SIGMATHERM 520

4 pages

October 2009
Revision of September 2005

DESCRIPTION

one component heat resistant moisture curing (ethyl) silicate finish

PRINCIPAL CHARACTERISTICS

- to be used for the internal and external protection of steel surfaces
- up to 520°C when applied on top of suitable zinc silicate primers
- minimizes the formation of zinc salts on atmospheric exposure
- cures at temperatures down to -5°C
- no post curing is required to obtain mechanical strength

COLOURS AND GLOSS

aluminium - flat

BASIC DATA AT 20°C

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

Mass density	1.2 g/cm³
Volume solids	38 ± 2%
VOC (supplied)	max. 494 g/kg (Directive 1999/13/EC, SED) max. 588 g/l (approx. 4.9 lb/gal)
Recommended dry film thickness	40 µm * (25 µm on top of the zinc silicate)
Theoretical spreading rate	9.5 m²/l for 40 µm
Touch dry after	60 min. at 20°C
Overcoating interval	min. 5 hours * max. unlimited, contamination must be removed
Curing time	12 hours *
Shelf life (cool and dry place)	at least 12 months

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- suitable zinc silicate primer (e.g. SigmaZinc 158); dry and free from any contamination and zinc salts
- during application substrate temperatures ranging from -5°C up to +50°C are acceptable
- substrate temperature should be at least 3°C above dew point
- relative humidity during curing should be above 50%

INSTRUCTIONS FOR USE

- stir thoroughly till homogeneous
- strain paint through a 30 - 60 mesh screen
- agitate continuously during application

AIRLESS SPRAY

Recommended thinner	Thinner 90-53
Volume of thinner	0 - 10%, depending on required thickness and application conditions
Nozzle orifice	approx. 0.38 - 0.46 mm (= 0.015 - 0.018 in)
Nozzle pressure	12 MPa (= approx. 120 bar; 1700 p.s.i.)

AIR SPRAY

Recommended thinner	Thinner 90-53
Volume of thinner	10 - 20%, depending on required thickness and application conditions
Nozzle orifice	1.7 - 2 mm
Nozzle pressure	0.3 MPa (= approx. 3 bar; 43 p.s.i.)

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BRUSH

only for touch up and spot repair

CLEANING SOLVENT

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 borne 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^2/l	9.5	
dft in µm	40	
dft in µm on top of zinc silicate approx.		25

- it is not possible to measure the actual dft as the finish will soak partly into the porous zinc silicate primer
- immediately after spraying the finish should have a completely wet appearance
- excessive thickness in overlapping areas should be avoided otherwise cracking and flaking may occur

Overcoating table (relative humidity during curing should be above 50%)

substrate temperature	-5°C	0°C	10°C	20°C	30°C
minimum interval	48 hours	36 hours	10 hours	5 hours	3 hours
maximum interval	unlimited				

- curing can be accelerated by spraying water on to the coated surface 4 hours after application
- the surface should be (kept) wet for the next 4 hours
- relative humidity below 50% requires a much longer minimum overcoating interval

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Curing table (relative humidity during curing should be above 50%)

at substrate temperatures	dry to handle	full cure
-5°C	2 hours	48 hours
0°C	2 hours	36 hours
10°C	1 hour	24 hours
20°C	30 min.	12 hours
30°C	15 min.	6 hours
40°C	10 min.	4 hours

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

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
Relative humidity - substrate temperature - air temperature	see information sheet 1650

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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 PPG Protective & Marine 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.

PPG Protective & Marine 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. PPG Protective & Marine 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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