

**DATA SHEET 2145**  
2 10.02.2020

# HENSOTHERM 421 KS

## water-borne intumescent paint for indoor use

**PAINT TYPE**

HENSOTHERM 421 KS is a water-borne intumescent coating for indoor use, which reacts under the influence of heat by swelling to many times of its original thickness and producing a layer of carbonaceous foam that acts as an insulating layer to delay the steel from reaching its critical temperature.

**USAGE  
SPECIAL PROPERTIES**

Possible fire resistance rates are R15 - R150 for open steel profiles and R15 - R180 for closed steel profiles. Approved according to EN 13501-2, ETA No 16/0251, with CE markings applied according to 93/68/EWG.

**TECHNICAL DATA**

**Solids** 72 ±3% by volume (ISO 3233:1988)

Theoretical spreading rate	dry film thickness	wet film thickness	amount of wet paint to be applied	theoretical spreading rate
	290 µm	400 µm	540 g/m <sup>2</sup>	2.5 m <sup>2</sup> /l
430 µm	600 µm	800 g/m <sup>2</sup>	1.7 m <sup>2</sup> /l	
580 µm	800 µm	1070 g/m <sup>2</sup>	1.3 m <sup>2</sup> /l	

**Volatile organic compound (VOC)** abt. 0 g/l

**Density** 1,34 kg/l

**Drying time, +23°C / 50 % RH**  
(high relative air humidity and inadequate ventilation slow down the drying considerably)

**- Touch dry (dry film 500 µm)**

- + 10 °C / after 6 h
- + 20 °C / after 3 h
- + 30 °C / after 2 h

**Overcoatable**

Temperature	by itself	
	min.*	max.
+ 10°C	36 h	-
+ 20°C	24 h	-
+ 30°C	12 h	-

**\*See Overcoating instruction for additional information.**

Increase in film thickness and rise in the relative humidity of the air in the drying space usually slow down the drying process.

**Thinner, clean up** Water (thinning max. 3.0% by weight)

**SAFETY MARKINGS** See Safety Data Sheet.

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## DIRECTION FOR USE

### Surface preparation

Remove from the surfaces any contaminants that might be detrimental to surface preparation and painting. Remove also water-soluble salts by using appropriate methods.

HENSOTHERM 421 KS is designed to be applied over suitable prepared and primed steel substrate. Steel preparation by blast-cleaning to grade Sa 2½ (ISO 8501-1). Suitable primers are epoxy primers TEKNOPOX PRIMER 4, TEKNOPLAST PRIMER 5, TEKNOPLAST PRIMER 7, INERTA PRIMER 5, water-borne epoxy primer TEKNOPOX AQUA PRIMER 3, alkyd primer TEKNOLAC PRIMER 0168-00 and water-borne acrylic primer KORRO AQUA 2741.

The suitability of surfaces painted with other paint types must be evaluated separately.

### Application conditions

The surface to be painted has to be dry. During the application and drying period the temperature of the ambient air and the surface shall be above +5°C and the relative air humidity below 80%. The temperature of the paint during mixing and application shall be above +15°C. Additionally the temperature of the surface to be painted and the paint must be at least 5°C above the dew point of the ambient air. Good ventilation, increased temperature and lower relative humidity will speed up the drying process. However, it is recommended that the temperature of the steel to be painted is max. +35°C during the application and drying period.

### Fire retardant coating, application methods

The coat thickness to be achieved is determined by the structure to be coated, the so-called critical temperature and the fire endurance time required (cf. separate calculating instructions).

Application by airless spray is recommended to achieve the specified film thickness. Recommended pressure ratio is > 45:1 and airless spray nozzle 0.017" - 0.025". Recommended wet film thickness for the first layer of HENSOTHERM 420 KS is 400 µm. The maximum recommended amount to be applied in one application is 800 µm wet film thickness. Brush or roller application can also be used when maximal amount for one layer is 500 g/m².

### Overcoating

First layer of HENSOTHERM 421 KS must be allowed to cure for at least 24 hours before overcoating.

Application of top coat after through-drying of HENSOTHERM 421 KS, thus after at least 24 h. Through-drying of HENSOTHERM 421 KS can be checked by fingernail test.

Application on a test patch is recommended in order to define the application technique and dilution that gives the best possible top coating result. The possible porosity of the intumescent paint coat is to be considered when overcoating an intumescent paint. The best result is surest achieved by using the so-called mist coating technique, where the undiluted or diluted top coating is sprayed in many thin layers.

Surfaces painted with intumescent paint must be coated with a top coat before they are exposed to the temporary weathering caused during transport and assembling. Suitable top coat for application in paint shop is TEKNOCRYL 100 Acrylic Top Coat.

On ready installed structures in dry interior spaces (corrosivity category C1) can be used water-borne TEKNOCRYL AQUA 350 acrylate top coat and redecorating paints EKORA 20 and TELA 20.

Dry film thickness of the top coat layer should be 30 - 50 µm, except for EKORA 20 20 - 40 µm.

Objects coated with intumescent paint are susceptible to moisture and must therefore always be protected by appropriate methods from moisture during storage outdoors and transport, e.g. with tarpaulins. Objects painted with intumescent paint must be packed carefully and handled with care to avoid mechanical damages. Damaged areas must immediately be protected with top coat to avoid damages caused by moisture.

## ADDITIONAL INFORMATION

The storage stability is 12 months. Store in a cool place and in tightly closed containers.

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The information of this data sheet is normative and based on laboratory tests and practical experience. Teknos guarantees that the product quality conforms to our quality system. Teknos accepts, however, no liability for the actual application work, as this is to a great extent dependent on the conditions during handling and application. Teknos accepts no liability for any damage resulting from misapplication of the product. This product is intended for professional use only. This implies that the user possesses sufficient knowledge for using the product correctly with regard to technical and working safety aspects. The latest versions of Teknos data sheets, material safety data sheets and system sheets are on our home pages [www.teknos.com](http://www.teknos.com).

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