

Product code:

477-041: part A

477-042: part B

General description: Two-component, zinc-ethyl silicate-. Forms a continuous coat of metallic zinc that provides cathodic protection to metal (as in hot galvanization). Complies with the composition and performance requirements of SSPC paint 20.

Product Features:

- Superior anti-corrosive primer for protection of steel.
- Fast drying.
- Resistant to dry heat at temperatures up to 450°C.

Recommended Uses:

- Suitable as an excellent anti-corrosive coat for steel, ventilation pipes, sub-insulation and oils and fuel storage.
- In clean or mildly corrosive environments, may be applied in a single coat of 75 microns.
- In acidic or alkaline environments, must be coated with a top-coat such as chlorinated rubber, vinyl, epoxy or Polyurethane.

Technical Data:**Shade:** Grey**Gloss at 60°:** Matt**Volume Solids:** 69%**Dry film thickness per coat:** 50-75 micron (Caution: Capillary cracking may occur in layers thicker than 120 microns).**Calculated coverage per coat* (sqm./liter):** 9.2-13.5 – in the above thicknesses**Recommended thinner:** Thinner 280**Mixing ratio by weight:** part A:part B = 100:266**Shelf life**:** 6 months**Drying times (hours):**

Drying method	5° C	15° C	25° C	40° C
Touch dry	30 min	20 min	10 min	5 min

Hard Dry	3	3.5	1	0.5
Minimum interval between coats	18	9	4.5	1.5
Maximum interval between coats	Extended	Extended	Extended	Extended

Pot life (hours):

	5° C	15° C	25° C	40° C
time	12	8	4	2

Surface preparation and system recommendation:

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504-2000.

Blast area to Sa-2.5 (per Swedish Standard) and profile of 50-75 microns. If oxidation has occurred between blasting and application of Zinc Silicate the surface should be re-blasted. Apply one coat of Zinc Silicate to 75-80 microns.

Dry film thickness of this product shall not exceed 120 microns, to avoid possible formation of "mud cracking".

Application:

Painting method	Inlet pressure atmospheres	Spraying pressure PSI	Nozzle diameter	Recommended percentage thinning with Thinner 280
Brush/roller			-	5%
Spraying with air gun – up to 60 microns per layer	3-4			15-20%
Airless spraying with a compression rate of at least 45:1	5-6	2000-3000	0.021 "- 0.023 "	10-15%

Thinner 280 may be added as recommended in the table above.

Zinc Silicate is applied in 2 parts, a liquid binder (Part A) and a powder component (Part B). The powder (Part B) should be slowly added to the liquid binder (Part A) whilst stirring with a mechanical mixer. Do not add liquid to powder. Material should be filtered prior to application, and should be constantly mixed in the pot during spraying. After mixing product should be used within the working pot life specified.

Thinner for Cleanup:

Thinner 280.

Recoating aged zinc silicate:

At relative humidity below 50%, curing will severely decrease and may damage the coat, humidity may be increased by water spraying.

Before over-coating with recommended topcoats ensure the Zinc Silicate is fully cured. A solvent rub test conforming to ASTM D4752 should be undertaken. A value of 4 indicates a satisfactory degree of cure for over-coating purpose. If weathering has occurred all zinc salts should be removed from the surface by fresh water washing, and if necessary scrubbing with bristle brushes.

Typical intermediates and topcoats:

Epogal, Epoxy EA9, Ecopoxy 60, Ecopoxy 80, Multipoxy, Epitamarin Solekote.

In some cases it may be necessary to apply a mist coat of suitable viscosity to minimize bubbling. This depends on the age of the Zinc Silicate, surface roughness and other conditions during application and curing. An epoxy sealer coat such as Epogal or Epoxy EA9 can be used to reduce bubbling problems.

Notes regarding painting:

Top coating:

The dried film of Zinc Silicate is very porous, containing a large amount of air in the pores. If it is top-coated, air may be entrapped or thinner may be released into the film, which may lead to blisters formation (boiling). To avoid this, spray a diluted coat of the desired paint, diluted up to 30%, in the form of thin mist, to ensure maximum penetration into the pores of the Zinc Silicate film and expulsion of the entrapped air. Then a full top-coat, in the desired thickness may be applied.

INSTRUCTIONS FOR PROPER USE AND SOME REMARKS REGARDING APPLICATION:

Product Description

Two-component primer, designed for anti-corrosive priming of steel. The protection is provided by a continuous metallic film, which upon contact with ferrous substrate provides cathodic protection to the metal. The continuity of the zinc film is achieved through the extremely high content of metallic zinc particles and consequent low content of binder, thus creating the essential contact between the zinc particles.

