# Application Manual

Product description:
See Technical Data Sheet TRIOTEMP 400

## TRIOTEMP 400

Zinc-silicate coating, 2K

**CONTENTS:**

The Manual describes the surface preparation; the product preparation for the application; technical application process and equipment; storage conditions; occupational safety; fire precaution measures; environmental protection; first aid measures.

**SURFACE PREPARATION:**

The material is applied to a prepared and dry metal surface. The preparation process includes the following operations: elimination of surface defects up to P2 according to ISO 8501-3; degreasing of the surface (if necessary; recommended solvent – P4); cleaning of the surface to the degree of Sa $2^1/_2$ according to GOST R ISO 8501-1, the surface profile after cleaning should be of medium roughness (comparator "G"), see ISO 8503-2, recommended roughness surfaces Rz - (40-100) microns.

**PREPARATION FOR THE APPLICATION:**

TRIOTEMP 400 - quick-drying two-component material with zinc dust based on ethyl silicate with a dry residue of 60 ± 2% by volume.

The material is delivered in buckets of 10 liters.

The material is two-component. Mixing ratio: 1: 3 by weight (binder: zinc powder).
To avoid the formation of lumps when mixing the components - do not add a binder to the zinc powder!
Mix the binder thoroughly until complete uniformity is achieved. Gradually add the zinc powder to the binder container while constantly stirring the mixture with a mechanical mixer, maintaining a low mixing speed. At the end of the mixing process, thoroughly stir the zinc powder in the binder with a high-speed agitator until a homogeneous mixture is obtained.
During application, it is necessary to constantly mix the working mixture at a low speed, for example, using a separate dedicated pump.

**APPLICATION:**

Application method: Airless spraying/ pneumatic spraying. The brush is only for touch–up and repair.

Thinner: TRIOSOLV 0002 – (0 – 10) % vol., depending on the required thickness and application conditions. For more information, please contact O3-Coutings LLC.

Diameter of the nozzle (recommended): - For airless spraying - .011” - .019”;
- For pneumatic spraying - (1,7 - 2,0) mm

Operating pressure (recommended): - For airless spraying (at the pump outlet) – at least 150 bar.
- For pneumatic spraying (pressure at the inlet of the spray gun) – at least 2,0 bar.

Equipment flushing: Thinner TRIOSOLV 0002 (other solvents may be used as agreed with O3-Coatings).

Recommended application conditions:
• air temperature not lower than plus 5 ° C;
• Relative air humidity in the range of (60-90) %. At a relative humidity below 80%, it is recommended to moisten the surface to be painted approximately 1 hour after painting by pouring water under low pressure. Wetting should be repeated every hour for several hours.

**IMPORTANT:** Work is prohibited if the above parameters do not match the required parameters.

Before starting each work shift, it is recommended to check and fix the following parameters:
• environmental conditions (air temperature, relative humidity);

• surface temperature;
• absence of moisture and oil contamination on the surface;
• no dust on the surface.

Before starting the application of the material, pass a solvent through the paint machine to clean the equipment from previously used coatings. The solvent directly depends on the type of materials previously used. The equipment cleaning procedure is also recommended to be carried out at the end of the work shift.

The drying time for a dry film thickness of TRIOTEMP 400 (60-80) μm is given in Table 1.

**Table 1**

| Drying time at a DFT of (60-80) μm | | |
|---|---|---|
| The temperature of the surface to be painted | 5 °C | 23 °C |
| Drying to tack | 40 min | 20 min |
| Dry before applying the next layer | | |
| minimum | after 7 days (at RH 90% or humidification of surfaces) | after 6 hours (at RH above 80% or humidification of surfaces) |

Before applying the next layer make sure that dried primer layer TRIOTEMP 400 withstands the light rubbing of the rag moistened in MEK (ASTM D4752, MEK resistance, (4-5) points).
Materials suitable for galvanized surfaces are recommended as the subsequent layers.

When assessing the actual drying time, it is also necessary to take into account the presence of air flows and relative humidity.

Quality control of the finished coating is carried out according to the following characteristics:
• Appearance (there should be no streaks, cracking, peeling, etc.) - homogeneous coating of gray color;
• The dry film thickness is determined by rule 80-20:
80% of the measured thickness should be not less than the thickness specified in the specification (nominal thickness), 20% of the measured thickness should be at least 80% of the nominal thickness.

**IMPORTANT:** Do not exceed the set maximum layer thickness for single measurements – 100 microns.

**STORAGE CONDITIONS:**

Zinc-silicate coating **TRIOTEMP 400** is recommended to be stored in a dry dark place in a sealed original package at a temperature from 0 ° C to plus 30 ° C, avoid direct exposure to UV rays and other sources of heat.

Shelf life of **TRIOTEMP 400:** 6 months for binder, 24 months for zinc dust.
The material should be used within the manufacturer's recommended shelf life.
The decision on the use of material with a shelf life of more than recommended by the manufacturer is taken by the commission.

**OCCUPATIONAL SAFETY:**

**General rules:**

Works is carried out in accordance with the requirements of GOST 12.3.002, GOST 12.3.005, GOST 12.3.016.

Occupational hazards and harmful should be eliminated or reduced to acceptable levels.

When organizing and carrying out painting works, a physiologically justified work-rest schedule should be provided.

