

## PRODUCT DATA SHEET

# Sika® Pyroplast® ST-100

## WATER BASED FIRE PROTECTIVE COATING SYSTEM FOR STEEL, INTERIOR USE

### DESCRIPTION

Sika® Pyroplast® ST-100 is a water based fire protection coating for interior structural steel work. Sika® Pyroplast® ST-100 is forming a heat insulating layer under the influence of fire and improves the fire resistance of steel parts.

### USES

Sika® Pyroplast® ST-100 may only be used by experienced professionals.

For interior use on structural steel members like columns, girders and framework with a highly effective protection to delay the steel from reaching critical temperatures.

Note: With critical situation i.e. frequent formation of condensation and / or heating up of surfaces above + 45°C, adequate arrangements should be taken.

No topcoat required for dry environments except for a coloured decorative finish.

### CHARACTERISTICS / ADVANTAGES

- VOC < 40 g/l
- Free of halogens and aromatic solvents
- Meets Type Z1 classification (i.e. internal conditions includes temperatures till +5°C and high humidity) without topcoat
- Complies with the highest quality requirements (level 4) of DGNB
- Preserves the appearance of a steel construction
- Applicable to filigree steel structures and complex steel building elements
- Simple application, does not increase static load
- Individual coloration possible with corresponding topcoat, various colour shades in RAL, DB, others available

### SUSTAINABILITY

- Complies with German AgBB even as coating system

### APPROVALS / CERTIFICATES

Independently fire tested and approved to major European and national standards including:

- BS 476 part 20-22 (ref. CF 744)
- DIN 4102 part 2 (ref. Z-19.11-1461)
- Water based coating for steel protection according to ETAG 018 part 2

## PRODUCT INFORMATION

Packaging	25 kg and 5 kg net.
Appearance / Colour	White
Shelf life	18 months
Storage conditions	In originally sealed containers in a cool and dry environment. <b>Protect against frost!</b>
Density	~1.27 g/cm <sup>3</sup>
Flash Point	Not applicable
Solid content	~68 % by weight

## SYSTEM INFORMATION

System	<u>Approved generic primer types:</u> On blast cleaned steel:  On manually de-rusted steel:  On galvanized steel: <u>Intumescent coating:</u> Without topcoat: With topcoat:	a) Short / medium oil alkyd, e.g. Sika® Permacor®-1705 b) 2-pack epoxy, e.g. Sika® Permacor®-2706 EG c) Zinc rich epoxy, e.g. SikaCor® Zinc R d) water dispersed zinc rich epoxy, e.g. SikaCor® Zinc W e) Zinc silicate, e.g. SikaCor® Zinc ZS (+ tiecoat Sika® Permacor®-2706 EG) SikaCor Aktivprimer Plus or Sika® Permacor®-2029 Sika® Permacor®-2706 EG Sika® Pyroplast® ST-100 Internal exposure, Type Z1 and Z2 Internal exposure, Type Z1 and Z2
	For additional protection of the intumescent coating and for decorative options we recommend the Sika® Unitherm® topcoats: Sika® Unitherm® Top W (water based) Sika® Unitherm® Top S (solvent based)	

## APPLICATION INFORMATION

Consumption	Example: 1000 µm dry ≈ 1500 µm to 1600 µm wet ≈ 2000 g/m <sup>2</sup> ≈ 1.44 l/m <sup>2</sup> .  Fire rate of Sika® Pyroplast® ST-100 depends on national standard. See corresponding separate consumption table / diagram. Note: Ratio dry film thickness - wet film thickness varies depending on application method. Furthermore, proper ventilation is recommended.
Relative Air Humidity	Max. 80 % , application temperature shall be at least ≥ 3 K above dew point. During application and drying of total Sika® Unitherm® coating system including Sika® Unitherm® topcoats as well as transportation special protection measures must be taken against weathering.
Surface Temperature	Object temperature not below + 5°C, to max. + 40°C* * If higher temperatures occur, please consult the Technical department for further assistance.