Special properties and application

- a) In clean or mildly corrosive environments, Zinc Silicate can serve as a single-coat protective primer, provided that the film thickness is 60 microns at least. Zinc metal is quickly attacked by highly acidic or alkaline environments or by immersion in sea-water. If the paint is intended for use in such environmental conditions, it is essential to top-coat it with a suitable chemical resisting top-coat (such as chlorinated rubber, vinyl, or epoxy).
- b) Heat resistance: The binder of this primer is inorganic silicate. In contrast to organic binders in normal paints, this composition provides dry heat resistance up to 400-450°C.

Drying mechanism

The ethyl silicate based binder reacts after application with atmospheric moisture. This reaction increases the specific weight of the polymer while releasing organic fractions. After a few hours, depending on the relative humidity, an inorganic polymeric silica matrix is formed

Surface preparation

Since this cathodic protection is based on an electro-chemical mechanism, it is essential to provide direct contact between the coat and the metal. Even in the presence of a sound primer, other than Zinc Silicate (such as shop primer, it is essential to remove it completely. Prepare surface by blasting to near white metal (Sa-2.5 per Swedish Standard) for normal exterior resistance and to white metal (Sa 3) where the object is intended for immersion resistance. The desirable metal profile after sandblasting is 25-50 microns. Remove dust and other contaminants before application. Apply Zinc Silicate as soon as possible after cleaning to avoid rust onset and contamination. Never leave cleaned surface exposed overnight.

Paint preparation

To achieve high zinc particles content, work with a very low viscosity binder. Yet, as specific weight of zinc is very high, it tends to settle rapidly in thin medium. Therefore, the product is supplied in two parts. Ascertain that the packaging is tightly closed to prevent moisture penetration. Part A is the binder and part B is the zinc powder (discard the small bag of desiccant inside the zinc powder before mixing part A with part B).

Mixing procedure

Start stirring part A in a mechanical mixer. Add the zinc powder (part B) slowly into part A, while mixing. Rapid addition may cause lumps formation due to insufficient wetting of the pigment. Continue stirring until a completely homogeneous and smooth mixture is obtained. Strain through a 30-60 mesh sieve before application, to remove any lumps and granules. Thin, as needed, using only thinner 280 (about 10-30%, according to volume) and no other thinner.

Painting equipment

You can apply this paint using airless sprayers, designed to spray this product. Due to high wear rate, use sprayers with high wear resistance and a pressure pot with a mixer. Small areas may be painted by brush.

Application

This paint is very sensitive to application conditions and any deviation may cause surface defects described below.

Film thickness

Recommended dry film thickness is 75 microns in one coat. Do not apply dry thickness coats exceeding 120 microns to avoid spontaneous "mud cracking". Control applied wet thickness constantly, because it is very difficult to correct any deviation in film thickness, due to poor adhesion of the coats after the primer dries. Where dry thickness is lower than the recommended thickness, compensate during application of following coats.

In case of mud cracking, remove loose coats and repair by applying a Zinc Rich Epoxy coat. It is best to perform this repair using a brush or by spraying a thinned coat, while avoiding unnecessary overlaps. In case of Over Spray, the painted surface is very rough and covered by a film; the paint is uneven and lacks mechanical properties. Remove the powdery spray with emery cloth and smooth the surface evenly. We then recommend rinsing with water.

Over spray

May occur due to several causes:

- a) Insufficient thinning.
- b) Excessive distance between the spray nozzles to the surface.

c) Application during hot and dry weather or when the metal plate is very hot.

Drying conditions

As stated above, the drying mechanism is based on chemical reaction with water vapors in the air. Therefore, it is not recommended to apply this paint in relative humidity below 50% and at environmental temperatures over 40°C. When application must be performed at relative humidity below 50%, spray water mist on the surface after the paint is dry to touch (about 4 hours), to speed the paint's hardening. This paint requires 7 days of drying to develop maximum resistance to solvents. Do not apply when rain, heavy dew or frost are expected during or within two hours after application. Under correct conditions, the paint dries to touch after a few minutes and to treatment after 24 hours. Drying time for top-coating is 24 hours minimum.

Cautions

Application and use of the product should be done in accordance with the Israeli Safety, Health and Environmental regulations. Read the safety instructions and warnings on the safety data sheet – which may be obtained from the Tambour Safety Department – Phone: 04-9877483 and on the product label.

Keep away from fire and sparks. Non-edible. Allow adequate ventilation of the workplace. When spraying do not inhale fumes. Use appropriate protective measures, refer to the Safety Data Sheet.

Never mix this material with others when not specifically recommended by us.

General notes:

The data presented are based on experience and knowledge accumulated over the years. We reserve the right to update and/or change it without notice. Obtaining the desired results is contingent upon correct product application while adhering to instructions of use. Please ensure you check before applying the product that it is indeed designed for the intended usage and that the surfaces to be painted are properly prepared to apply the product.

For additional information call Tambour's professional hotline: *6477

* Actual coverage depends on several factors: the surface, the application method, paint's shades, the painter's skill and weather conditions at the site. It is customary to assume that it accounts for about 75% of the calculated coverage.

** At 25°C and 65% relative humidity.