Product Data Sheet
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Construction

Sika® Unitherm®-38091 exterior

Intumescent coating, solvent based

Product Description	Sika® Unitherm®-38091 exterior is a thin film fire protection coating for structural steelwork.
Uses	■ Intumescent coating for exterior use ■ Intumescent coating for interior use under moist conditions ■ Protection of structural steel members like columns, beams and frame work
Characteristics / Advantages	■ Forms a heat insulating foam ■ Easy to apply ■ Does not increase static load ■ For exterior use

Test

Approval / Standards	British Standard, Warrington Fire Research. German Standard, BAM. Many different countries, e.g. Taiwan, China, Singapore …

Product Data

Form

Appearance / Colour	White
Packaging	25.0 kg containers, net weight

Storage

Storage Conditions / Shelf-Life	12 months from date of production if stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +30°C. Protect from frost.

Technical Data

Density	Resin liquid: ~ 1.28 kg/l
Solid Content	~ 70% (by weight)
Flash Point	+26°C

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Resistance

Fire Resistance	Fire resistant approvals from 30 min. to 120 min.

System Information

System Structure	*Steel:*	
	Primer:	1 x Sika® Permacor®-1705:
	Intumescent layer:	1-3 x Sika® Unitherm®-38091exterior
	Top coat (mandatory):	2 x Sika® Unitherm®-7854
	Galvanised steel:	
	Primer:	1 x Sika® Permacor®-2706 EG
	Intumescent layer:	1-3 x Sika® Unitherm®-38091 exterior
	Top coat (mandatory):	2 x Sika® Unitherm®-7854

Application Details

Consumption / Dosage	The consumption of Sika® Unitherm®-38091 exterior depends on the applied standard. It is influenced by the dimensions of each steel part, the exposure to the flames and the requested fire resistant time. For each certified standard a related consumption table/ diagram is available. *Example (according BS 476 part 21):* Requested DFT = 550µm - Corresponding WFT = 750 - 800µm - Consumption = 1000 g/m² ~ 0.78 l/m²
Substrate Quality	Prior to application of Sika® Unitherm®-38091 exterior onto the primer, Sika® Permacor®-1705 or Sika® Permacor®-2706 EG, the layer must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc. If in doubt apply a test area first.

Application Conditions / Limitations

Substrate Temperature	+5°C min. / +50°C max.
Ambient Temperature	+5°C min. / +50°C max.
Relative Air Humidity	80% r.h. max.
Dew Point	Beware of condensation! The substrate and uncured coating must be at least 3°C above dew point to reduce the risk of condensation or blooming on the wall finish.

Application Instructions

Mixing/ Stiring	One pack product, stir thoroughly, free of lumps.
Stiring Tools	Sika® Unitherm®-38091 exterior must be mechanically stirred using an electric stirrer (300 - 400 rpm) or other suitable equipment.

Application Method / Tools

Airless spraying:

- Material shall be applied undiluted
- Airless spray equipment with transmission > 45 : 1, flow rate 4 - 5 l/min
- Hose diameter not below 3/8”
- Recommended nozzle size: 0.46 - 0.66 mm or 0.019 - 0.0273”
- Remove all filters
- Hoses must be solvent resistant

Brush and roller:

- More than one coat may be necessary to achieve the equivalent DFT of a single spray coat
- Use solvent resistant tools

Sika® Unitherm®-38091 exterior must be applied in multi layer application to the required DFT. The first layer onto the primer should not exceed a WFT of 400 µm. The WFT of each subsequent coat should not exceed 500µm.

Cleaning of Tools

Clean all tools and application equipment with Sika® Unitherm® thinner-11089 immediately after use. Hardened and/or cured material can only be removed mechanically.

Potlife

Not applicable (see shelf life).

Waiting Time / Overcoating

Before applying Sika® Unitherm®-38091 exterior - on Sika Permacor®-1705 or Sika Permacor®-2706 EG - allow:

Substrate temperature	Minimum	Maximum
+10°C	24 hours	48 hours
+20°C	16 hours	24 hours
+30°C	16 hours	24 hours

Before applying Sika® Unitherm®-38091 exterior - on Sika® Unitherm®-38091 exterior - allow:

Substrate temperature	Minimum	Maximum
+10°C	48 hours	-
+20°C	24 hours	-
+30°C	24 hours	-

Before applying Sika® Unitherm®-7854- on Sika® Unitherm®-38091 exterior - allow:

Substrate temperature	Minimum	Maximum
+10°C	72 hours	-
+20°C	48 hours	-
+30°C	48 hours	-

Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

Notes on Application / Limitations

With relative air humidity of ≥ 80% the waiting time / overcoat is increased by 24 hours.

Always ensure good ventilation when using Sika® Unitherm®-38091 exterior in a confined space, to ensure drying.

Freshly applied Sika® Unitherm®-38091 exterior should be protected from rain, condensation, water and weathering.

If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO2 and H2O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.

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.

Construction

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.
EU Regulation 2004/42 **VOC - Decopaint Directive**	According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / I, type Sb) is 500 g/l (limit 2010) for the ready to use product. The maximum content of **Sika® Unitherm®-38091 exterior** is < 500 g/l VOC for the ready to use product.

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