

## PRODUCT DATA SHEET

# Sika® Unitherm® Platinum

Solvent-free, ultra high build, 2-pack, modified epoxy based intumescent fire protection coating for internally or externally exposed structural steel

### DESCRIPTION

Sika® Unitherm® Platinum is a solvent-free, 100 % solids, 2-pack, modified epoxy based intumescent fire protection coating for internally or externally exposed structural steel, where it provides highest durability and combined corrosion protection (up to ISO 12944, corrosivity category C5) and fire protection (up to R90).

It is easily applied with standard airless spray equipment, requires no reinforcement, cures rapidly to a very tough and damage resistant finish, ready for handling and transport at the next day.

Solvent-free according to Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).

### USES

Sika® Unitherm® Platinum may only be used by experienced professionals.

Sika® Unitherm® Platinum is designed primarily for in-shop application on structural steel that is to be internally or externally exposed.

No additional sealers or top coats are required unless specific lightfast coloured finishes are required.

### CHARACTERISTICS / ADVANTAGES

- Solvent-free, 100 % solids
- Low odour and zero flash risk
- Halogen-free
- Easy application with single-leg spray equipment
- Can be applied in 1-coat for up to 4 mm dry film thickness, no additional reinforcement required at any time
- Application directly on blast cleaned steel surfaces
- Rapid cure - next day handling and transport
- Very tough - minimal handling damage and touch-up costs
- Highly resistant to mechanical impact and damage in service
- Suitable for small sections and complex steel sections
- Very good cosmetic appearance
- Durable for a long service life
- Expected life cycle > 25 years
- Meets Type X classification (i.e. exterior conditions), no primer and top coat needed
- Excellent corrosion protection properties according to ISO 12944, corrosivity class C5 (as coating system)
- Complies with the quality requirements (level 3) of DGNB

### SUSTAINABILITY

- Complies with Indoor Air Comfort Gold® limit values by EUROFINS, even as coating system

### APPROVALS / CERTIFICATES

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

- EN 13381-8 (ref: ETA 11/0014)
- BS 476 parts 20-22 (ref: CF 821)
- Coating based on epoxy resin for steel protection according to EN 13501-2 and ETAG 018-2, DoP, with CE-mark

## PRODUCT INFORMATION

|                     |  |                         |
|---------------------|--|-------------------------|
| Packaging           | Sika® Unitherm® Platinum                                       | 16.8 kg and 3.7 kg net. |
|                     | Sika® Thinner E+B  | 25 l and 5 l            |
| Appearance / Colour | Light grey, approx. RAL 7035                                   |                         |
| Shelf life          | 24 Months  |                         |
| Storage conditions  | In originally sealed containers in a cool and dry environment. |                         |
| Density             | ~1.3 kg/l (± 0.1)  |                         |
| Flash point         | Not applicable   |                         |
| Solid content       | ~100 % by volume   |                         |
|                     | ~100 % by weight   |                         |

## TECHNICAL INFORMATION

|                                       |  |                                  |                 |
|---------------------------------------|--|----------------------------------|-----------------|
| Abrasion resistance                   | ~65 mg/1000 R (load: 1000g; disc: CS 10) | (ISO 5470-1)                     |                 |
| Compressive strength                  | ~45 MPa                                  | (ISO 604)                        |                 |
| Tensile strength                      | ~10 MPa                                  | (ISO 527-2)                      |                 |
| Tensile adhesion strength             | Blastcleaned steel                       | ~10 N/mm <sup>2</sup>            | (EN ISO 4624)   |
|                                       | Primed steel                             | Dependent on the primer / system |                 |
| Chemical resistance                   | H <sub>2</sub> SO <sub>4</sub> (10%)     | 168 h                            | (EN ISO 2812-1) |
|                                       | NaOH (10%)                               | 168 h                            |                 |
|                                       | Mineral Spirit                           | 168 h                            |                 |
| Chemical resistance as coating system |  |                                  |                 |

## SYSTEMS

|         |                                       |   |
|---------|---------------------------------------|---|
| Systems | <u>Approved generic primer types:</u> |   |
|         | On blast cleaned steel:               | <ul style="list-style-type: none"> <li>a) Without priming coat</li> <li>b) 2-pack epoxy,<br/>e.g. Sika® Permacor®-2706 EG</li> <li>c) Zinc rich epoxy,<br/>e.g. SikaCor® Zinc R</li> <li>d) water dispersed zinc rich epoxy,<br/>e.g. SikaCor® Zinc W</li> <li>e) Zinc silicate,<br/>e.g. SikaCor® Zinc ZS (+ tiecoat<br/>Sika® Permacor®-2706 EG)</li> <li>f) Short / medium oil alkyd,<br/>e.g. Sika® Permacor®-1705</li> </ul> |
|         | On manually de-rusted steel:          | Sika® Permacor®-2029  |
|         | On galvanised steel:                  | Sika® Permacor®-2706 EG   |
|         | <u>Intumescent coating:</u>           | Sika® Unitherm® Platinum  |
|         | <u>Without topcoat:</u>               | <ul style="list-style-type: none"> <li>a) Internal exposure</li> <li>b) External exposure where common epoxy behaviour or visual changes of the original colour are not an issue.</li> </ul>  |

