Transozinc Silicate 143

Product code:
TO 1.43

A moisture curing inorganic zinc silicate with optimized zinc dust content for an excellent protection of steel structures against corrosion in industrial and marine environments.
The product consist of a binder and zinc paste making it more easier to mix as well as safer to use by the applicators.
The product is has good impact and abrasion resistance and can be recoated with Transpoxy, Transoprene or Transvinyl products.

Physical properties:

Colour	Grey
Gloss / Appearance	Flat
Volume Solids	Approx. 55 %
Specific gravity	Approx. 2.2 g/ml
VOC	Approx. 488 g/liter
Flashpoint	Binder > 12 °C Zinc paste > 30 °C

Usage data:

Mixing ratio By volume, base to hardener: 36 Binder to 64 Zincpaste

Film thickness	Dry film thickness per coat (µm)	Wet film thickness per coat (µm)	Theoretical spreading rate (m²/l)
Range	50 - 80	110 - 175	9.0 - 5.6
Recommended	70	160	6.4

Curing Times	Substrate temperature			
	23°C at 30% RH	23°C at 65% RH	23°C at 95% RH	
Touch dry				
Dry to handle	16 Hours	2 Hours	30 Minutes	
Full cure	48 Hours	24 Hours	5 Hours	
Potlife	10 Hours	10 Hours	Hours	

Drying and curing times are determined under controlled temperatures and relative humidity below 85 %, and at average of the DFT range for the product and should be considered as guidelines only.
The actual drying time may be shorter or longer, depending on film thickness, temperature, ventilation, humidity, preceding paint system etc.

Recoating intervals - see application section

	Substrate temperature							
	23°C at 30% RH		23°C at 65% RH		23°C at 95% RH			
Recoated with	Min	Max	Min	Max	Min	Max	Min	Max
Single pack products	48 Hours	Indefinite	24 Hours	Indefinite	4 Hours	Indefinite		
2-pack products	48 Hours	Indefinite	24 Hours	Indefinite	4 Hours	Indefinite		

Recoating information is given for guidance only and is subject to local climate and environmental conditions. Consult your local Transocean representative for specific recommendations.
As a general rule, the best intercoat adhesion is achieved when the subsequent coat is applied before the preceding coat has been fully cured. Extended recoating times should not be considered for other than ambient atmospheric exposure. After prolonged exposure times it may be necessary to roughen the surface to ensure intercoat adhesion.

Surface Preparation:

Steel - Blast cleaning

All surfaces should be clean, dry and free from contamination. Surfaces should be treated in accordance with ISO 8504:2000.

All edges shall be ground to a minimum radius of 2 mm. Remove weld spatter and smooth weld seams by using disc grinders, chipping hammers or other suitable power tools. Sharp edges, weld seams, corners and other areas that are likely to receive less dry film thickness than specified, should be stripe coated.

The surfaces shall be blast-cleaned to min. Sa 2½ (ISO 8501-1:2007). The surface profile and the anchor pattern shall be between 40 µm and 70 µm. The abrasives shall be free from oil, grease, moisture, chloride contamination etc.

Minor repair / Touch-up

All surfaces should be clean, dry and free from contamination. Surfaces should be treated in accordance with ISO 8504:2000.

Any corroded areas should be prepared by power-tool cleaning or water jetting.

Power-tool cleaning to min. St 2, preferably St 3 (ISO 8501-1:2007). Care shall be taken to ensure that power-tool cleaning does not polish the steel surface. If the surface being prepared lies adjacent to a coated surface, the power tool cleaning shall overlap the coated surface by at least 25 mm and the coated surface shall be feathered.

Water jetting in accordance to ISO 8591-4: 2006 to a cleanliness of Wa 2 or better for atmospheric exposure.

Acceptable flash rust degree is M (medium) but degree L (light) is preferred.

A water pressure of at least of 1000 bar (approx. 15.000 psi) is recommended.

Application:

Mixing:

The product is supplied in 2 containers as a unit. Always mix a complete unit in the proportions supplied. Do not mix more material than can be used within the specified pot life.

- The zinc paste should be stirred with a clean mechanical mixer before adding the binder.
- Homogenize the binder by stirring or by gentle shaking of the can. Add binder gradually whilst stirring preferably by means of a mechanical mixer.
- Keep stirring until mixture is lump-free. If necessary, remove coarse particles by sieving to avoid blockage of the spray equipment.
- Stir continuously during application

Avoid too vigorous mixing as it leads to in air inclusion, which may result in poor application results.
Irrespective of the substrate temperature, the advised minimum temperature of the mixed paint is 10 °C.

Conditions:

The relative humidity should be between 65% and 90% during application and curing. The temperature of the substrate should be min. 5°C and at least 3°C above the dew point of the air. Temperature and relative humidity should be measured in the vicinity of the substrate.
Zinc silicate paints in general requires moisture for curing. At low humidity the curing will be improved by gently sprinkling fresh water over the paint film, and/or by artificial humidification of the surrounding atmosphere. It is advised to consult your Transocean representative first before doing so.
In a warm climates it is recommended to keep the cans with the Silicate binder (part A) out of the sun. In order to have the best application result, it is advised to keep the temperature of binder part A below 30°C.
When recoating, the air in the pores of the zinc silicate coating may lead to bubbling ('popping') in fresh applied coating. To avoid this effect, it is advised to use the mist coat /full coat application technique or use a sealer coat.

