Inorganic Zinc Primer
Zinc Rich Silicate

PRODUCT DESCRIPTION
A two component, solvent based inorganic ethyl silicate, moisture curing zinc rich preconstruction primer

INTENDED USES
As a metallic zinc pigmented primer to provide excellent protection to steel surfaces. For use with a wide range of high performance system in offshore and onshore environments including oil production platforms, refineries bridges, tanks, pipework and structural steelwork.

Ideal for giving long term protection to steel prior to field topcoating.

Can be used for new construction and as a fast drying primer, capable of application in a wide range of climatic conditions

Provides cathodic protection and acts as a sacrificial layer on mild steel, eliminating sub film corrosion

CHARACTERISTICS
• Based on ethyl silicate binder; the zinc component is incorporated prior to use, and when applied the mixture reacts with atmospheric moisture, converting to a dense inorganic coating of a Si/Zn/Si matrix, forming a hard corrosion resistant layer which protects the steel in a similar way to galvanizing eliminating sub film corrosion.
• Excellent corrosion protection
• Provides long term corrosion protection to structural steel
• Excellent impact and abrasion resistance, scratches caused by handling damage continue to be protected by the high zinc content in the surrounding film
• High temperature resistance
• Aerosol packs available

PRODUCT INFORMATION
<table>
<thead>
<tr>
<th>Colour</th>
<th>Greenish Grey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finish</td>
<td>Matt</td>
</tr>
<tr>
<td>Density</td>
<td>2.30 kg/litre</td>
</tr>
<tr>
<td>Zinc Content in Dry Film</td>
<td>75% +/− 2%, mixed</td>
</tr>
<tr>
<td>Volume Solids</td>
<td>65% +/− 2%, mixed</td>
</tr>
<tr>
<td>Mix Ratio (volume)</td>
<td>6.5 Litre of Liquid Zinc paste to 3.5 lts of binder</td>
</tr>
<tr>
<td>Typical Wet Film Thickness</td>
<td>77 - 115 microns dry (77-115 microns wet)</td>
</tr>
<tr>
<td>Typical Dry Film Thickness</td>
<td>50 - 75 microns dry depending on system</td>
</tr>
<tr>
<td>Theoretical Coverage</td>
<td>8.66 m²/litre at 75 microns dft, allow loss factors</td>
</tr>
<tr>
<td>Method of Application</td>
<td>Conventional and Airless Spray</td>
</tr>
<tr>
<td>Number of Coats</td>
<td>1 Coat, excessive thickness should be avoided</td>
</tr>
<tr>
<td>Flash Point</td>
<td>17°C</td>
</tr>
<tr>
<td>Temperature Resistance</td>
<td>Dry continuous - 400°C – Un-Topcoated</td>
</tr>
<tr>
<td></td>
<td>Non-Continuous - 427°C – Un-topcoated</td>
</tr>
<tr>
<td></td>
<td>Dry continuous - 540°C – Topcoated*</td>
</tr>
</tbody>
</table>

*Check systems and compatibility
Inorganic Zinc Primer
Zinc Rich Silicate

<table>
<thead>
<tr>
<th>Drying Information</th>
<th>5°C</th>
<th>15°C</th>
<th>25°C</th>
<th>40°C</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch Dry</td>
<td>40 min</td>
<td>20 min</td>
<td>15 min</td>
<td>5 min</td>
<td>-</td>
</tr>
<tr>
<td>Hard Dry</td>
<td>4 hrs.</td>
<td>2 hrs.</td>
<td>1 hrs.</td>
<td>30 min</td>
<td>-</td>
</tr>
</tbody>
</table>

**Overcoating Data – See Limitations**

<table>
<thead>
<tr>
<th>Substrate Temp.</th>
<th>5°C</th>
<th>15°C</th>
<th>25°C</th>
<th>40°C</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>36 hrs.</td>
<td>24 hrs.</td>
<td>16 hrs.</td>
<td>8 hrs.</td>
<td>-</td>
</tr>
</tbody>
</table>

Maximum and Cure

*Extended*

**Note**

overcoating is dependent on ambient conditions. The figures quoted above have been determined at the quoted dry film thickness, temperature and 65% relative humidity. See product limitations for further advice.

