New Guard Coatings Group

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The information herewith is given with the best of New Guard Coatings Group knowledge.

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This information is not exhaustive and it is the user's responsibility to ensure that this data sheet is the most current by contacting their local New Guard Coatings Group branch prior to using the coating/product.

SIGMASHIELD 1200 LT

4 pages

October 2009
Revision of December 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 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)
- cures at temperatures down to +5°C
- reduced explosion risk and fire hazard

COLOURS AND GLOSS

black - gloss

BASIC DATA AT 10°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. 92 g/kg (Directive 1999/13/EC, SED) max. 136 g/l (approx. 1.1 lb/gal) see information sheet 1411
Recommended dry film thickness	400 - 500 µm
Theoretical spreading rate	2.5 m²/l for 400 µm, 2 m²/l for 500 µm *
Touch dry after	8 hours
Overcoating interval	min. 24 hours * max. 22 days *
Full cure after	5 days *
	(data for components)
Shelf life (cool and dry place)	at least 12 months

* see additional data

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- steel; blast cleaned to a minimum of ISO-Sa2½, blasting profile 50 - 100 µm
- substrate temperature should be above 5°C and at least 3°C above dew point during application and curing
- dry and free from any contamination

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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 20°C
- at lower temperature the viscosity will be too high for spray application
- no thinner should be added

Induction time: none

Pot life: 30 minutes at 20°C *
* see additional data

AIRLESS SPRAY

- twin feed hot airless spray
- heavy duty single feed airless spray equipment with a minimum of 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

Recommended thinner: no thinner should be added
Nozzle orifice: approx. 0.53 mm (= 0.021 in)
Nozzle pressure: at 20°C (paint temperature) min. 28 MPa (= approx. 280 bar; 4000 p.s.i.)
at 30°C (paint temperature) min. 22 MPa (= approx. 220 bar; 3000 p.s.i.)

BRUSH/ROLLER
Recommended thinner: for stripe coating and spot repair only
no thinner should be added

CLEANING SOLVENT

Thinner 90-83 (preferred) or 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 m²/l	2.5	2.0
dft in µm	400	500

max. dft when brushing: 150 µm

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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 for some days (depending on ambient temperature) after application due to the penetration of the measuring device into the 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 for SigmaShield 1200 LT for dft up to 500 µm

	substrate temperature	5°C	10°C	20°C	30°C
	minimum interval	36 hours	24 hours	12 hours	6 hours
with itself	maximum interval when **not** exposed to direct sunshine	22 days	22 days	14 days	10 days
with itself, SigmaCover 525 and SigmaCover 456	maximum interval when exposed to direct sunshine	14 days	14 days	7 days	5 days

- surface should be dry and free from any contamination

Curing table for dft up to 500 µm

substrate temperature	dry to handle	full cure
5°C	48 hours	12 days
10°C	24 hours	5 days
20°C	12 hours	3 days
30°C	6 hours	2 days

- 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	30 min.
30°C	20 min.

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

Worldwide availability

Whilst it is always the aim of PPG Protective & Marine 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

	PDS	7746
241652	black	8000002200