**PRODUCT DATA SHEET**

**Sika® Unitherm® Steel S exterior**
(formerly Sika® Unitherm® 38091 exterior)

Solvent based fire protection coating for steel, fast dry, interior/exterior use

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**PRODUCT DESCRIPTION**

Sika® Unitherm® Steel S exterior is an ecological thin film fire protection coating system which has to be used for structural steelwork which is subject to weathering, high humidity, maritime environment etc. (exterior condition).

Sika® Unitherm® Steel S exterior can also be used for interior steel construction.

Sika® Unitherm® Steel S exterior is forming a heat insulating layer under the influence of fire and improves the fire resistance of steel parts like columns, girders and framework.

Sika® Unitherm® Steel S exterior is independently tested to BS 476: Part 21.

**USES**

For exterior 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, possible special measures should be taken.

**CHARACTERISTICS / ADVANTAGES**

- Fast drying intumescent coating
- Applicable on steel constructions exposed to weathering
- Preserves the appearance of a steel construction
- Applicable to filigree and complex steel building elements
- Simple application, does not increase static load
- Individual coloration possible with corresponding topcoat, various colour shades in RAL, others available
<table>
<thead>
<tr>
<th>TESTS</th>
<th>APPROVAL / STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BS 476: Part 21: 1987</td>
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<tr>
<td></td>
<td>30 minutes up to 120 minutes.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>PRODUCT DATA</th>
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<tbody>
<tr>
<td>FORM</td>
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<tr>
<td>White</td>
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</tbody>
</table>

| PACKAGING |
| 25 kg pail |

<table>
<thead>
<tr>
<th>STORAGE</th>
<th>STORAGE CONDITIONS / SHELF-LIFE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18 months from date of production if stored properly in undamaged and unopened original sealed packaging in cool and dry conditions. Protect from direct sunlight and frost.</td>
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<thead>
<tr>
<th>TECHNICAL DATA</th>
<th>DENSITY</th>
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<tr>
<td></td>
<td>Approx. 1.31 g/cm³</td>
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<tr>
<th>SOLID BY VOLUME</th>
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<tbody>
<tr>
<td>71 ± 3% (according BCF Guidance Methode)</td>
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</tbody>
</table>

| FLASH POINT |
| +32°C |

| VOC DATA |
| VOC content (ready to use) not exceeding 350 gm/litre [Type of regulated paint under the Air Pollution Control (volatile organic compounds). Regulation of Hong Kong]. |
SYSTEM INFORMATION

APPLICATION DETAILS

<table>
<thead>
<tr>
<th>COATING SYSTEM</th>
<th>Steel</th>
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<tbody>
<tr>
<td>Primer:</td>
<td>SikaCor® EG 1 (Two component epoxy) or SikaCor® Zinc R (Zinc rich epoxy)</td>
</tr>
<tr>
<td>Intumescent coating:</td>
<td>Sika® Unitherm® Steel S exterior</td>
</tr>
<tr>
<td>Topcoat:</td>
<td>SikaCor® EG-5</td>
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</tbody>
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<table>
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<tr>
<th>Galvanised steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primer:</td>
</tr>
<tr>
<td>Intumescent coating:</td>
</tr>
<tr>
<td>Topcoat:</td>
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</tbody>
</table>

CONSUMPTION / COVERAGE

Approx. 1.85 kg/m² for 1000 µm dry film thickness (1350 - 1400 µm wet film thickness). The fire rate of Sika® Unitherm® Steel S exterior depends on national standard, please refer to corresponding separate consumption table/diagram.

SikaCor® EG-5 topcoat produced in RAL colour shades or on request for other colour shades. Approx. 0.17 kg/m² for topcoat.

Note: Ratio of dry film thickness or wet film thickness varies depending on application method.

SURFACE PREPARATION

Steel
Blast cleaning to Sa 2½ according to EN ISO 12944, Part 4.

Galvanised steel
Free from dirt, oil, grease and corrosion products.

Existential anticorrosive primer/coatings
A compatibility test with the fire protection system is recommended.
For testing and surface pre-treatment, please see special technical information sheet “Primers and surface testing for Sika® Unitherm® steel fire protection systems.”

Any damage (impact, corrosion, etc.) should be repaired prior to the application of coating.
APPLICATION INSTRUCTIONS

APPLICATION METHOD / TOOLS
Stir thoroughly with slowly turning mechanical stirrer, free of lumps. Addition of thinner is not necessary.

Airless spraying:
- material shall be applied undiluted
- airless spraying machine with pressure ratio ≥ 45 : 1
- filters should be removed
- hose diameter not below 3/8”
- recommended nozzle size 0.46 - 0.66 mm or 0.019 - 0.027”
- solvent resistant hoses must be used!

Brushing/rolling:
- material shall be applied undiluted
- a ribbed appearance may observed due to the nature of material
- solvent resistant brush or roller must be used
- more than one coat may be necessary to give equivalent dry film thickness of a single spray applied coat.

Note: The Sika® Unitherm® basecoat shall be applied in several coats up to the final dry film thickness required. Wet film thickness max. 400 µm for 1st application coat on primer. Wet film thickness approx. 750 µm for each subsequent application coat is recommended.

APPLICATION CONDITIONS
Object temperature not below +5°C, to max. +40°C
Relative humidity max. 80%
Application temperature shall be at least ≥ 3°C above dew point. During application and drying of total Sika® Unitherm® coating system including Sika® EG-5 as well as transportation special protection measures must be taken against weathering. Furthermore, proper ventilation is recommended.

DRYING
Average drying time at 23°C:
- touch-dry: < 1 hour
- overcoatable: approx. 4 hours
- dry-to-handle: this will depend on the total thickness of Sika® Unitherm® Steel S exterior to be applied

Different temperature and relative humidity have an influence on drying time.
Sika® Unitherm® Steel S exterior requires a minimum of 24 hours drying prior to application of topcoat SikaCor® EG-5.
Through-drying of Sika® Unitherm® Steel S exterior can be checked by “finger-nail-test”

CLEANING OF TOOLS
Immediately after use with Sika® Unitherm® thinner.
VALUE BASE

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.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

HEALTH AND SAFETY INFORMATION

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related 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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

FOR MORE PRODUCT NAME® INFORMATION:

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