

**SIGMASHIELD 460****(SIGMA GLASSFLAKE)**

4 pages

September 2005  
Revision of January 2003

<b>DESCRIPTION</b>	two component high solids glassflake reinforced tar free epoxy coating	
<b>PRINCIPAL CHARACTERISTICS</b>	<ul style="list-style-type: none"> <li>– excellent abrasion and impact resistance</li> <li>– long term protection at areas subject to heavy wear and tear</li> <li>– excellent resistance to corrosion</li> <li>– very low water permeability, due to glassflake barrier</li> <li>– resistant to splash and spillage of a wide range of chemicals</li> <li>– application and curing at temperatures down to 5°C</li> </ul>	
<b>COLOURS AND GLOSS</b>	black (other (light) colours on request) - gloss	
<b>BASIC DATA AT 20°C</b>	(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	1.5 g/cm <sup>3</sup>	
Volume solids	84 ± 2%	
VOC (supplied)	max. 165 g/kg (Directive 1999/13/EC, SED) max. 246 g/l (approx. 2.0 lb/gal)	
Recommended dry film thickness	400 µm	
Theoretical spreading rate	2.1 m <sup>2</sup> /l for 400 µm *	
Touch dry after	3 hours	
Overcoating interval	min. 16 hours * max. 28 days *	
Full cure after	5 days *	
	(data for components)	
Shelf life (cool and dry place)	at least 12 months	
Flash point	base 26°C, hardener 29°C	
<b>RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES</b>	<ul style="list-style-type: none"> <li>– steel; blast cleaned to ISO-Sa2½, blasting profile (R<sub>z</sub>) 50 - 100 µm, followed by SigmaShield 220 (dft of 100 µm) or SigmaCover 280 (dft of 50 µm), dry and free from any contamination</li> <li>– substrate temperature should be at least 5°C and at least 3°C above dew point during application and curing</li> </ul>	
<b>SYSTEM SPECIFICATION</b>	marine	system sheets 3101, 3102

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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 15°C, otherwise extra solvent may be required to obtain application viscosity
- too much solvent results in reduced sag resistance and slower cure
- very good mechanical mixing of base and hardener is essential
- thinner should be added after mixing the components
- filters should be removed from spray equipment

Induction time

none

Pot life

1.5 hours at 20°C \*

\* see additional data

## AIRLESS SPRAY

Recommended thinner

Sigma thinner 91-92

Volume of thinner

0 - 5% for dft of about 400 µm

Nozzle orifice

approx. 0.53 - 0.79 mm (= 0.021 - 0.031 in)

Nozzle pressure

19 - 22.5 MPa (= approx. 190 - 225 bar; 2700 - 3200 p.s.i.)

## AIR SPRAY

Recommended thinner

Sigma thinner 91-92

Volume of thinner

5 - 10%, depending on required thickness and application conditions

Nozzle orifice

1.5 - 2 mm

Nozzle pressure

0.3 - 0.4 MPa (= approx. 3 - 4 bar, 43 - 57 p.s.i.)

## BRUSH

- only for touch up and spot repair
- due to thixotropy it is difficult to obtain a smooth film by brush although this does not affect performance

## 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

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**ADDITIONAL DATA**

***Film thickness and spreading rate***

theoretical spreading rate m <sup>2</sup> /l	3.4	2.1	1.7
dft in µm	250	400	500

max. dft when brushing: 80 µm

***Overcoating table for various epoxy products for dft up to 400 µm***

substrate temperature	5°C	10°C	20°C	30°C	40°C
minimum interval	48 hours	32 hours	18 hours	12 hours	8 hours
maximum interval	28 days	28 days	28 days	14 days	7 days

– surface should be dry and free from chalking and contamination

***Curing table for dft up to 400 µm***

substrate temperature	touch dry	dry to handle	full cure for immersion in seawater
5°C	16 hours	30 hours	14 days
10°C	8 hours	16 hours	10 days
20°C	3 hours	8 hours	5 days
30°C	2 hours	5 hours	4 days
40°C	1 hour	3 hours	3 days

– adequate ventilation must be maintained during application and curing (please refer to sheet 1433 and 1434)

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

10°C	3 hours
20°C	1.5 hour
30°C	45 min.

**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

## 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.

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