

SIGMALINE 2500

(SIGMALINING FDP 67)

4 pages

February 2006
Revision of September 2005**DESCRIPTION**

two component solvent free amine cured phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- one coat system direct to metal for pipe externals
- excellent resistance to cathodic protection
- glossy and smooth appearance
- reduced explosion risk and fire hazard
- fast curing especially when applied to preheated substrates
- can be applied to rotating pipes at a dry film thickness (dft) up to 600 µm at a substrate temperature up to 90°C
- approved to Saudi Aramco APCS 113

COLOURS AND GLOSS

dark brown - gloss

BASIC DATA AT 20°C(1 g/cm³ = 8.25 lb/US gal; 1 m²/l = 40.7 ft²/US gal)
(data for mixed product)

Mass density

1.5 g/cm³

Volume solids

100%

VOC (supplied)

max. 83 g/kg (Directive 1999/13/EC, SED)

max. 125 g/l (approx. 1.0 lb/gal)

see information sheet 1411

Recommended dry film
thickness

600 µm depending on system

Theoretical spreading rate

1.7 m²/l for 600 µm *

Touch dry after

30 min. at 60°C

Overcoating interval

min. equal to dry to handle time (see curing table)

max. 2 days (external exposure) or 1 month (in-shop exposure)

Full cure after

3 hours at 60°C

Gellation time

4 - 6 min. at 50°C

(data for components)

Shelf life (cool and dry place)

at least 6 months

Flash point

base and hardener above 65°C

* see additional data

**RECOMMENDED
SUBSTRATE CONDITIONS
AND TEMPERATURES**

- steel; blast cleaned to a minimum of ISO-Sa2½, blasting profile (R_z) 50 - 100 µm
- substrate temperature should be above 15°C and at least 3°C above dew point during application and curing
- the recommended substrate temperature should be preferably between 40°C and 60°C
- these recommended substrate temperatures ensure good curing and appearance

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INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 4 : 1

- application with twin feed hot airless spray equipment

Induction time

none

Pot life

5 min. at 50°C *
* see additional data

AIRLESS SPRAY

- twin feed hot airless spray
- pumping viscosity is achieved at 40°C - 60°C
- temperature in the mixing unit must be between 40°C and 70°C

Recommended thinner

no thinner should be added

Nozzle orifice

approx. 0.48 - 0.78 mm (= 0.019 - 0.031 in) depending on required production speed and dft

Nozzle pressure

at 40°C (paint temperature) min. 19 MPa (= approx. 190 bar; 2700 p.s.i.)
at 60°C (paint temperature) min. 15 MPa (= approx. 150 bar; 2100 p.s.i.)

BRUSH/ROLLER

for touch up and spot repair only

Recommended thinner

no thinner should be added

CLEANING SOLVENT

Sigma thinner 90-83 (preferred) or Sigma thinner 90-53

Cleaning Procedures of the spray equipment:

- all equipment used for application must be cleaned immediately after use
- paint inside the spraying equipment must be removed before the pot life time has been expired

SAFETY PRECAUTIONS

for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets

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

ADDITIONAL DATA

Film thickness and spreading rate

| | |
|--|-----|
| theoretical spreading rate m ² /l | 1.7 |
| dft in µm | 600 |

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measuring wet film thickness

- a deviation 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

measuring 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 table with SigmaLine 2500 (spot repair)

| | | | |
|-----------------------|---------|----------|---------|
| substrate temperature | 20°C | 30°C | 40°C |
| minimum interval | 3 hours | 1.5 hour | 1 hour |
| maximum interval * | 1 month | 1 month | 1 month |

* when exposed to sunlight maximum interval is 2 days for all mentioned temperatures

- surface should be dry and free from any contamination

Curing table

| substrate temperature | dry to handle | full cure |
|-----------------------|---------------|-----------|
| 20°C | 3 hours | 2 days |
| 30°C | 90 min. | 1 day |
| 40°C | 60 min. | 12 hours |
| 50°C | 40 min. | 6 hours |
| 60°C | 30 min. | 3 hours |
| 70°C | 20 min. | 2 hours |
| 90°C | 10 min. | 1 hour |

- although the paint is solvent free adequate ventilation must be maintained during application and curing (please refer to sheet 1433 and 1434)

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Pot life (at application viscosity)

| | |
|------|---------|
| 20°C | 20 min. |
| 50°C | 5 min. |
| 60°C | 4 min. |
| 70°C | 3 min. |

- for touch up due to exothermic reaction, temperature during and after mixing may increase

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 |
| Cleaning of steel and removal of rust | see information sheet 1490 |

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

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