**CERTIFICATIONS**

N/A

**SYSTEMS AND COMPATIBILITY**

Inorganic Zinc Primer can be applied directly to correctly prepared bare steel. When it is necessary for Inorganic Zinc Primer to be overcoated by itself due to low dry film thickness, the coating surface must be fresh and unweathered. A minimum of 50 microns d.f.t of any subsequent coat of Inorganic Zinc Primer is needed to ensure good film formation.

Before overcoating with recommended topcoats ensure the Inorganic Zinc is fully cured and if weathering has occurred all zinc salts should be removed from the surface by fresh water washing, and if necessary, scrubbing with bristle brushes.

Suitable topcoats are:

- AquaCryl DTM
- ArmaCryl Topcoat
- Ultimate XLA Topcoat
- Epoxy Multi Prime
- Epoxy Multi Zinc
- Epoxy Multi MIO
- Epoxy Holding Primer
- Epoxy 8930 ST
- Epoxy Surtol Aluminium HS
- Polyspartic DTS 90
- Silicon 350
- Silicon 650
- Silicate 520

In some cases it may be necessary to apply a mist coat of suitable viscosity to minimise bubbling. This will depend upon the age of the Inorganic Zinc, surface roughness and ambient conditions during curing and application. Alternatively, an epoxy sealer coat such as Epoxy Multi Prime can be used to reduce bubbling.

Consult Speccoats™ Technical Representative for other coating system solutions.
SURFACE PREPARATION

The performance of this product will depend upon the degree of surface preparation. The surface to be coated must be cleaned and free from contamination. Prior to paint application all surface should be assessed and treated in accordance with ISO 8504:2000.

Accumulated dirt and soluble salts must be removed. Dry bristle brushing will normally be adequate for accumulated dirt. Soluble salts should be removed by fresh water rinsing. Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

Abrasive Blast Cleaning and Mechanical Preparation – Steel

This product should be applied to surfaces prepared by abrasive blast cleaning to SA 2½ in accordance with International Standard ISO 8501:2007 or SSPC-SP6. If oxidation has occurred between blasting and application of Inorganic Zinc, the surface should be re-blasted to the specified visual standard. Surface defects revealed by the blast cleaning process should be ground, filled, or treated in the appropriate manner.

A blast profile of 40-75 microns is recommended.

Shop Primed Steel

Inorganic zinc is suitable for application steelwork freshly coated with zinc silicate shop primers such as Inorganic Zinc Weldable Primer. If the shop primer shows extensive or widely scattered breakdown, or excessive zinc corrosion products, overall sweep blasting will be necessary. Other types of shop primers are not suitable for overcoating and will require complete removal by abrasive blast cleaning.

Weld seams and damaged areas should be blast cleaned to Sa2½ of International Standard ISO 8501:2007 or SSPC-SP6.

Damaged / Repair Areas

All damaged areas should ideally be blast cleaned to Sa2½ of International Standard ISO 8501:2007 or SSPC-SP6. However, it is acceptable that small areas can be power tool cleaned o Pt3 or SSPC-SP11, provided the area is not polished. Repair of the damaged are can be carried out using a recommended zinc epoxy primer such as ZincFix® or ZincDek 90, ZincDek 80 Inorganic Zinc etc.

Consult with Speccoats™ Technical department.
Inorganic Zinc Primer

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APPLICATION

Mixing

Inorganic Zinc is supplied in two parts, a liquid binder base component and a zinc paste component. The Paste component should be slowly added to the liquid binder whilst stirring with a mechanical agitator. Do not add the liquid to paste.

Material should be filtered prior to application and should be constantly agitated in the pot during spraying to keep the zinc in suspension.

Once mixed the product should be used within the pot life specified.

