Transozinc Silicate 147

Product code:
TO 1.47

A moisure curing inorganic zinc silicate with a high 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 easier to mix as well as safer to use for the applicators.
Transozinc Silicate 147 zinc level in the dry paint film complies with ISO 12944 and SSPC Paint 20 level 2. It can be recoated with various Transpoxy series products as well as Transosil- and Transotherm series products.

Physical properties:

Colour	Grey
Gloss / Appearance	Flat
Volume Solids	Approx. 55 %
Specific gravity	Approx. 2.3 g/ml
VOC	Approx. 517 g/liter
Flashpoint	Binder >13 °C Zinc paste >25 °C

Usage data:

Mixing ratio 40:60 (Binder:Zincpaste) [2:3]

Film thickness	Dry film thickness per coat (µm)	Wet film thickness per coat (µm)	Theoretical spreading rate (m^2/l)
Range	50 - 80	115 - 180	9 - 5.6
Recommended	70	160	6.4

Curing Times	Substrate temperature			
	10°C at 65% RH	23°C at 65% RH	30°C at 65% RH	
Touch dry	60 Minutes	30 Minutes	15 Minutes	
Dry to handle	6 Hours	4 Hours	2 Hours	
Full cure	48 Hours	24 Hours	12 Hours	
Potlife	10 Hours	8 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							
	10°C at 65% RH		23°C at 65% RH		30°C at 65% RH			
Recoated with	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Single pack products	2 Days	Indefinite	1 Day	Indefinite	12 Hours	Indefinite		
2-pack products	2 Days	Indefinite	1 Day	Indefinite	12 Hours	Indefinite		

Recoating information is for guidance only and varies with local climate and environmental conditions. For specific recommendations, consult your local Transocean representative.
Best intercoat adhesion is achieved when the subsequent coat is applied before the preceding coat has fully cured. Extended recoating intervals apply only to ambient atmospheric exposure. After prolonged exposure, 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 8504-1:2001. 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 8501-4: 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:

Conditions:

Relative humidity must be between 65% and 90% during application and curing. Substrate temperature must be ≥5°C and ≥3°C above the dew point. Measure air temperature and relative humidity at the substrate.
Zinc silicate paints require moisture for curing. At low humidity the curing can be improved by gently sprinkling clean fresh water over the paint film, and/or by artificial humidification of the surrounding atmosphere. Consult your Transocean representative before doing so.
For oprimal application results, keep the binder (part A) temeprature below 30°C. Especially in warm climates, keep the binder (part A) out of direct sunlight.
When recoating, air trapped in the zinc silicate film may cause bubbling ('popping') in freshly applied coating. To avoid this, use a mist-coat/full-coat application technique or apply a sealer.

Methods:

Guiding data Airless spray	Pressure at nozzle	120 - 150 bar
		0.53 - 0.64 mm (0.021 - 0.025 in.)
	Spray angle	40 - 80 degrees
	Volume of thinner	0 - 3%
Guiding data Airspray	Pressure	4 - 5 bar
	Nozzle size	1.8 - 2.2 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

Store the product in accordance with national and local regulations. Keep tightly closed containers in a dry, cool, well-ventilated area, away from heat and ignition sources.
Shelf life depends on storage temperature. Typical shelflife (at 25°C) for binder (Part A): 6 months, for zinc paste (Part B): 12 months. Storage above 25°C may reduce shelf life. Do not store binder (Part A) above 40°C.
Shelflife Component A (binder): 6 Months
Shelflife Component B (zinc paste): 6 Months

Health and safety

Observe the safety warnings on the container label. A Safety Data Sheet (SDS) is available upon request.Comply with all applicable national and local safety regulations.
For professional use only. Wear appropriate PPE (overalls, gloves, goggles, respiratory protection, etc.) to avoid skin and eye contact.
Spraying should be carried out under well-ventilated conditions. If the product is flammable (see label/SDS), keep away from sparks, open flames, and heat sources. No smoking in the work area.
Avoid inhaling vapors and particulates. Maintain airborne concentrations below Occupational Exposure Limits (OEL) through adequate natural ventilation during application and drying.
In enclosed areas with insufficient ventilation, use local exhaust ventilation. If this is not feasible, wear a suitable respirator. Users must be trained in its proper use and limitations.

Disclaimer

The information in this Product Data Sheet is provided in good faith and based on our current knowledge. However, Transocean Coatings cannot control substrate quality, surface preparation, application conditions, or environmental factors that may affect product application and performance. Accordingly, we accept no liability for the performance of this product or for any loss, damage, or injury arising from its use, whether direct, indirect, or consequential. Should any conflict arise between translations, the English version of this Product Data Sheet is authoritative and binding.

This Data Sheet supersedes all previous versions and must be communicated to all users. Users must:
- Conduct their own trials to verify the product's suitability for their specific application and intended purpose.
- Confirm compatibility with intended substrates and conditions, which are beyond our control.
- Implement appropriate quality control procedures during application.
- Verify suitability for circumstances not covered in this Data Sheet.

Transocean Coatings maintains a policy of continuous product development. Technical data may be revised as new information or experience becomes available. For further information, contact our Technical Department.

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