## SIGMAWELD 199

**DESCRIPTION**

Two component moisture curing, low zinc (ethyl) silicate prefabrication primer

**PRINCIPAL CHARACTERISTICS**

- Suitable for automatic application on shot blasted steel plates
- Fast drying properties
- Good cutting and excellent welding properties, including MIG/MAG welding in various positions (either automatic or manual welding)
- Provides regular, smooth weld seams
- Low fume release during welding and cutting
- No adherence of weld spatter at surrounding primed surface
- Excellent thermal stability minimizes heat damage during hot work procedures
- Can be used as a first coat in various paint systems
- Suitable for sea water immersion in combination with controlled cathodic protection systems
- Approved by Lloyd's Register of Shipping for use as prefabrication primer (see sheet 1880)
- Health certificate from North of England Industrial Health Service (see sheet 1881)

**COLOURS AND GLOSS**

Redbrown (grey on request) - flat

**BASIC DATA AT 20°C**

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

(data for mixed product)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass density</td>
<td>1.3 g/cm³</td>
</tr>
<tr>
<td>Volume solids</td>
<td>25 ± 2%</td>
</tr>
<tr>
<td>VOC (supplied)</td>
<td>Max. 521 g/kg (Directive 1999/13/EC, SED)</td>
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<tr>
<td></td>
<td>Max. 676 g/l (approx. 5.6 lb/gal)</td>
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<tr>
<td>Recommended dry film thickness</td>
<td>18 µm</td>
</tr>
<tr>
<td>Theoretical spreading rate</td>
<td>11.4 m²/l for 18 µm</td>
</tr>
<tr>
<td>Touch dry after</td>
<td>6 min. at substrate temperature of 20°C</td>
</tr>
<tr>
<td></td>
<td>3 min. at substrate temperature of 40°C</td>
</tr>
<tr>
<td>Overcoating interval</td>
<td>Min. 3 days</td>
</tr>
<tr>
<td></td>
<td>Max. 6 months</td>
</tr>
<tr>
<td></td>
<td>Longer overcoating intervals can be permitted when primer is still in sound condition</td>
</tr>
<tr>
<td>Shelf life (cool and dry place)</td>
<td>Binder: at least 9 months</td>
</tr>
<tr>
<td></td>
<td>Paste: at least 12 months</td>
</tr>
</tbody>
</table>
SIGMAWELD 199

October 2009

RECOMMENDED
SUBSTRATE CONDITIONS
AND TEMPERATURES

- steel; shot blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm
- on steel blasted to above profile, the recommended dft, 18 µm, corresponds to 22 µm as measured on a smooth test panel
- minimum thickness for a closed film is 15 µm measured on a smooth test panel
- substrate temperature may be up to max. 35°C
- for automatic application a substrate temperature of 30°C is recommended
- substrate temperature should be at least 3°C above dew point
- relative humidity during curing should be above 50% and below 85%
- dust quantity rating "1" for dust size class "3", "4" or "5", lower dust size classes to be removed if visible on the surface to be coated without magnification (ISO 8502-3:1992)

SYSTEM SPECIFICATION

primers
system sheet: 3015

SECONDARY SURFACE PREPARATION

- during storage and construction, contamination of the prefabrication primer should be limited
- after fabrication, surface defects should be treated according to the scheme below
- where two possible surface treatments are indicated, the choice of treatment is dependent on the location and on the system to be applied (see system sheets)
- the preferred pretreatment for optimal results is shown; other possibilities are indicated in brackets

areas immersed atmospheric conditions

contamination to be removed or to be removed
ISO 8501-3 grade P2

weldseams ISO-Sa2½ (SPSS-Pt3) or SPSS-Pt2
ISO 8501-3 grade P2

burned ISO-Sa2½ (SPSS-Pt3) or SPSS-Ss (SPSS-Pt2)
ISO 8501-3 grade P2

damaged corroded ISO-Sa2½ (SPSS-Pt3) or SPSS-Ss (SPSS-Pt2)
ISO 8501-3 grade P2

white rust SPSS-ID Pt2 (SCAP *) or SPSS-ID Pt1 (SCAP *)
ISO 8501-3 grade P2

* cleaning by silicon carbide impregnated abrasive pad

Dust quantity rating "1" for dust size class "3", "4" or "5", lower dust size classes to be removed if visible on the surface to be coated without magnification (ISO 8502-3).

Note that the back of welded plate may show discoloration (especially on plate where fillets have been welded on), this is not to be confused with burned areas and does not require special treatment. Burned through areas may be present (this happens especially when welding thin steel) and these should then be treated as per 'burned areas' above.
INSTRUCTIONS FOR USE

mixing ratio by volume: binder to paste 66.7 : 33.3
- the temperature of the mixture of binder and paste should preferably be above 15°C
- stir the paste thoroughly before adding the binder
- add gradually one third of the binder to the pigment paste
- stir thoroughly till homogeneous
- add remaining binder and continue stirring until the mixture is homogeneous
- strain mixture through a 30 - 60 mesh screen
- mixed paint is ready for use
- some addition of thinner (Thinner 90-53) might be necessary depending on routing, line speed and steel temperature
- agitate continuously during application

Pot life
24 hours at 20°C

AIRLESS SPRAY
Recommended thinner
no thinner should be added
Nozzle orifice
approx. 0.43 - 0.53 mm (= 0.017 - 0.021 in)
Nozzle pressure
8 - 12 MPa (= approx. 80 - 120 bar; 1140 - 1700 p.s.i.)

AIR SPRAY
Recommended thinner
no thinner should be added
Nozzle orifice
1 - 1.5 mm
Nozzle pressure
0.3 MPa (= approx. 3 bar; 43 p.s.i.)

CLEANING SOLVENT
recommended 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

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 see information sheet 1431
Explosion hazard - toxic hazard see information sheet 1490
Cleaning of steel and removal of rust see information sheet 1650
Relative humidity - substrate temperature - air temperature see information sheet 1490
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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<th>PDS</th>
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<tr>
<td>179167</td>
<td>grey</td>
<td>5000002180</td>
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