Application Manual

Product description:
See Technical Data Sheet TRIOFLAME AK 7700

TRIOFLAME AK 7700

Fire protection intumescent coating

CONTENTS:

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

SURFACE PREPARATION:

Fire protection coating is applied to previously primed surface. The process of the surface preparation is determined by the condition of the primed surface.

The primed surface should be clean, without dirt, without dust, uniform and smooth before the fire protection coating is applied. Impurities should be removed with drinking water treatment with pressure 35 MPa, and oils and fats should be removed with a thinner in accordance with GOST 9.402 – 2004.

In case of the primer surface damage, defects, chips, it is necessary to restore it in accordance with the coating manufacturer approved methods.

The fire protection coating is applied to a clean dry primed surface after its preparation. The time interval between the surface preparation and the application of the fire protection coating is determined by the environmental conditions and the characteristics of the materials used.

If the surface is exposed to precipitation, make sure it is completely dry and repeat the surface preparation procedure before applying the coating.

Avoid applying the fire protection coating after exceeding the primer recoat interval recommended by the manufacturer of that primer. If the recoat interval is exceeded, to ensure the adhesion of the fire protection coating to the primer, roughen the surface by sweep blasting (light abrasive blast cleaning conducted at an angle of 30° to the surface and under half of the operating pressure) before applying the fire protection coating.

Acceptance of preparation of the primed surface is carried out with drawing up of the concealed works act.

PREPARATION FOR THE APPLICATION OF FIRE PROTECTION COATING:

TRIOFLAME AK 7700 is an one-component solvent based fire protection intumescent material, with volume solids of 72±5%, which is not require additional thinning when applying.

The fire protection coating is supplied ready for use in containers (20 kg net).

After opening the container, the product should be mixed 3-5 minutes until homogeneous with pneumatic, electric or other low- speed mixers.

APPLICATION OF FIRE PROTECTION COATING:

Application method: Airless spraying / Manual application.

Thinner is not recommended.

Diameter of the nozzle (recommended): .019 "- .025"

Equipment flushing: Thinner TRIOSOLV 0003.

Recommended application conditions:

- air temperature is at least minus 10°C;

- relative humidity no more than 85%;
- surface temperature at least 3°C above the dew point;
- absence of direct precipitation.

IMPORTANT: The application is prohibited when the above-mentioned conditions are not met.

Before the beginning of each working shift and every 4 (four) hours the following parameters must be checked and documented in the operations log:

- environmental conditions (air temperature, relative humidity);
- dew point temperature;
- surface temperature;
- absence of moisture and oil contamination on the primed surface prepared for application of the fire protection coating;
- absence of dust on the primed surface prepared for application of the fire protection coating.

Before the application, use a thinner to clean the painting sprayer from previously used coatings. The choice of the thinner directly depends on the type of the previously used materials. The equipment cleaning procedure must be also conducted at the end of each working shift and when the equipment is not used for more than 1 hour.

The product is applied with an airless sprayer; it can be applied with a brush or roller when applicating hard to reach or small areas.

Recommended equipment for application – painting machines Wagner HC 960; Wagner HC 970; GRACO XTREME X70; GRACO XTREME X90, GRACO DUTYMAX EH 675 DI or similar equipment.

Recommended parameters for devices with electric drive/driven by an internal combustion engine:
• working pressure 220-250 bar;
• engine power not less than 5.5 kW;
• the capacity of the device is not less than 10 l/min;
• material supply hose with an internal diameter of more than 3/8” (9.5 mm) and a length of no more than 15 m;
• the connection of the spray gun to the hose through the swivel is permissible;
• nozzle diameter .019” – .025”.

Recommended parameters for devices with pneumatic drive and compressor to them:
• operating pressure 220-250 bar;
• the capacity of the device is not less than 10 l/min;
• inlet pressure of at least 3 bar;
• maximum pressure at the inlet of the device:
➢ with compression ratio up to 70:1- 7 bar;
➢ with compression ratio up to 80:1- 6.2 bar;
➢ with compression ratio up to 90:1- 5.5 bar;
• the capacity of the feeding compressor is 1500 l/min;
• material supply hose with an internal diameter of more than 3/8” (9.5 mm) and a length of no more than 15 m;
• the connection of the spray gun to the hose through the swivel is permissible;
• nozzle diameter .019” – .025”.

