

SIGMASHIELD 1200
(SIGMA NOVASHIELD)

4 pages

December 2007
Revision of February 2007

DESCRIPTION

two component abrasion resistant solvent free amine cured phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- single coat system designed for under water hull of ice going and ice breaking vessels
- recognised by Lloyd's register as an abrasion resistant ice coating
- excellent abrasion and impact resistance
- resistant to well designed cathodic protection
- low co-efficient of friction
- suitable for new construction or maintenance/repair
- also suitable for tanks and other structures requiring abrasion resistance
- excellent resistance to crude oil up to 194°F (90°C)
- excellent water resistance
- good chemical resistance against a wide range of chemicals and solvents
- can be applied by heavy duty single feed airless spray equipment (60:1)

COLORS AND GLOSS

light grey, dark grey, brown (other colours on request) - gloss

BASIC DATA AT 68°F

(8.25 lb/US gal = 1 g/cm³; 40.7 ft²/US gal = 1 m²/l)
(data for mixed product)

Mass density 12.52 lbs/gal (1.5 g/cm³)
 Solids content 100%
 VOC (supplied - EPA 24) max. 97 g/kg (Directive 1999/13/EC, SED)
 max. 1.2 lb/gal (approx. 143 g/l)
 see information sheet 1411
 Recommended dry film thickness 16 - 20 mils (400 - 500 µm)
 Theoretical spreading rate 102 ft²/gal (2.5 m²/l) for 16 mils (400 µm),
 81 ft²/gal (2.0 m²/l) for 20 mils (500 µm) *
 Touch dry after 6 hours
 Overcoating interval min. 24 hours *
 max. 2 months *
 Full cure after 5 days *

(data for components)

Shelf life (min. 50°F (10°C), dry place) at least 12 months
 * see additional data

**RECOMMENDED
SUBSTRATE CONDITIONS
AND TEMPERATURES**

- steel; blast cleaned to a minimum of SSPC SP10/NACE 2 (ISO-Sa2½), blasting profile (R_z) 2 - 4 mils (50 - 100 µm)
- substrate temperature should be above 50°F (10°C) and at least 5°F (3°C) above dew point during application and curing



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INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 80 : 20

- when mixing the temperature of the base and hardener should be at least 68°F (20°C)
- 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 68°F (20°C) *

* see additional data

AIRLESS SPRAY

heavy duty single feed airless spray equipment with a minimum of 60:1 pump ratio and suitable high pressure hoses

Recommended thinner

no thinner should be added

Nozzle orifice

approx. 0.021" inch (= 0.53 mm)

Nozzle pressure

at 68°F (20°C) (paint temperature) min. 4000 p.s.i.

(= approx. 28 MPa or 280 bar)

at 86°F (30°C) (paint temperature) min. 3000 p.s.i.

(= approx. 22 MPa or 220 bar)

BRUSH/ROLLER

for stripe coating and spot repair only

Recommended thinner

no thinner should be added

CLEANING SOLVENT

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

- all application equipment 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 ft ² / gal (m ² /l)	102 (2.5)	81 (2.0)	69 (1.7)
dft in mil (µm)	16 (400)	20 (500)	24 (600)

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overcoating table with itself

substrate temperature	50°F (10°C)	68°F (20°C)	86°F (30°C)
minimum interval	36 hours	24 hours	16 hours
maximum interval when not exposed to direct sunshine	3 months	2 months	1 month
maximum interval when exposed to direct sunshine	22 days	14 days	10 days

- surface should be dry and free from any contamination

Curing table

substrate temperature	dry to handle	full cure
50°F (10°C)	30 hours	7 days
68°F (20°C)	16 hours	5 days
86°F (30°C)	10 hours	3 days

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

Pot life (at application viscosity)

68°F (20°C)	60 min.
86°F (30°C)	45 min.

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

Worldwide availability

Whilst it is always the aim of SigmaKalon Marine & Protective 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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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 Sigma Coatings products made by SigmaKalon Marine & Protective 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.

SigmaKalon Marine & Protective 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. SigmaKalon Marine & Protective Coatings therefore does 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.

In the event of any disparity or dispute in the wording of this document, the original English text shall prevail.

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