Two sheet issue

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/litr 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
SIGMACAP ZINC SILICATE

June 2007

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
- only for touch up and spot repair
Recommended thinner
- 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

<table>
<thead>
<tr>
<th>Film thickness and spreading rate</th>
<th>Dry film thickness in microns (µm)</th>
<th>75</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical spreading rate (m²/l)</td>
<td>8.7</td>
<td>6.5</td>
<td></td>
</tr>
</tbody>
</table>

please note that over application may lead to mudcracking

Upgrading dft

- if the dft is below specification and an extra coat of 7658 Sigmacap 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

<table>
<thead>
<tr>
<th>substrate temperature</th>
<th>-5 ºC</th>
<th>0 ºC</th>
<th>10 ºC</th>
<th>20 ºC</th>
<th>30 ºC</th>
<th>40 ºC</th>
</tr>
</thead>
<tbody>
<tr>
<td>minimum interval</td>
<td>24 hours</td>
<td>24 hours</td>
<td>18 hours</td>
<td>12 hours</td>
<td>6 hours</td>
<td>4 hours</td>
</tr>
</tbody>
</table>
| 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

<table>
<thead>
<tr>
<th>Substrate temperature</th>
<th>Dry to handle</th>
<th>Full Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5 °C</td>
<td>2 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>0 °C</td>
<td>2 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>10 °C</td>
<td>1 hour</td>
<td>18 hours</td>
</tr>
<tr>
<td>20 °C</td>
<td>30 minutes</td>
<td>12 hours</td>
</tr>
<tr>
<td>30 °C</td>
<td>30 minutes</td>
<td>6 hours</td>
</tr>
<tr>
<td>40 °C</td>
<td>30 minutes</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

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

Pot life (at application viscosity)

<table>
<thead>
<tr>
<th>Paint temperature</th>
<th>Pot life</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 °C</td>
<td>24 hours</td>
</tr>
<tr>
<td>10 °C</td>
<td>16 hours</td>
</tr>
<tr>
<td>20 °C</td>
<td>12 hours</td>
</tr>
<tr>
<td>30 °C</td>
<td>6 hours</td>
</tr>
</tbody>
</table>

REFERENCES

Explanation to product data sheets on information sheet 1411