SIGMACAP ZINC SILICATE 7658

Two sheet issue June 2007

DESCRIPTION	two component moisture curing zinc (alkyl) zinc silicate primer
PRINCIPAL CHARACTERISTICS	- anticorrosive primer for structural steel - suitable as a system primer in various paint systems based on unsaponifiable binders - galvanic action eliminates sub film corrosion - good low temperature curing - must not be exposed to alkaline (above pH 9) or acidic (less than pH 5) liquids - can withstand substrate temperatures of -90 °C up to +400 °C under normal atmospheric exposure conditions - good impact and abrasion resistance
COLOUR AND GLOSS	greenish-grey – flat
BASIC DATA AT 20 °C	(for mixed product at 50% relative humidity)
Mass density	approx. 2.0 g/cm³
Solids content	approx. 62 ± 2% by volume
VOC (supplied)	max. 525 g/l
Recommended dry film thickness	when used as a system primer with a dft of 60 µm on smooth, non pitted steel. average dft 100 µm with a minimum of 75 µm on rough or pitted blast cleaned steel
Theoretical spreading rate	8.7 m²/ltr for 75 µm
Touch dry after	approx. 30 minutes
Overcoating interval	min. 12 hours* max. no limitation providing zinc salts are removed
Full cure after	12 hours
Shelf life (cool, dry place)	binder at least 9 months
Flashpoint	binder 16 °C - pigment - above 65 °C

* see additional data

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RECOMMENDED SUBSTRATE CONDITIONS

- **for atmospheric exposure**
- steel; blast cleaned to ISO-Sa2½ profile (Rz) 40 – 70 µm
- steel with approved zinc silicate shop primer pretreated to SPSS-Pt3
- weathered galvanized steel; sweep blasted to roughen surface and to remove any zinc salts
- substrate temperature of -5 °C up to +50 °C is acceptable
- substrate temperature must be at least 3 °C above the dew point
- relative humidity should be above 40%

INSTRUCTIONS FOR USE

- mixing ratio: by volume; binder to zinc powder 86 : 14
- add the zinc powder gradually to the binder and using a mechanical mixer, stir the zinc powder thoroughly through the binder
- do not mix in reverse order to avoid lumps in the paint
- strain mixture through a 30 - 60 mesh screen and continue stirring during application using the mechanical mixer
- at application temperatures above 30 °C addition of 10% volume of Sigma thinner 90-53 may be necessary

Induction time at 20 °C None

Pot life at 20 °C 12 hours*

AIRLESS SPRAY

Recommended thinner	Sigma thinner 90-53 (flashpoint 30 °C)
Volume of thinner	0 - 10%
Nozzle orifice	approx. 0.48 - 0.64 mm (0.019 - 0.025 inch)
Nozzle pressure	150 bar (approx. 2100 p.s.i.)

AIR SPRAY

Recommended thinner	Sigma thinner 90-53 (flashpoint 30 °C)
Volume of thinner	0 - 10%
Nozzle orifice	2.0 mm
Nozzle pressure	3 (approx. 43 p.s.i.)

BRUSH AND ROLLER

Recommended thinner

- only for touch up and spot repair
- first coat not to be thinned - max. dft 35 microns
- next coat to be thinned with 10 - 25% thinner 90-53 to allow a visible wet coat of 25 µm to be applied

CLEANING SOLVENT Sigma thinner 90-53 (flashpoint 30 °C)

see sheet two

SAFETY PRECAUTIONS

see safety sheet 1430, 1431 and MSDS 7658 for information on LEL and TLV values

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

ADDITIONAL DATA

highly pigmented zinc silicate primers produce dry films with void spaces between the particles

Film thickness and spreading rate

Dry film thickness in microns (µm)	75	100
Theoretical spreading rate (m²/l)	8.7	6.5

please note that over application may lead to mudcracking

Upgrading dft

- if the dft is below specification and an extra coat of 7658 Sigmagap Zinc Silicate has to be applied, it should be thinned with approx. 50% with Sigma thinner 90-53, in order to obtain a visible wet coat that remains wet for some time

Overcoating table for 50% relative humidity and higher

substrate temperature	-5 °C	0 °C	10 °C	20 °C	30 ºC	40 °C
minimum interval	24 hours	24 hours	18 hours	12 hours	6 hours	4 hours
maximum interval	no limitation, providing the surface is cleaned from any contamination					

- a RH below 50 % requires a much longer overcoating time
- if part of a coating system and in order to avoid possible popping effects (pinholes) Sigmacap Zinc Silicate should be sealed with approved coatings
- Sigmacap Zinc Silicate is a moisture curing zinc silicate, this means that it only cures after sufficient uptake of water (from the atmosphere or immersion) during and after application. It is recommended that the RH and temperature is measured during the curing time
- before entering service or overcoating, a sufficient degree of cure should be Obtained
- when curing conditions are unfavourable or when reduced overcoat times are desired, curing can be accelerated 4 hours after application by: wetting or soaking with water, keeping the surface wet for the next 2 hours followed by drying
- wetting or soaking with a 0.5% ammonia solution, followed by drying
- before overcoating with topcoats, Sigmacap Zinc Silicate should always be visibly dry and checked for surface curing

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- for measuring of the curing, the MEK rub test according to ASTM 4752 is a suitable method. After 50 rubs with a cloth soaked in MEK (or alternatively Sigma thinner 90-53) no dissolving of the coating should be observed

Curing table for 50% relative humidity and higher

Substrate temperature	Dry to handle	Full Cure
-5 °C	2 hours	24 hours
0 °C	2 hours	24 hours
10 °C	1 hour	18 hours
20 °C	30 minutes	12 hours
30 °C	30 minutes	6 hours
40 °C	30 minutes	4 hours

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

Pot life (at application viscosity)

Paint temperature	Pot life
0 °C	24 hours
10 °C	16 hours
20 °C	12 hours
30 °C	6 hours

REFERENCES explanation to product data sheets on information sheet 1411