30981-2020 (tested) 39.0 g/l (approx. 0.3 lb/gal) |
| Recommended dry film thickness | 600 - 1500 µm (24.0 - 60.0 mils) depending on system |
| Theoretical spreading rate | 1.7 m²/l for 600 µm (67 ft²/US gal for 24.0 mils) |
| Dry to touch | 6 hours |
| Overcoating Interval | Minimum: 24 hours Maximum: 2 months |
| 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

SIGMALINE™ 2000

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; blast cleaned to a minimum of ISO-Sa2½, blasting profile 50 – 100 µm (2.0 – 4.0 mils)

Substrate temperature

- Substrate temperature during application and curing should be above 5°C (41°F)
- 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 80:20 (4:1)

- When mixing, the temperature of the base and hardener should 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

None

Pot life

1 hour at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

Airless spray

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.53 mm (0.021 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.)

Notes:

- 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
- Length of hoses should be as short as possible

SIGMALINE™ 2000

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

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

ADDITIONAL DATA

| Spreading rate and film thickness | |
|-----------------------------------|--|
| DFT | Theoretical spreading rate |
| 600 µm (24.0 mils) | 1.7 m ² /l (67 ft ² /US gal) |
| 1000 µm (40.0 mils) | 1.0 m ² /l (40 ft ² /US gal) |
| 1500 µm (60.0 mils) | 0.7 m ² /l (27 ft ² /US gal) |

Note: Maximum DFT when brushing: 150 µm (6.0 mils)

Measuring wet film thickness

- A deviation is often obtained between the measured apparent WFT and the real applied WFT
- 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

- 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
- The DFT should be measured using a calibration foil of known thickness placed in between the coating and the measuring device

| Overcoating interval for DFT up to 600 µm (24.0 mils) | | | | | |
|---|----------|------------|-------------|-------------|-------------|
| Overcoating with... | Interval | 5°C (41°F) | 10°C (50°F) | 20°C (68°F) | 30°C (86°F) |
| itself for repair only | Minimum | 3.5 days | 36 hours | 24 hours | 12 hours |
| | Maximum | 3 months | 3 months | 2 months | 1 month |

Note: Surface should be dry and free from any contamination

SIGMALINE™ 2000

Curing time for DFT up to 600 µm (24.0 mils)

| Substrate temperature | Dry to handle | Full cure |
|-----------------------|---------------|-----------|
| 5°C (41°F) | 60 hours | 15 days |
| 10°C (50°F) | 30 hours | 7 days |
| 20°C (68°F) | 16 hours | 5 days |
| 30°C (86°F) | 10 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 |
| 40°C (104°F) | 20 minutes |

Notes:

- Due to exothermic reaction, temperature during and after mixing may increase
- It is recommended to use plural airless equipment due to the short pot life when paint temperature is above 40°C (104°F)

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
- Ventilation should be provided in confined spaces to maintain good visibility

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and 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

- EXPLANATION TO PRODUCT DATA SHEETS

INFORMATION SHEET

1411

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.



SIGNALINE™ 2000

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.

