SIGMAWELD MC US

July 2006
Revision of January 2003

DESCRIPTION

Sigmaweld MC is a moisture curing, reduced zinc (ethyl) silicate preconstruction 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).
- Passed MIL-STD 248C welding test.
- 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 seawater immersion in combination with controlled cathodic protection systems.
- Approved Lloyd's Register of Shipping, ABS and DNV for use as pre-construction primer.
- Health certificate from North of England Industrial Health Service
- 38% zinc in dry film

COLORS AND GLOSS

Grey, green, redbrown – flat

BASIC DATA AT 68° F (20°C)

Mass density	approximately 12.4 lbs/gal (1.5 g/cm³)
Solids content	approximately 30% by volume
VOC (by EPA method 24)	5.3 lbs/gal (637 g/ltr)
Recommended dry film thickness	0.7 mils (17 µm)
Theo. spreading rate	687 ft²/gal at 0.7 mils dft (57 m²/ltr for 17 µm)
Dry to handle	6 minutes at substrate temperature of 68°F (20°C) 3 minutes at substrate temperature of 104°F (40°C)
Temperature resistance	1000°F (538°C)
Overcoating interval	minimum – 3 days maximum – 6 months longer overcoating intervals can be permitted when primer is still in sound condition.

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Shelf life (cool and dry place)	binder: minimum 6 months Paste: minimum 24 months	
Flash point	binder: 60°F (16°C) Paste: 57°F	
Packaging Data	<u>1.189 gallon mixed kit:</u> Binder: 0.793 gallons Paste: 0.396 gallons	<u>4.755 gallon mixed kit:</u> Binder: 3.17 gallons Paste: 1.585 gallons

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Steel; blast cleaned to NACE No.2/SSPC-SP10 (Near White Metal)
- Blasting profile(Rz); 1.6-2.8 mils (40-70µm)
- On steel blasted to the above profile, the recommended dft of 0.7 mils corresponds to 0.8 mils as measured on a smooth test panel.
- Minimum thickness for a closed film is 0.6 mils measured on a smooth test panel.
- Substrate temperature may be to maximum 104°F (40°C).
- For automatic application a substrate temperature of 86°F (30°C) is recommended.
- The temperature of the substrate should be at least 5°F (3°C) above the dew point.
- Relative humidity during curing should be above 40%.

SECONDARY SURFACE SURFACE PREPARATION

- During storage and construction, contamination of the pre-construction 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 pre-treatment for optional results shown; other possibilities are indicated in brackets.

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Exposure conditions	immersed	atmospheric
Contamination	to be removed	to be removed
Weldseams	SSPC-SP10 (SSPC-SP3)	SSPC-SP3
Burned areas	SSPC-SP10 (SSPC-SP3)	SSPC-SP7 SSPC-SP3
Damaged corroded areas	SSPC-SP10 (SSPC-SP3)	SSPC-SP7 SSPC-SP3
White rust	SSPC-SP3 (SCAP*)	SSPC-SP2 (SCAP*)

*Cleaning by silicon carbide impregnated abrasive pad.

Note: That the back of the 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: 2:1 binder : paste.
- The temperature of the mixture of binder and paste should be above 60°F (16°C).
- Stir the paste thoroughly using a mechanical mixer before adding the binder.
- Add gradually one third of the binder to the pigment paste.
- Stir thoroughly until homogenous.
- Add remaining binder and continue stirring until the mixture is homogenous.
- Strain through a 30-60 mesh screen.
- Mixed paint is ready for use.
- Some addition of thinner 90-53, flashpoint 86°F ((30°C) might be necessary depending on routing, line speed and steel temperature.
- Agitate continuously during application.

Pot life — 24 hours at 68°F (20°C)

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AIRLESS SPRAY

Recommended thinner	no thinner allowed
Tip size	0.017 – 0.021 inch (approximately 0.43 – 0.53 mm)
Tip pressure	1400 – 1170 p.s.i. (approximately 80 – 120 at; 8 – 12 MPa)

CONVENTIONAL SPRAY

Re Recommended thinner	no thinner allowed
Tip size	approximately 0.078 (2 mm)
Tip pressure	43 p.s.i. (approximately 3 at; 0.3 MPa)

CLEANING SOLVENT 90 – 53 (Flash point 86°F (30°C))

SAFETY PRECAUTIONS

This product is offered for sale and use only to PROFESSIONALLY TRAINED INDUSTRIAL PERSONNEL. It is NOT FOR RESIDENTIAL USE. This product contains flammable solvents and/or other hazardous ingredients and must be used with caution. Observe all health and safety precautions as listed on the Material Safety Data Sheet during storage and handling, application, drying and disposal. DO NOT ATTEMPT TO USE THIS PRODUCT WITHOUT CONSULTING THE CURRENT "MATERIAL SAFETY DATA SHEET". Material Safety Data Sheets are available from the Customer Service Department at SigmaKalon USA (713-355-3333)

Worldwide availability While it is the aim of Sigma Coatings to supply the same product on a worldwide basis, slight local modifications can be necessary to comply with legislation or special circumstances. In such situations an alternative product data sheet is published.

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 and toxic hazard	see information sheet 1431
Cleaning of steel and removal of rust	see information sheet 1490
Relative Humidity – Substrate Temperature – Air Temperature	see information sheet 1690

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