

Technical document: TD-017, English translation

FIRESTOP Steel X-MART 111 Technical Specification

I FIRESTOP Fire-protection System

1.1. General information

FIRESTOP Steel X-MART 111 is an expanding (intumescent) coating aimed for the protection of steel constructions. If fire occurs, intumescent coating prevents the effects of fire and insulates constructions protecting it over a certain period of time. Intumescent coating FIRESTOP Steel X-MART 111 has been tested and approved by certified institutes. The copy of certification document is issued to the customers as a part of Technical documentation. For additional data consult General product info, available on request.

FIRESTOP Steel X-MART 111 is coating for indoor and outdoor use - internal and semi-exposed structures. Compared to standard intumescent coating intended for the protection of interior steel elements, FIRESTOP steel X-MART 111 has increased resistance to precipitation and other atmospheric influences which enables additional application in the exterior (semi-exposed structures - limited exterior conditions). For long-term resistance to atmospheric and mechanical influences and use in the exterior FIRESTOP steel X-MART 111 must be protected with a top coating.

1.2. Definitions of terms in this document

Producer – FIRESTOP Internacional d.o.o. (data in section VIII),

Customer (buyer or investor) – one who purchased and used product,

Fireproof coating – FIRESTOP Steel X-MART 111 produced by mentioned producer,

TD – stands for this document.

1.3. FIRESTOP system consists of:

Base anticorrosive coating - primer,

Interlayer - intumescent coating,

Top layer - decorative coating.

1.4. Base anticorrosive coating - primer

Anticorrosive primer should be applied onto clean and prepared steel surfaces. FIRESTOP Steel X-MART 111 expanding coating should be applied onto a compatible base coating – primer. The use of a primer is obligatory in the FIRESTOP system. We recommend:

PRIMTEC Steel B100, alkyd synthetic primer,

PRIMTEC 2K EPOX S200, 2K epoxy primer,

but other compatible primers are also acceptable.

The fireproof coating may be applied onto them after drying (usually after 24 hours).

If the steel is already coated with other primer, contact FIRESTOP Internacional technical service for advice prior to FIRESTOP Steel X-MART 111 application. FIRESTOP Steel X-MART 111 should not be applied onto chlorinated rubber, bitumen - based primers or thermoplastic preparatory coatings. Surface preparation should be in accordance with the instructions for the application of the selected base coating – primer.

General conditions for application and required thickness are in technical specifications for these products.

1.5. Interlayer expanding fire-protection coating

Generic type:

FIRESTOP Steel X-MART 111 is an expanding (intumescent) water-soluble coating intended for fire protection of steel and steel structures.

Description:

FIRESTOP Steel X-MART 111 is an expanding coating which forms a thin white film on a steel surface. It contains materials which at relatively low temperatures

(180 - 220°C), usually as a consequence of fire, chemically react and release gases causing the coating to expand. The resulting carbon material serves as insulator and protects steel construction profiles onto which it is applied for a certain period of time.

Properties:

- * Water-based – may be used in residential buildings or places where thinner vapors may be hazardous. It is free of halogen elements.
- * Simple application: without thinner and dissolving, the coating is applied directly from the package.
- * High fire resistance with thinner film.
- * Excellent adhesiveness.
- * The coating provides a film of great hardness.
- * Application by spraying – with airless spray-pump, at the construction site or elsewhere prior to steel structure erection or on assembled construction.
- * Simple and quick repair of damaged layers of the coating that occurred during structure installation.
- * Long life in exploitation.

1.6. Top coats:

Once FIRESTOP Steel X-MART 111 is applied in the recommended DFT (dry film thickness) and when it is completely dry, a top coat may be applied onto it. The top coat has a dual function in the system: it makes steel elements decorative and protects intumescent coating from humidity and other atmospheric impacts and mechanical damage. The colour is optional and its shades are in accordance with RAL.