**Qualification requirements:**

The application of the corrosion resistant coating can be conducted only by adults who are at least 18 years old that have undertaken:
• occupational safety training – according to GOST 12.0.004, industrial sanitation, fire and electrical safety;
• professional training.

The executive officers are held responsible for complying with the occupational and industrial safety requirements when conducting the application works, in accordance with the requirements of SNiP 12-03 and SNiP 12-04.

Workers must know about:
• hazards, harmful occupational factors, harmful substances in the materials that affect the air in the workplace and how they can affect the human body;
• application instructions and procedures, and requirements for the workplace maintenance;
• workplace safety guidelines, fire safety, industrial health;
• personal hygiene requirements;
• requirements for using personal protective equipment (PPE);
• first aid procedures.

**Safety requirements for preparing and painting surfaces:**

All work related to the use of paint and varnish materials in the premises should be carried out with working general exchange supply and exhaust and local exhaust ventilation according to GOST 12.4.021. Ventilation should ensure the content of harmful substances in the air of the working area not exceeding the maximum permissible concentrations in accordance with the requirements of GOST 12.1.005, GN 1.2.3685.

Workers engaged in surface degreasing, preparation and application of paint and varnish materials should be provided with the following PPE:
- protective suits for painting are disposable or reusable, having a zipper running along the length of the product for ease of putting on and removing, elastic bands on the wrists, ankles and waist, hood;
- technical rubber gloves according to GOST 20010;
- safety glasses according to GOST 12.4.253, symbol 3 or similar with the same functional purpose;
- filter respirators with an insulating front part in the form of a half mask according to GOST 12.4.296 with a combined SIZOD filter that provides protection against gases, vapors and aerosols at the same time according to GOST 12.4.235 A3R3 (brown-white), AHR3 or similar with the same functional purpose;
- shoes made of leather, with a hard toe to avoid damage to the feet in the event of a heavy object falling; the sole is protected by a metal plate.

IMPORTANT: it is forbidden to work without a PPE!

Storage of organic solvents at the workplace is allowed in hermetically sealed containers in an amount of no more than a two-shift norm.
When working with solvents, observe the following safety requirements:
• use PPE of respiratory organs and eyes;
• work with the ventilation system switched on, ensuring the exchange of air of the required multiplicity.

When preparing the surface, a sandblaster worker must work in overalls made of dust–proof fabric and a MIOT 49 helmet, use PRB-5 respirators with forced air supply.

**Requirements for handling toxic substances:**

ZINC-silicate coating TRIOTEMP 400 is manufactured in accordance with TU 20.30.12-108-40141638-2018 and is recommended for use in the anticorrosive protection of various engineering structures, facilities, civil and industrial construction structures.

The container containing TRIOTEMP 400 must have a label with the exact name and designation of the material contained in it. The packaging must be complete and have a tight-fitting lid.

In case of accidental spillage of paint, cover the strait with sawdust or sand, before protecting the respiratory system. Polluted solvents, sawdust, sand, rags and rags should be collected in buckets and removed to specially designated places in accordance with the requirements of GOST 30772, GOST 30773, GOST 30774, GOST R 52107.

Eating and smoking are allowed only in specially designated places.

**FIRE PRECAUTION MEASURES:**

Fire precaution measures during coating application works must be carried out in accordance with the technical regulations related to fire safety requirements (July 22, 2008 №123-FZ) and other regulatory documents.

The applied paint and varnish materials belong to fire-hazardous materials, in this regard, fire-fighting measures are carried out at the workplace in accordance with the requirements of GOST 12.1.004 and Decree of the Russian Federation No. 1479 of 16.09.2020 "Rules of the fire regime in the Russian Federation".

**IMPORTANT**: Do not use water to extinguish fires.

When preparing the surface for coating application and when applying coating, it is prohibited:
• smoking, making a fire, conduct welding within a radius of 25 m from the workplace and along the vertical line below and above the area;
• to heat the production facilities and protected objects with electrical appliances in a conventional way.
In the event of a fire, evacuate all people from the area, report the fire to the fire service, remove coating materials from the workplace, and proceed to extinguish the fire with the available means in strict accordance with the approved plan.

**ENVIRONMENTAL PROTECTION:**

Coating application produces solid and liquid waste described in **Table 2**

**Table 2**

| Type of waste | Method of waste management |
|---|---|
| Solid waste:<br>Packaging of the product – Containers | The packaging can be disposed of as domestic waste. Containers can be reused for technical purposes after the product remaining on the inner walls of the container has dried. |
| Liquid waste:<br>- Thinner / flushing liquid for cleaning the painting sprayer<br>- Remains of the product | The waste is disposed of by the product user in accordance with GOST 30772, GOST 30773, GOST 30774, GOST R 52107 |

**FIRST AID MEASURES:**

**General information:**

In the case of a suspected poisoning, seek medical help.

**After inhalation:**

In the case of inhalation of the product, take the affected person to fresh air, keep them at rest and seek medical help.

**After eye contact:** In the case of an eye contact with the product, flush the eyes with a lot of clean running water and seek medical help.

**After skin contact:** In the case of skin contact, remove contaminated clothes and thoroughly clean the area of contact with soap and water. Do not use thinners or diluents.

**After swallowing:** In case of swallowing, keep the affected person at rest and immediately seek medical help.

**IMPORTANT:** Do not induce vomiting.