

TEKNOZINC ESI 3180

Zinc silicate paint

Fast-drying, two-component, moisture-curing zinc rich ethyl silicate paint with a very short overcoating time. Zinc content in the dry coating min. 80%. This product complies with ASTM D520 type II zinc dust.

For priming or independent protection of steel constructions exposed in the industrial, marine and seaside atmosphere or submerged in solvents and steel constructions exposed to the impact of temperatures up to +400°C.

After drying TEKNOZINC ESI 3180 forms an inorganic zinc silicate coating which protects steel cathodically, like zincing. The paint has an excellent resistance to mechanical abrasion, different solvents and oils, even on immersion and to continuous exposure of dry heat up to +400°C. Under the influence of high temperature, the coating changes the colour to reddish grey, which does not affect its protective properties.



TECHNICAL DATA

Fields of application	Steel constructions, Storage tank
Recommended substrate	Steel
Binder	Zinc silicate
Solids	58±2% by volume (ISO 3233)
Total mass of solids	Approx. 1800 g/l
Volatile organic compound (VOC)	Approx. 430 g/l (DIRECTIVE 2010/75/EU) The VOC value provided is the average value for factory produced products, and consequently it will be subject to variations between individual products covered by this Technical Data Sheet.

Theoretical spreading rate	Dry film (µm)	Wet film (µm)	Theoretical spreading rate (m²/l)
	60	103	9.6
	80	139	7.2

Maximum recommended dry film thickness is 100 µm. Thicker coats may lead to cracking.

Practical spreading rate The values depend on the application technique, surface conditions, overspray, etc.

Colours	TO-925 greenish grey
Gloss (60°)	Matt
Hardener	Comp. B: TEKNOZINC ZINC DUST
Mixing ratio (A:B)	4:1 parts by volume

Pot life, +23°C	8 h
Thinner	Thinning is not recommended. In exceptional circumstances use TEKNOSOLV 6060 or TEKNOSOLV 693.
Storage	The storage stability is shown on the label. Store in a cool place and in tightly closed containers.

DIRECTION FOR USE

Surface preparation	<p>Remove from the surfaces any contaminants that might be detrimental to surface preparation and application. Before cleaning of surface, it is recommended to wash it with water with addition of OLICLEAN 123 and then rinse with fresh water. The surfaces are prepared according to the different materials as follows:</p> <p>STEEL SURFACES: Remove mill scale and rust by blast cleaning to preparation grade Sa 2½ (standard ISO 8501-1). The surface to be treated must be dry, clean, salt-, grease- and dust-free.</p> <p>The place and time of the preparation are to be chosen so that the prepared surface will not get dirty or damp before the subsequent treatment.</p> <p>Additional instructive information for surface preparation can be found in standards EN ISO 12944-4 and ISO 8501-2.</p>
Application method	Airless spraying

Application

Take into consideration the pot life of the mixture when estimating the amount to be mixed at a time. Inadequate stirring or incorrect mixing ratio results in imperfect curing and impaired film properties.

TEKNOZINC ESI 3180 is supplied in two components consisting of a canister containing a pigmented binder and a drum containing a bag with zinc dust. Before mixing, remove the bag with the zinc dust. The canister should be shaken to obtain a homogeneous content. Make sure that there is no sediment on the bottom. Then pour the content of the canister into the empty drum and add slowly the zinc dust to the binder. During adding the zinc dust to the binder use a mechanically agitator to obtain a homogeneous consistency. Before application, the product should be filtered through a sieve with a mesh side dimension of min. 200 µm.

Apply by airless spray equipped with a mixer. The paint must be frequently stirred in the course of work in order to avoid sedimentation of the zinc dust.

Airless spray application recommendation:

nozzle size 0,015 - 0,023"

pressure 15 - 20 MPa.

While drawing up the painting specification, depending on the destination and type of a construction, it is possible to assume the thickness of a single coat other than the one recommended for application in the manual. During the airless spraying, the typical range of coat thicknesses is from 50 to 80 µm.

Application conditions

During the application and drying period the temperature of the surface shall be above -5°C (frost- and ice-free surface), at least 3°C above the dew point of the ambient air and the relative air humidity 50 – 95%. Adequate ventilation during application and drying period should be provided.

At low air humidity, it is possible to speed up the process of curing the coat by spraying the painted surface with water. The spraying may be started after 1 hour (at 23°C) from application of the TEKNOZINC ESI 3180 paint.

Drying time	+23 °C / 50% RH (dry film 70 µm)
- dust free	after 10 min
- touch dry	after 15 min

Overcoatable	By itself* or by suitable paints on galvanized zinc surfaces	
	Surface temperature	Min.
		Max.
	+23 °C	4,5h (RH above 55%)
	+5 °C	18h (RH above 55%)

* Only for minor repair objects, otherwise please contact Teknos.
Prior to overcoating verify a value of 4 via ASTM D4752 MEK rub test.

For overcoating can be used epoxy or silicon Teknos paints in accordance with the specification. Make sure that TEKNOZINC ESI 3180 film withstands light rubbing with a cloth wetted with MEK-solvent according to ASTM D4752 (so called MEK-test). The unseasoned zinc-silicate coatings are porous and therefore, the bubbling and cratering of the coating may occur during the application of the consecutive layers. In order to counteract this phenomenon, it is recommended that the next layer is applied in a mist coat, an example is EPIRUST diluted 10-20%, EPIRUST 2012 diluted 10- 20%, TEKNOPOX PRIMER 7-00 diluted 20-30% or TEKNOPOX PRIMER 87-00 MIOX diluted 20- 30%.

Cleaning TEKNO SOLV 9506 or TEKNO SOLV 564

HEALTH AND SAFETY

Safety and precaution measures See safety data sheet.

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