

SIGMAWELD™ 165

DESCRIPTION

Two-component, moisture-curing, 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 corrosion protection up to 9 months, when applied at a DFT of 13 µm (0.5 mil) (depending on exposure conditions and blasting profile)
- Can be used as a first coat in various paint systems
- Suitable for sea water immersion in combination with controlled cathodic protection systems
- Excellent thermal stability minimizes heat damage during hot work procedures
- No adherence of weldspatter at surrounding primed surface
- Approved by Lloyd's Register of Shipping for use as a prefabrication primer

COLOR AND GLOSS LEVEL

- Gray, reddish gray
- Flat

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.4 kg/l (11.7 lb/US gal)
Volume solids	30 ± 2%
VOC (Supplied)	Directive 2010/75/EU, SED: max. 428.0 g/kg max. 645.0 g/l (approx. 5.4 lb/US gal)
Recommended dry film thickness	13 µm (0.5 mils)
Theoretical spreading rate	23.1 m ² /l for 13 µm (962 ft ² /US gal for 0.5 mils)
Dry to touch	6 minutes
Overcoating Interval	Minimum: 3 days Maximum: 9 months
Shelf life	Binder: at least 12 months when stored cool and dry Paste: at least 12 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Curing time
- Longer overcoating intervals can be permitted when the primer is still in sound condition

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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; shot blast cleaned to ISO-Sa2½, blasting profile 30 – 75 µm (1.2 – 3 mils)
- On steel blasted to above profile, the recommended DFT of 13 µm (0.5 mil), corresponds to 15 µm (0.6 mil) as measured on a smooth test panel
- Minimum thickness for a closed film is 13 µm (0.5 mil) measured on a smooth test panel
- Dust quantity on the surface to be coated must not exceed rating "1" for dust size class "3", "4" or "5" (ISO 8502-3-2017). Lower dust size classes ("1" and/or "2") to be removed if visible without magnification.

Substrate temperature and application conditions

- Substrate temperature during application should not exceed 50°C (122°F)
- Substrate temperature during application should be at least 3°C (5°F) above dew point
- Relative humidity during curing should be above 50% and below 85%

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 hereafter
- Where two possible surface treatments are indicated, the choice of treatment is dependent on the location and on the system to be applied (see below table)
- The preferred pre-treatment for optimal results is shown; other possibilities are indicated in brackets

SECONDARY SURFACE PREPARATION		
Area	Immersed exposure conditions	Atmospheric exposure conditions
Contamination	To be removed	To be removed
Weldseams	ISO 8501-3 grade P2 and cleanliness ISO Sa 2 ½ (SPSS-Pt3)	SPSS-Ss (SPSS-Pt2)
Burned	ISO 8501-3 grade P2 and cleanliness ISO Sa 2 ½ (SPSS-Pt3)	SPSS-Ss (SPSS-Pt2)
Damaged corroded	ISO 8501-3 grade P2 and cleanliness ISO Sa 2 ½ (SPSS-Pt3)	SPSS-Ss (SPSS-Pt2)
White rust	ISO 8501-3 grade P2 and cleanliness ISO Sa 2 ½ (SPSS-Pt3)	SPSS-ID Pt1 (SCAP)

Notes:

- Burned through areas may be present (this happens especially when welding thin steel) and these should then be treated as per 'burned areas' above
- 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)
- 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



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INSTRUCTIONS FOR USE

Mixing ratio by volume: binder to paste 1.22:1

- The temperature of the mixture of binder and paste should preferably be above 15°C (59°F)
 - Stir the paste thoroughly before adding the binder
 - Gradually add one-third of the binder to the pigment paste
 - Stir thoroughly until homogeneous
 - Add remaining binder and continue stirring until the mixture is homogeneous
 - Strain the 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
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Pot life

24 hours at 20°C (68°F)

Air spray

Recommended thinner

THINNER 90-53

Volume of thinner

0 - 30%, depending on required thickness and application conditions

Nozzle orifice

1.0 - 1.5 mm (approx. 0.040 - 0.060 in)

Nozzle pressure

0.3 MPa (approx. 3 Bar; 44 p.s.i.)

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Airless spray

Recommended thinner

THINNER 90-53

Volume of thinner

0 - 30%, depending on required thickness and application conditions

Nozzle orifice

Approx. 0.48 – 0.64 mm (0.019 – 0.025 in)

Nozzle pressure

8.0 - 12.0 MPa (approx. 80 - 120 bar; 1161 - 1741 p.s.i.)

Notes:

- Depending on exact application conditions a different thinner may be required to ensure optimal application properties. Consult the PPG Protective & Marine Coatings representative in your area when required.
- Contact your local PPG representative for maximum allowance of thinning, which can be different by local VOC regulations

Cleaning solvent

- THINNER 90-53

ADDITIONAL DATA

Curing time for DFT up to 13 µm (0.5 mils)	
Substrate temperature	Dry to touch
20°C (68°F)	6 minutes
40°C (104°F)	3 minutes

SAFETY PRECAUTIONS

- See Safety Data Sheet and product label for complete safety and precaution requirements
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis. However, 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

- Information sheet | Explanation of product data sheets

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