APPLICATION

Mix Ratio

6.5 Litre of Liquid Zinc paste to 3.5 Litres of binder

Pot Life

24 Hours at 0°C
16 Hours at 10°C
12 Hours at 20°C
6 Hours at 30°C

Brush

Suitable

For minor touch up only

Conventional

Recommended

Fluid tip 1.6 – 2.2 mm

Airless Spray

Recommended

Tip Range 15-21 Thou. Pressure at the tip should not be less than 103 bar (1500 PSI)

Thinner

I-Zinc Thinner

Up to 10%

Cleaner

SA65 Thinner

For dry paint and equipment

Work Stoppage

Do not allow material to remain in spray equipment after use, thoroughly flush and clean all equipment with SA65 Thinner. Once the kit has been mixed they should not be re-sealed and it is advised that of prolonged stoppages, work recommences with freshly mixed units

Clean Up

Clean all equipment immediately after use with SA65 Thinner. It is advisable to periodically flush out spraying equipment during the course of the working day. Frequency of cleaning is dependant of upon the amount sprayed, temperature and elapsed time. Work strictly in accordance with the specified pot life of the material.
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SURFACE PREPARATION

- Prior to overcoating, Inorganic Zinc Primer must be clean, dry and free from both soluble salts and excessive zinc corrosion products
- Surface temperature must always be a minimum of 3°C above the dew point
- When applying Inorganic Zinc Primer in confined spaces ensure adequate ventilation
- The minimum overcoating interval is dependent upon the relative humidity during cure. Below 65% relative humidity the minimum recoat period will normally be at least 24 hours, but will be dependent upon the dry film thickness, ambient temperature and relative humidity during the application and curing period.
- It is recommended that, prior to overcoating, a solvent rub test to ASTM 4752 should be undertaken. A value of 4 indicates a satisfactory degree of cure for overcoating purposes.
- At relative humidity below 50%, curing will be severely retarded and humidity may need to be increased by steam or water spraying.
- For high temperature conditions the thickness of Inorganic Zinc primer should be restricted to 50 microns d.f.t. Continuous dry temperature resistance of Inorganic Zinc is 400°C if left un-topcoated; however, if the product is used as a primer for Silicone 650, the dry temperature resistance will be 540°C
- Excessive film thickness and/or over-application can lead to mud cracking, which will require complete removal of the affected areas by abrasive blast cleaning and re-application in accordance with the original specification.
- Over-application will extend both the minimum overcoating periods and handling times, and may be detrimental to long term overcoating properties.
- Care should be taken to avoid application of dry film thickness in excess of 125 microns.
- Un-topcoated Inorganic Zinc Primer is not suitable for exposure in acid or alkaline conditions or continuous water immersion
- Overcoating information is given for guidance only and is subject to local climate and environmental conditions. Consult a Speccoats™ representative for specific recommendations
- Test performance results were obtained in a controlled laboratory environment and Speccoats™ makes no claim that the exhibited published test results, or any other tests, accurately represent results found in all field environments. As application, environmental and design factors can vary, due care should be exercised in the selection and verification of the performance and use of the coating.
UNIT SIZE

<table>
<thead>
<tr>
<th>Kit Size</th>
<th>Volume</th>
<th>Part A</th>
<th>Volume</th>
<th>Part B</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 lt</td>
<td>6.5 lt</td>
<td>10 lt</td>
<td>3.5 lt</td>
<td>5 lt</td>
</tr>
</tbody>
</table>

STORAGE

Shelf Life 9 months minimum at 25°C

Subject to inspection thereafter. Store in dry conditions out of direct sunlight away from source of heat or ignition between temperatures of 4-38°C

IMPORTANT NOTE

Whilst we endeavour to ensure that all advice we give about the product is correct, the information given in this data sheet is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so entirely at his own risk. As conditions of use, method of application and suitability of the substrate prior to painting are beyond our control, no guarantee is implied by the recommendations contained herein. We therefore do not accept any liability whatsoever or howsoever arising from the performance of this product or for any loss or damage arising out of the use of this product. The information contained in this sheet is liable to modification from time to time in the light of experience and ongoing product development programmes. It is the user’s responsibility to ensure that this sheet is current prior to using the product.

PRECAUTIONS

For complete safety and handling information please refer to the appropriate Safety Data Sheets prior to using this product.