Methods:

Guiding data Airless spray	Pressure at nozzle	120 - 150 bar
	Nozzle size	0.53 - 0.64 mm (0.021 - 0.025 in.)
	Spray angle	40 - 80 degrees
	Volume of thinner	0 - 3%
Guiding data Airspray	Pressure	2.7 - 3.5 bar
	Nozzle size	1.5 - 2.0 mm
	Volume of thinner	0 - 10%
Brush / Roller	Suitable for stripe coats and touch-up work only.	
Thinner	Transocean Thinner 6.08 If thinning is necessary, this should be added after mixing of the two components. The recommended level of thinner is dependent on thickness and conditions. In certain circumstances, it may be required to exceed the stated level of thinner. However, as a general rule do avoid excessive thinning as it will result in lower sag resistance and slower cure. In addition it may cause solvent entrapment, possibly risking blistering, pinholing and/or other coating defects.	
Cleaner	Transocean Thinner 6.08	

Additional usage instructions

Recoating.
The zinc silicate should be fully cured prior to recoating. Un-weathered zinc silicate films are porous and the porosity may vary according to the weather condition during application and the application technique. When recoating zinc silicates, the air in the pores will escape through the new coat of paint and may cause blisters or pinholes ('popping') in the fresh coat just after application. To avoid this a mist coat/full coat technique is recommended.
First apply a thin coat of the diluted next coat to fill the pores in the zinc silicate film and a few minutes later apply the same product to full specified film thickness.
In case where thinning of the next coat is not desired or in difficult cases, use Transpoxy Sealer 1.99 or Transpoxy Primer 1.16 as a tiecoat.

Application conditions.
The optimal conditions for spraying are between 15-25 °C and 75% RH.
Minimum surface temperature during application should be 0°C. Steel temperature has to be above the dew point. As a rule of thumb a steel temperature 3°C above the dew point can be considered safe.
The maximum temperature is approx. 50°C. When applying at steel temperatures higher than 30 °C, care should be taken to avoid dry-spray.
This can be done by using more Thinner 6.07 (up to 10%) or by using Thinner 6.08 which is slower evaporating thinner than Thinner 6.07.
Please note that sagging resistance may be reduced and therefore reduction of wet film thickness may be necessary.

In confined spaces, supply an adequate amount of fresh air during application and drying to assist solvent evaporation. Ventilation for this purpose is recommended to be a minimum corresponding to a few air shifts per hour along all surfaces. However, avoid ventilators blowing directly onto the freshly applied paint.

Maximum dry film thickness.
Excessive application of the paint will lead to mud cracking. It is advised to use the recommended dry film thickness of 75 microns. Above thicknesses of 100 microns, mud cracking can occur.

Curing conditions.
Transozinc Silicate requires humidity for full curing. At a RH of 50% or higher, typical minimum recoating interval at 0° C is 24 hours, at 20 ° 12 hours and at 40 °C approx. 4 hours.
Relative Humidity should be monitored during the curing process. At lower humidity, the curing may be accelerated by gently sprinkling with fresh water or a 0,5% ammonia solution. This should only be done after an initial curing of 6 hours.

Curing can be checked by using the MEK rub test according to ASTM 4752. After 50 double rubs with a cloth soaked in MEK, the zinc silicate coating should not dissolve.
In case MEK is not available, thinner 6.07 or thinner 6.08 may be used alternatively.

Additional Product information:

Storage and shelf life of zinc silicates

The product must be stored in accordance with national regulations. The cans are to be kept in a dry, cool, well ventilated space and away from source of heat and ignition. Cans must be kept tightly closed.
Shelf life is dependent on storage temperature. Typical shelf life of binder part A is 6 months and of the zinc paste part B is 1 year at 25°C. Storage temperatures above 25°C may reduce the shelf life period and the binder part A should not be stored above 40°C.

Health and safety

Observe the precautionary notices on the label of the container. A material safety data sheet is available upon request and national or local safety regulations should be followed. This product is intended for use by professional applicators.

As a general rule, avoid skin- and eye contact by wearing overalls, gloves, goggles, mask, etc. Spraying should be carried out under well-ventilated conditions. This product contains flammable materials and should be kept away from sparks and open flames. Smoking in the area should not be permitted. Avoid the inhalation of vapours and particulates by the provisions of good natural ventilation sufficient to keep air-borne concentrations below the Occupational Exposure Standards during the application and drying of paint films.

In operations where natural ventilation is insufficient to achieve this - e.g. painting work in enclosed areas - exposure should be controlled by the use of local exhaust ventilation. When this is not reasonably practicable, suitable respiratory protective equipment must be worn. For spray application or when OES's are likely to be exceeded, use the respiratory equipment as recommended in for instance BS4275:1974. This specification gives advice on selection, use and maintenance of various types of breathing apparatus. Protect other persons in the area.

Disclaimer

The information in this data sheet is provided to the best of our knowledge. However, we have no control over either quality or condition of the substrate and other factors affecting the use and application of this product. Therefore, we cannot accept any liability whatsoever or howsoever arising from the performance of the product or for any loss or damage arising from the use of this product. Users should first carry out their own trials to ascertain the suitability of the product for their intended purpose.

This Data Sheet supersedes all previous Data Sheets supplied to you relating to this product. It contains important information which must be communicated to the user. The user must satisfy himself of the suitability of the product for the intended application and surface, as surface and application conditions are beyond our control. The user must also satisfy himself of the suitability of the product in circumstances other that those set out in this data sheet. The user should also maintain appropriate control procedures. Should further information be required, please contact our Technical Department.

Transocean Coatings employ a policy of continuous development and the technical data could be revised as a result of experience or new information becoming available.

Print Date	27-3-2024