Top coat is not always obligatory in FIRESTOP system. Top coat is recommended in cases of high humidity and other damaging effects on steel constructions (chemical etc.), because it prolongs fire protection durability. If top coat is only matter of decoration because the colour of FIRESTOP Steel X-MART 111 is white, investor chooses its colour. In any case, top coating protects fireproof coating.

We recommend:

CENTURION B100, synthetic top coat

CENTURION 2K PUR S200, polyurethane top coat

produced in RAL color chart shades. Also other compatible top coats can be used.

General conditions for application and required thicknesses are in technical specifications for these products. Test results and additional data are available on written request.

II Physical and Chemical Data (Typical Values)

2.1. Details

Technical properties:

No.	Description	Recommended value
1.	Colour	White, matte
2.	PH value	8.00 - 9.00
3.	Viscosity	12000 - 25000 mPa*s, R6/20rpm
4.	Solid matter content	70% (+/- 2%)
5.	Density	1.25 - 1.40 g/cm ²
6.	Solubility	Water-soluble
7.	Drying time*	1 - 2 hours at 21°C
8.	VOC content	<20 g/l

*Drying time could be modified due to several factors (temperature, humidity and air circulation, film thickness etc). For more information, see Application Manual (Technical document TD-018).

Table of gases (due to combustion of intumescent/expanding coating)

No.	Description	Chemical symbol
1.	Carbon monoxide	CO
2.	Carbon dioxide	CO ₂
3.	Ammonia	NH ₃
4.	Nitrogen	N ₂
5.	Water vapour	H ₂ O

2.2. Consumption

This information refers to assumed and practical consumption. Assumed consumption of the product is conditioned by cross section factors of steel elements and by required film thickness for certain fire protection period. Practical consumption of the product is conditioned by many factors which are monitored by customers (details in section 9.2. of Technical document TD-018).

III Approvals/Attestations

FIRESTOP Steel X-MART 111 is tested and attested at the:

- IMS Institute Belgrade, Serbia to 30, 60, 90 and 120 minutes of fire protection.

Test results and additional data are available on written request as a part of Technical documents (Test report, Certificate, Attest) which can be followed by Control conformity report if it is made or other additional documents.

IV Packing, Handling and Storage

Packing:	Plastic packaging, 22 net, or on request.
Storage:	Keep in the original closed packing. Keep indoors in a dry place. Keep from freezing. Storage temperature: 5°C-35°C.
Product life:	18 months, if stored in recommended storage conditions and in the original packing.

V Transport and Regulatory Information

ADR/RID/IMDG/IATA:	No restrictions
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Labels and Safety: Product is not classified in accordance with GHS/ CLP directives. Precautionary Statements are listed in Safety Data Sheet.

VI Conclusion

6.1. Producer liability

Producer is liable for claim that its product is fireproof in accordance with test results performed by certified institutes and published in Technical documents. This means that fire resistance is tested in accordance with valid Serbian and EN standards, as presented in Test report. To our best knowledge, technical data contained herein (and in our other technical documents, internal standards and recommendations) are true and accurate and they can be checked only according to methods mentioned in these documents. No other warranty and liability are implied. **The list of technical document is given in every our Offer to the customer. If not, customer should request these documents before accepting the Offer. In every case it is considered that customer is familiar with documents and producer liability is excluded.** Additional instructions are available on reasonable request.

Customer - user of product should contact FIRESTOP Internacional to check for data accuracy in this document

before giving specification or order. We assume no liability for execution of works, application conditions, protection of coated elements from atmospheric conditions or damages inflicted due to mechanical or other effects, safety regulation on worksite, etc. except in special cases defined in special contract.

Our liability, if any, is limited to the substitution of products with other delivery.

6.2. Trademark

FIRESTOP STEEL X-MART 111 is a trademark of our company, legally protected in Serbian Intellectual Property Office. It is within a proprietary program: FIRESTOP – expanding fireproof coatings – state of the art protection of steel and wooden structures: registration No. 4117, report No. A-727/08/01 and registered trademark (signet) No. 57833.

VII Date of Issue of this TD

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(Basic document)

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VIII Signature



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