## Waiting Time / Overcoating

Sika® Pyroplast® ST-100 requires a minimum of 24 h drying prior to application with itself or topcoat Sika® Unitherm® Top W / Sika® Unitherm® Top S. A complete drying of the fire protection coating prior topcoat application is highly recommended.

Through-drying of Sika® Pyroplast® ST-100 can be checked by 'fingernail-test'.

Prior to further applications possible contaminations must be removed.

## Drying time

### Drying/Curing

Approx. 24 h for each fire protection coat for interior use at approx. + 20°C object temperature and 60 % relative humidity.

Different temperatures, different relative humidity and different fire protection coating thicknesses have an influence on drying time.

### Drying stage at + 20°C, 60 % rel. humidity and 1000 µm dry film thickness:

Drying stage 1	~20 min	(ISO 9117-5)
Drying stage 6	~60 min	

## APPLICATION INSTRUCTIONS

### SURFACE PREPARATION

#### Blast cleaned steel:

Blast-cleaning to Sa 2 ½ according to ISO 8501-1. Free from dirt, oil and grease.

#### Steel with manual de-rusting:

Manual de-rusting (wire brushing or power tool cleaning) according to ISO 8501-1, St. 3.

#### Galvanized steel:

Free from dirt, oil, grease and zinc salts.

In case of permanent exposure to submersion and condensation surfaces should be sweep blasted according to ISO 12944-4.

#### Other surfaces:

Tests should be carried out on the specific surfaces. Please seek further information on info data sheet no. 02 'Primers for Sika® fire protection coatings'.

For contaminated and weathered surfaces e.g. galvanized or primed areas we recommend to clean with SikaCor® Wash.

For further information, please consult the Technical Department.

### MIXING

Stir thoroughly with slowly turning mechanical stirrer, free of lumps.

### APPLICATION

The method of application has a major effect on achieving uniform thickness and appearance. Spray application will give the best results. The indicated dry film thickness is easily achieved by airless spray. In case of application by roller or brush, additional layers may become necessary to achieve the required coating thickness, depending on type of construction, site conditions, colour shade etc. Prior to application a trial on site may be useful to ensure the selected application method will provide the requested results.

#### Airless-spraying:

- Material shall be applied undiluted
- Airless spray equipment with transmission ratio > 45 : 1
- Screens and filters must be removed
- Hose diameter not below ¾"
- Whip 1,5 - 2 m, diameter 6 may be used
- Nozzle size 0.46 - 0.61 mm (0.019 - 0.024 inch)
- Hoses must be used for water based products only

#### Brushing / rolling:

- Material shall be applied undiluted
- Load natural fine bristle brushes or short pile lambswool rollers are recommended

Note: The Sika® Pyroplast® ST-100 shall be applied in several coats up to the final dry film thickness required. Wet film thickness max. 400 µm for first application coat on primer. Wet film thickness approx. 750 µm for each subsequent application coat is recommended.

### CLEANING OF TOOLS

Immediately after use with water.

## FURTHER DOCUMENTS

Various 'info data sheets' such as primers or repair instructions.

For further information please consult Sika or visit us at [www.sika.de](http://www.sika.de)

## BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data. Further notes and information data sheets on product safety and disposal can be found on the Internet at [www.sika.de](http://www.sika.de).

### DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

According to the EU Directive 2004/42/CE, the maximum allowed content of VOC (product category IIA / i type Wb) is 140 g/l (Limits 2010) for the ready to use product.

The maximum content of Sika® Pyroplast® ST-100 is < 40 g/l VOC for the ready to use product.

## LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

### Sika Deutschland GmbH

Industrial Coatings  
Rieter Tal  
D-71665 Vaihingen / Enz  
Phone: +49 (0)7042 109-0  
[industrial-coatings@de.sika.com](mailto:industrial-coatings@de.sika.com)  
[www.sika.de](http://www.sika.de)



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