BUILDING TRUST

PRODUCT DATA SHEET

Sikagard®-831

Interior and exterior intumescent coating for commercial vehicles

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Chemical base		2-component modified epoxy
Colour		Light grey
Cure mechanism		Polyaddition
Density	mixed	1.42 kg/l
Solid content (CQP002-2)		100 %
Mixing ratio	by weight by volume	100 : 12 100 : 18.4
Application temperature	ambient, product and substrate	10 – 40 °C
Pot-life	at 20 °C at 35 °C	30 minutes 15 minutes
Curing time	touch dry hard dry (ready for handling and transport)	8 hours [A] 24 hours [A]
Compressive strength (ISO 604)		45 MPa
Bonding strength (Pull-off) (CQP057-3 / ISO 4624)		10 MPa
Tensile strength (CQP036-1 / 580-5,-6 / ISO 527-2)		10 MPa
Abrasion resistance (ISO 5470)	1000 g; disc: CS 10	65 mg/1000 R
Shelf life		24 months [B]

CQP = Corporate Quality Procedure

[A] 23 °C / 50 % r. h.

[B] storage below 25 °C

DESCRIPTION

Sikagard®-831 is a solvent-free 2-pack modified epoxy-based intumescent fire-protection coating for internally or externally exposed aluminum or steel surfaces. It provides very high durability and combined corrosion and fire protection (EN45545 / NFPA 130).
It is easily applied with standard airless spray equipment, requires no reinforcement, cures rapidly to a very tough and resistant finish ready for handling and transportation after 24 hours.

PRODUCT BENEFITS

- High shock, impact and abrasion resistance
- Application directly on sand blasted metal without primer
- Wet film thickness = dry film thickness
- Can be applied in one layer for up to 4 mm
- Short coating and curing time (24 hours)
- Halogen free
- Meets EN 45545-2 R1/R7

AREAS OF APPLICATION

Sikagard®-831 is designed primarily for in-shop applications. It is typically used in the Transportation and Marine industry where it can be applied on internal and external aluminum, steel and GRP surfaces.
Sikagard®-831 is suitable for experienced professional users only. Tests with actual substrates and conditions have to be performed ensuring adhesion and material compatibility.

METHOD OF 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, color shade etc.
Prior to the application it is recommended to perform a trial on site to ensure the selected application method will provide the requested results.
Sikagard®-831 is commonly applied by airless spray equipment - consisting in a single pump or a plural pump with a flow heater. A suitable setup could typically look as follows:
- Pressure ratio ≥ 66 : 1
- Air flow rate ≥ 24 l/min
- pressure at the spray gun ≥ 200 bar
- nozzle size: 0.019 – 0.025" (0.48 – 0.64 mm)
- spraying angle: 20 – 40°

The material temperature can reach up to 35 °C at the nozzle.
The filter mesh is not required and can be removed. Use direct material feed (without suction hose). At low temperatures it is recommended to use insulated spray hoses of a maximum length of 25 m.
Sikagard®-831 must not be diluted!

Surface preparation

Steel surfaces require a blast cleaning to Sa 2.5 according ISO 8501-1.
Aluminium surfaces require sweep blasting with a pure corundum, grain size e.g., F80, and reduced pressure (approx. 2.5 - 3 bar). To avoid oxidation of blasted surface, no more than 8 hours may elapse between sweep blasting and application of the Product.
Surface roughness after blasting can be assessed using a grit comparator as described in EN ISO 8503-1. For steel grade Sa 2.5, segment 2 to 3, 50 to 100 µm; for aluminium segment 1 to 3, 40 to 100 µm.
Other type of substrate must be tested individually.
Surfaces must be clean and free from dirt, grease, oil and contaminants prior to application.

Mixing process

Prior to mixing both components, stir part A until homogenous. To mix Sikagard®-831 use an electric mixer with mixing paddles (diameter 140 – 160 mm). To avoid splashing, mix shortly at low rpm's and then gradually increase to max 300 rpm for homogenous mixing.
Slowly add part B while mixing. After B-component has been added, continue mixing for 3 minutes until a uniform mixture has been achieved. To ensure homogeneity pour the mixed material into another container (repot), scrape the walls of first container and mix again for at least 1 minute.

Application

Sikagard®-831 can be applied with ambient and surface temperatures between 10 °C and 40 °C. Optimum results are achieved at temperatures above 15 °C. If the product has been stored at lower temperature it is recommended to condition prior the application, for example by storing it close to the production line for up to 48 hours.
Relative humidity must not exceed 80 % and the ambient temperature has to be ≥ 3 °C above dew point.
If a second layer is required, the minimum waiting time is 8 hours at 20 °C. If the application and the storage is in a production facility (protected) the maximum open time is 7 days, in other cases it is reduced to 2 days.
Note: The previously applied layer must be dry and free from any dirt, moisture or contaminants that could compromise adhesion.
If waiting times are longer than indicated, the layer must treated by mechanical means, e.g. grinding, etc.
Temporary storage or transport of coated constructions must be carried out in a suitable manner. It is "good practice" that straps or chains are not brought into direct contact with the coated surface.
For repairs it is required to abrade coating areas to a matt finish and clean off dust. Use masking tape if necessary and then apply Sikagard®-831.

Removal

Clean the pump and tools immediately after use with Sika® Thinner E+B. Cured material can only be removed mechanically.

STORAGE CONDITIONS

Sikagard®-831 has to be kept between 5 °C and 30 °C in a dry place. Do not expose it to direct sunlight or frost. After opening of the packaging, the content has to be protected against humidity.

FURTHER INFORMATION

The information herein is offered for general guidance only. Advice on specific applications is available on request from the Technical Department of Sika Industry.
Copies of the following publications are available on request:
- Safety Data Sheets

PACKAGING INFORMATION

Sikagard®-831 (A)

Pail	15 kg

Sikagard®-831 (B)

Can	1.8 kg

BASIS OF PRODUCT DATA

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

HEALTH AND SAFETY INFORMATION

For information and advice regarding transportation, handling, storage and disposal of chemical products, users shall refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

DISCLAIMER

The information, and, in particular, the recommendations relating to the application and enduse 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.