

WATER-BASED INTUMESCENT PAINT FOR THE FIRE PROTECTION OF THE STEEL AND CONCRETE STRUCTURES



KM I-CHAR 21

KM I-CHAR 21 is used for the fire protection of steel structures, concrete, reinforced concrete, compartmentation masonries in brick or concrete and in other fields of application.

It guarantees a class of fire resistance up to 2 hours.

KM I-CHAR 21 is an high performances water-based intumescent paint, with low VOC. The active solids, the strength of the intumescent foam and the use of nanofillers guarantee an efficient fire barrier.

The fast development of a stable carbon foam with low coefficient of heat transmission guarantees an efficient protection of the flammable and inflammable substrates.

Its features are certified eco-compatibility by different reports as the Swedish EPD according to EN ISO 16000 for the indoor emissions.

(Intumescence is the “swelling during carbonization”)

Special chemical compounds react with temperature exceeding 200°C, forming a low density foam of volume up to 100 times the original mixture. This foam can guarantee an efficient barrier against the heat transmission, protecting the substrate.

The fire resistance of the structures is very important for the security in case of blaze. In case of fire in buildings, factories, hotels, airports, malls, schools, hospitals, cinema, theaters, multilevel car parks etc., the intumescent paints increase the strength of the structures, and they allow to save lives, preserving the structure, to allow the carrying of the occupants and the working of firemen.

USE AND APPLICATION

An adequate preparation (cleaning, degreasing and removal of fine particles) is necessary.

The steel surfaces are normally sandblasted (SA21 ½), before applying an anticorrosive primer.

At least two hands of paints are to be applied by airless systems, by crossing wet-on-wet.

A typical application of 1,5 mm (dry product)=2,7 kg/ m² (wet product) is made by two hands with a wet layer of 1 mm thick.

A right equipment is an airless piston pump, minimum compression ratio =40:1, minimum pressure 150 bar (for example GRACO MARK V or WAGNER ProSpray PS34), self-cleaning nozzle Reverse-A-Clean, nozzle diameter 45-50 mils = 1 mm, flexible feed hose of 3/8” and maximum 30 m long. In the normal spray applications, the medium volume flow changes between 3 and 6 l/min.

All filters of the equipment should be removed after every operating.

The application may be also done by brush or roller, with long single coats, without brushing. The brush/roller application will require more hands than the airless one.

During the application and the drying you will have to work under appropriate environmental conditions.

PRIMER AND RACCOMENDED FINISHES

KM I-PRIMER 036: Fast drying phenolic modification alchidic primer for steel and galvanized steel.

KM I-PRIMER 3500: Primer for concrete and masonry.

Different commercial primers are compatible. Our technical department may provide a list.

KM I-CHAR 21 is compatible with alchidic systems according to **ETAG 018** (point 5.0.4., evaluation in order to types). The direct application on the galvanized steel is possible according to the compatibility rapport **Pr-07-2.094n**. A better appearance and a less grip of dirt can be obtained by a finishing.

The intumescent paints aren't to be used in the presence of condensation or rain, in wet environments and outdoor. Waterproof finishes are necessary. Any finishing isn't generally required indoor according to **ETAG 018, class Z1** and **Z2**. Our acrylic waterbased paint **IDROSOL** is used on semi-exposed environments according to **ETAG 018, class Y**. Our bicomponent polyurethanic solvent-based **PURETHAN** is used on outside and totally exposed according to **ETAG 018, class X** or **ISO 12944, corrosion class C3**. The application must be particularly careful.

TECHNICAL SPECIFICATIONS

Density:	1.3 ± 0,05 kg/dm ³ at 20°C
Dry Residue:	78% ± 5%w/w - 67% ± 5%v/v
Colour:	white
Packaging:	bucket of 20 kg
Deadline:	12 months in original packaging and appropriate environment
Performance:	0,55 ± 0,05mm
Application:	Thickness of drying layer (DFT), 1kg/m ² wet (theoretical) normal by airless spray. On the little surfaces and retouching by brush or roller
Wet thickness of one hand:	airless spray: max 1300 µm (750 µm DFT) Brush and roller: max 500 µm (300 µm DFT)
Dilution:	not recommended. With 5% water-solution, where necessary
Drying *:	8 h to the touch/ 24 h - complete
Min. Application Temperature:	+5°C
Max. Application Temperature:	+45°C

(*) @ +20°C at 60% UR. The drying time depends on thickness, temperature, and relative moisture.

CERTIFICATIONS AND APPROVALS

KM I-CHAR 21 is certified according to European and other Standards .

The characteristics of fire protection for steel structures are certified according to **EN 13381-4** and **EN 13501-2**. Test reports and assessments according to **EN 13381-3** are available for reinforced concrete and prestressed reinforced concrete, both for beams/columns and floors/walls. The application on compartmentation masonry walls is certified according to **EN 13501-2** (tests according to **EN 1364-1**), both for walls made of plastered hallow brick and concrete blocks not plastered, with minimum thickness of 8 cm.

The application of **KM I-CHAR 21** is according to fire reaction class **B-s2, d0** on every woody substrate. The application with class C is guaranteed on not-fire retardant **XPS**.

The technical specifications have only an information value and the maximal results are guaranteed only after preliminary tests of application.