

**SIGMALINE 403****(SIGMALINING FLOWCOAT 03)**

4 pages

September 2005  
Revision of March 2005**DESCRIPTION**

two component polyamine cured epoxy flow coating

**PRINCIPAL CHARACTERISTICS**

- reduces the frictional resistance of the inside of steel pipes for the transportation of purified natural gas
- good anticorrosive properties
- meets API specification RP 5L2 third edition

**COLOURS AND GLOSS**

redbrown - gloss

**BASIC DATA AT 20°C**(1 g/cm<sup>3</sup> = 8.25 lb/US gal; 1 m<sup>2</sup>/l = 40.7 ft<sup>2</sup>/US gal)  
(data for mixed product)

Mass density

1.3 g/cm<sup>3</sup>

Volume solids

54 ± 2%

VOC (supplied)

max. 312 g/kg (Directive 1999/13/EC, SED)  
max. 406 g/l (approx. 3.4 lb/gal)Recommended dry film  
thickness

40 - 60 µm, depending on surface preparation

Theoretical spreading rate

13.5 m<sup>2</sup>/l for 40 µm, 9.0 m<sup>2</sup>/l for 60 µm \*

Touch dry after

45 min. \*

Overcoating interval

min. 8 hours \*  
max. 2 months \*

Full cure after

7 days \*

(data for components)

Shelf life (cool and dry place)

at least 12 months

Flash point

base 26°C, hardener 26°C  
\* see additional data**RECOMMENDED  
SUBSTRATE CONDITIONS  
AND TEMPERATURES**

- steel; blast cleaned to ISO-Sa2½ or chemically cleaned according to sheet 1492
- substrate temperature should be above 5°C and at least 3°C above dew point during application and curing
- during the curing time coated pipes should be protected against adverse weather conditions such as condensation, rain, fog and snow

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## INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 75 : 25

- the temperature of the mixed base and hardener should preferably be above 5°C, otherwise extra solvent may be required to obtain application viscosity
- too much solvent results in reduced sag resistance and slower cure
- thinner should be added after mixing the components

Induction time

none

Pot life

8 hours at 20°C \*  
\* see additional data

## AIRLESS SPRAY

Recommended thinner

Sigma thinner 21-06

Volume of thinner

0 - 5%, depending on required thickness and application conditions

Nozzle orifice

approx. 0.43 - 0.57 mm (= 0.017 - 0.023 in)

Nozzle pressure

16 - 20 MPa (= approx. 160 - 200 bar; 2280 - 2860 p.s.i.)

## BRUSH/ROLLER

for touch up and spot repair only

Recommended thinner

Sigma thinner 21-06

Volume of thinner

0 - 3%

## CLEANING SOLVENT

Sigma thinner 90-53

## SAFETY PRECAUTIONS

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

this is a solvent based 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

## ADDITIONAL DATA

### *Film thickness and spreading rate*

theoretical spreading rate m <sup>2</sup> /l	13.5	9
dft in µm	40	60

### *Overcoating table*

substrate temperature	10°C	20°C	30°C	40°C	50°C
minimum interval	24 hours	8 hours	4 hours	3 hours	2 hours
maximum interval	2 months	2 months	1 month	1 month	1 month

- surface should be dry and free from chalking and contamination

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***Curing table (at 60 µm) for pipes at ambient temperatures***

substrate temperature	touch dry	dry to handle	full cure
5°C	3 hours	2 days	30 days
10°C	2 hours	1 day	20 days
15°C	1.5 hour	12 hours	12 days
20°C	1 hour	8 hours	7 days
25°C	45 min.	6 hours	5 days
30°C	30 min.	4 hours	4 days

***Curing table (at 60 µm) for pipes preheated to 45°C, and stored at ambient temperatures***

ambient temperature	touch dry	dry to handle	full cure
5°C	40 min.	24 hours	21 days
10°C	30 min.	12 hours	14 days
15°C	20 min.	6 hours	7 days
20°C	15 min.	4 hours	5 days
25°C	15 min.	3 hours	4 days
30°C	15 min.	2 hours	3 days

- adequate ventilation must be maintained during application and curing (please refer to sheet 1433 and 1434)
- during the curing period precautions must be taken to avoid contact of the coating with moisture, otherwise blushing may occur

***Pot life (at application viscosity)***

15°C	10 hours
20°C	8 hours
25°C	7 hours
30°C	5 hours
35°C	3 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.

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## 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
Surface preparation of steel pipes and fittings -	
Shop application	see information sheet 1492

## LIMITATION OF LIABILITY

The information in this data sheet is based upon laboratory tests we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the products made by Sigma Coatings, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge are reliable. The products and information are designed for users having the requisite knowledge and industrial skills and it is the end-user's responsibility to determine the suitability of the product for its intended use.

Sigma Coatings has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Sigma Coatings does therefore not accept any liability arising from loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The data contained herein are liable to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues and it is therefore the user's responsibility to ensure that this sheet is current prior to using the product.

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

DS	7603
123868	base
123870	hardener