Do all the work without using filters.

When applied with an airless sprayer, the recommended wet film thickness (WFT) with a single coat is 2000 microns, which corresponds to a dry film thickness (DFT) of 1440 microns.

The drying times for **TRIOFLAME AK 7700** with the dry film thickness of 1440 microns are shown in Table 1.

Table 1 – Drying time

Substrate temperature	0 °C	10 °C	20 °C	30 °C
To touch	1 h	40 min	30 min	20 min
To recoat	12 h	8 h	6 h	4 h

Drying time is thickness dependent. These figures are given as a guide only. Factors such as air movement and humidity must also be considered.
The wet film thickness control is determined by the last notch of a wet film thickness gauge that touched the film surface. Above each notch of the gauge the difference between its length and the length of the outside base notches (zero datum reference) is indicated.
When conducting measurements, the gauge should be set perpendicular to the coated surface. After each measurement, the parts of the gauge that were in contact with the coat must be carefully wiped with a clean cloth.

The wet film thickness of the coating must be recorded in operations log / site diary.

The quality control of the finished fire protection coating is done using the following characteristics:

- appearance (no sagging, cracking, peeling, etc.) – uniform, matte white-colored coating;
- thickness (the coating thickness is measured at a minimum of ten points per 1 m^2 for each 10 m^2 area of the object; the result is the arithmetic mean value of the results of all the measurements, and the standard deviation of the average $S(\bar{X})$ should not exceed 20% of the test results).

IMPORTANT: Do not apply the topcoat before reaching the required thickness of fire protection coating.

It is recommended to use coating thickness gauges with a measuring range from 0 to 5000 microns to measure the dry film thickness of the coating.

STORAGE CONDITIONS:

The flame retardant TRIOFLAME AK 7700 should be stored in a dry, dark place in a sealed factory packaging at a temperature of minus 30 ° C to plus 30 ° C, avoid direct exposure to precipitation, UV rays and other heat sources. If there are deviations from the storage recommendations, contact O3-Coutings LLC.

The shelf life of TRIOFLAME AK 7700 is 24 months when stored in the specified temperature range. 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 24 months is made by the commission.

OCCUPATIONAL SAFETY:

During the work, the requirements of GOST 12.3.002, GOST 12.3.005, GOST 12.3.016 must be observed.

General rules:

Dangerous and harmful production factors must be eliminated or reduced to acceptable levels.

When organizing and performing painting work, physiologically justified work and rest regimes should be provided.

Qualification requirements:

The application of the fire protection works can be conducted only by adults who are at least 18 years old that have undertaken:

- safety training in accordance with GOST 12.0.004, 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, 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 20010-93;
- safety glasses according to GOST 12.4.253-2013 (EN 166:2002), 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 12.4.296-2015 with a combined SIZOD filter that provides protection against gases, vapors and aerosols at the same time according to GOST 12.4.235-2012 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:

Fire protection coating **TRIOFLAME AK 7700** has a certificate of conformance and is approved for production, delivery, sale and use for passive fire protection of various engineering structures, facilities, and housing, civil and industrial buildings.

The packaging of fire protection coating **TRIOFLAME AK 7700** must have a label with the exact name and designation of the product that it contains. Containers must be whole and have a tight-fitting lid.

In a case of an accidental spill, the spill area must be covered with sawdust or sand after ensuring respiratory protection. Contaminated thinners, sawdust, sand, rags, cloths must be collected in pails and removed to specially designated areas in accordance with the requirements of GOST 30772, GOST 30773, GOST 30774, GOST R 52107.

Eating and smoking are only allowed in 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 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:

- 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 fire protection coating – 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, removed 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.