Application Manual

Product description:
See Technical Data Sheet TRIOCOR NS 4511

TRIOCOR NS 4511

Epoxy coating

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 with a temperature of at least 3 °C above the dew point.
The preparation process, depending on the type of surface, includes the following operations:

- elimination of surface defects to P3 according to ISO 8501-3;
- degreasing the surface (if necessary);
- surface cleaning:

carbon: to the degree Sa $2^1/_2$ in accordance with GOST R ISO 8501-1;
stainless steel: abrasive blasting with non-metallic abrasive, profile «Grit»;
aluminum: abrasive blasting with non-metallic abrasive, profile «Grit»;
galvanized steel: easy abrasive blasting with a non-metallic abrasive to a clean rough surface;
steel with interoperative primer – swipping;
painted surface – compatible coating without defects;
concrete – polymerization duration of at least 4 weeks, moisture content of no more than 5 %, closed jet of abrasive or grinding, complete removal of cement milk.
The recommended roughness profile is 50–75 microns.
During repair, local cleaning of P St 3 and desalination of the surface (if necessary) is allowed.
Dedusting of the surface to a degree of 2 with a particle size of no more than Class 2 according to ISO 8502-3.

The interval between surface preparation and application of the material is determined by the environmental conditions and the characteristics of the materials used in accordance with the manufacturer's recommendations.
Do not allow the application of the material when the overlap period of the material of the previous layer is exceeded in accordance with the recommendations of the manufacturer of the applied material.
If the overlap interval is exceeded, then to ensure the interlayer adhesion of the anticorrosive coating to the material of the previous layer, it is necessary to roughen the surface by swiping (light abrasive blasting, carried out at an angle of 30 ° to the surface to be cleaned and a pressure of ½ of the working pressure) before applying the anticorrosive material.

PREPARATION FOR THE APPLICATION:

TRIOCOR NS 4511 – two-component epoxy coating of polyamide curing with high molecular weight, with a volume solid of 65±5 %, the diluent TRIOSOLV 0002 is used.

The material is supplied in sets in eurocontainers: base – 20 l, hardener – 5 l.

After opening the container, the base and hardener must be mixed separately before application. Mixing is performed at a ratio of 4 : 1 (base : hardener) by volume, stir well until homogenous mix.

APPLICATION:

Application method: Airless spraying / Pneumatic spraying / Manual application.

Thinner: Thinner TRIOSOLV 0002 (if necessary), up to 5 % by volume with airless spraying, up to

12 % by volume with pneumatic spraying.
For more information, contact O3 Coatings.

Nozzle size (recommended):
- .015”–.019” at airless spraying;
- (1,7–2,0) mm at pneumatic spraying

Operating pressure (recommended):
- not less than 150 bar at airless spraying;
- (1,7–2,0) bar at pneumatic spraying

Cleaning of tools: TRIOSOLV 0002. (Can be to use other solvents in agreement with the company "O3-Coutings”).

Recommended application conditions:
• air temperature is not lower than minus 10 °C;
• Relative air humidity is not higher than 85 %;
• the temperature of the painted surface is at least 3 °C above the dew point;
• absence of direct precipitation.

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);
• dew point temperature;
• Surface temperature;
• absence of moisture and oily impurities on the prepared surface;
• No dust on the prepared surface.

Before starting the application of the material, pass through the painting apparatus a solvent for cleaning the equipment from the previously used paintwork materials. The solvent directly depends on the type of materials used previously. It is recommended to clean the equipment also at the end of the work shift.
The material is applied by airless spraying; it is allowed to apply with a brush or roller when applying the material in hard-to-reach places or on small surfaces.
When applied by airless spraying, the recommended thickness of the wet film (WFT) in one-layer (120-150) microns, which corresponds to the thickness of the dry film (DFT) (80–100) microns.
The drying time for a dry film thickness of TRIOCOR NS 4511 (85–90) μm is given in Table 1.

Table 1

Drying times at (85–90) μm DFT				
Surface temperature	0 °C	10 °C	20 °C	35 °C
Drying to degree 3	16 h	9 h	5 h	2 h
Recoating time				
Primer TRIOCOR NS 4511 or other coating system layer (Minimum)	16 h	9 h	5 h	2 h
Maximum	6 months			
Drying to a hard film (to degree 5, GOST 19007)	24 h	11 h	7,5 h	4 h
Drying to a hard film (to degree 7, GOST 19007)	29 h	18 h	12 h	5 h

The drying time is determined by the actual DFT and environmental conditions. The drying times given in this section are of a recommendation nature. When assessing the actual drying time, it is also necessary to take into account the presence of air currents and the relative humidity of the air.

Control of the thickness of the wet layer is carried out by the "comb" on the last tooth, touching the paint. Above each comb tooth is the size of its clearance in microns from the "basic" teeth (from 0). When performing measurements, the comb must be installed perpendicular to the plane of the painted surface. After each measurement, the surface of the "comb", in contact with the paint, must be thoroughly wiped with a clean rag.

The thickness of the wet coating layer should be fixed.

Quality control of the finished coating is carried out according to the following characteristics:
• Appearance (there should be no streaks, cracking, peeling, etc.) – a homogeneous matte coating of white color;
• The dry film thickness is determined by rule 80–20:
80 % of the measured thickness should be at least 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 allow the next layer to be applied until the required coating thickness is reached.

To measure the thickness of the dry film of coatings, it is recommended to use thickness gauges with a measuring range from 0 to 5000 microns.

STORAGE CONDITIONS:

Epoxy coating TRIOCOR HC 4511 is recommended to be stored in a well-ventilated dry room at a temperature from 0 to plus 30 ° C in sealed factory packaging, in a closed room, avoid direct exposure to UV rays.
The shelf life of TRIOCOR HC 4511 is 48 months for the base and 24 months for the hardener, subject to storage conditions. The material should be used within the shelf life recommended by the manufacturer. The decision on the use of a material with a shelf life of more than 48 months for the base and more than 24 months for the hardener is made 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 R 12.3.052.

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:
- safety training in accordance with Resolution of the Russia Federation № 2464 of 24.12.2021, including occupational hygiene, 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, SanPiN 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 A3P3 (brown-white), AHP3 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:

The epoxy coating TRIOCOR NS 4511 is produced in accordance with the technical specifications 20.30.12-118-40141638-2018 and it is recommended for use for anticorrosive protection of various engineering structures, facilities, building structures for residential, civil and industrial purposes.

The container containing the TRIOCOR HC 4511 epoxy coating must have a label with the exact

name and designation of the material contained in it. The container must be intact and have a tightly closing lid.

In case of accidental spillage of paint, the place of the spill should be covered with sawdust or sand, having previously protected the respiratory organs. Collect contaminated solvents, sawdust, sand, rags, rags in buckets and remove 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 areas.

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 coating materials are considered to be fire-hazardous, therefore, fire precaution measures in accordance with GOST 12.1.004 and Resolution of the Russia Federation № 1479 of 16.09.2020 "Rules of the Fire Fighting Regime in the Russian Federation" are carried out at the workplace.

IMPORTANT: Do not use water to extinguish fires.

When preparing the surface for coating application and when applying coating, it is prohibited:

•to smoke, make 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: 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: - Thinner / flushing liquid for cleaning the painting sprayer - 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.