With topcoat:

If a decorative, colour resistant finish is required, then we recommend the following top coats (2-pack AY PUR):

SikaCor® EG-4  
SikaCor® EG-5  
SikaCor® PUR Color NEW  
Sika® Permacor®-2330  
Sika® Permacor®-2230 VHS

**Coating System C5 (according to ISO 12944-5)**

Priming:

e.g. Sika® Permacor®-2706 EG

Intumescent coating:

Sika® Unitherm® Platinum

Topcoat:

e. g. Sika® Permacor®-2330

**Decontaminable (food)**

Priming:

e.g. Sika® Permacor®-2706 EG

Intumescent coating:

Sika® Unitherm® Platinum

Topcoat:

Sika® Permacor®-2707

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## APPLICATION INFORMATION

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**Mixing ratio**

By weight

Components A : B

100 : 12

By volume

100 : 18.4

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**Consumption**

Theoretical material-consumption / coverage without loss for medium dry film thickness:

Dry film thickness

1.000 µm

Wet film thickness

1.000 µm

Consumption

~1.3 kg/m<sup>2</sup>

Coverage

~0.77 m<sup>2</sup>/kg

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**Relative air humidity**

Max. 80 %, ambient temperature shall be at least ≥ 3 K above dew point.

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**Surface temperature**

Substrate surface and ambient: At least + 10°C, max. + 40°C\*

Optimum results are achieved at temperatures over + 16°C

\*If higher temperatures occur, please consult the Technical Department for further assistance.

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**Pot Life**

At + 20°C

~30 min

At + 35°C

~15 min

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**Curing time**

**Curing and handling (at + 20°C)**

Touch dry

~8 h

Hard dry

(ready for handling and transport)

~24 h

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**Waiting time to overcoating**

**Overcoating, intervals / intercoat, waiting times (at + 20°C)**

Between primer and Sika® Unitherm® Platinum:

After the primer reached its final drying time

Between Sika® Unitherm® Platinum coats:

Min.

8 h at + 20°C

Max.

Interior: 7 days at + 20°C

Exterior: 2 days at + 20°C

Between Sika® Unitherm® Platinum and SikaCor® EG-4, SikaCor® EG-5, SikaCor® PUR Color NEW, Sika® Permacor®-2330, Sika® Permacor®-2230 VHS or Sika® Permacor®-2707:

|      |  |
|------|--|
| Min. | 24 h at + 20°C   |
| Max. | Interior: 7 days at + 20°C<br>Exterior: 2 days at + 20°C |

Note: The previously applied coating must be dry and free from any dirt, moisture or contaminants that could prevent or reduce adhesion (clean if necessary). If waiting times are longer than stated, then the coatings should be reactivated by suitable mechanical and / or chemical means.

Temporary storage or transport of coated steelwork must be carried out in an appropriate manner. It is 'good practise' that straps or chains must not be placed in direct contact with the coated surface.

## BASIS OF PRODUCT DATA

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

## FURTHER INFORMATION

Various 'info data sheets' such as processing instructions or repair instructions.  
For further information please consult Sika or visit us at [www.sika.de](http://www.sika.de)

## 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.

### 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 / j type Sb) is 500 g/l (Limits 2010) for the ready to use product.

The maximum content of Sika® Unitherm® Platinum is < 500 g/l VOC for the ready to use product.

## 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.

### MIXING

Stir component A very thoroughly using an electric mixer (start slowly, then increase up to approx. 300 rpm). Add component B carefully and mix both components very thoroughly (including sides and bottom of the container). Mix for at least 3 minutes until a homogeneous mixture is achieved. Fill mixed material into clean container and mix again shortly as described above. During mixing and handling of the materials always wear protective goggles, suitable gloves and other protective clothings.

## APPLICATION

Application by airless spray will give the best results and is recommended to achieve uniform thickness and appearance. 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.

**Do not thin Sika® Unitherm® Platinum!**

### Brushing/Rolling:

- Smaller areas

### Airless spraying:

Airless spray equipment i.e. single-leg spray equipment with a flow heater, or plural component spray equipment.

- Pressure ratio:  $\geq 66 : 1$
- Flow rate:  $\geq 24$  l/min
- Pressure rate: at least 200 bar in the spray gun
- Nozzle size 0.48 - 0.64 mm (0.019 - 0.025 inch)
- Spraying angle 20° - 40°
- Material temperature:  
approx. + 35°C at the nozzle outlet

### Helpful hints:

- Remove filter mesh
- Use direct material feed (without suction hose)
- At lower temperatures we recommend insulating the spray hose
- Max. 25 m length of spray hose
- Please adjust the spraying angles and nozzle sizes to your steel structure sizes to optimize overspray and consumption

### Repairs:

To make good any misses or damage, abrade adjacent areas to a matt finish, clean off all traces of dust. Mask if necessary and then apply the Sika® Unitherm® Platinum immediately.

## CLEANING OF EQUIPMENT

Thoroughly clean tools and equipment with Sika® Thinner E+B immediately after completion or interruption of the Sika® Unitherm® Platinum application process.

## LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product

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Data Sheet for the exact product data.

## 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.

### **PRODUCT DATA SHEET**

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