BUILDING TRUST

PRODUCT DATA SHEET

Sikaflex®-821 FR

FIRE-RATED INTERIOR SEALANT FOR RAIL APPLICATIONS

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Chemical base	1-component polyurethane
Color (CQP001-1)	Grey, black
Cure mechanism	Moisture-curing
Density	1.5 kg/l
Application temperature	10 – 35 °C
Skin time (CQP019-1)	60 minutes [A]
Curing speed (CQP049-1)	(see diagram 1)
Shrinkage (CQP014-1)	2 %
Shore A hardness (CQP023-1 / ISO 7619-1)	45
Tensile strength (CQP036-1 / ISO 527)	2 MPa
Elongation at break (CQP036-1 / ISO 527)	250 %
Tear propagation resistance (CQP045-1 / ISO 34)	9 N/mm
Tensile lap-shear strength (CQP046-1 / ISO 4587)	1.8 MPa
Service temperature (CQP513-1)	-50 – 70 °C
4 hours	120 °C
24 hours	100 °C
Shelf life (CQP016-1)	6 months [B]

CQP = Corporate Quality Procedure

[A] 23 °C / 50 % r.h.

[B] storage below 25 °C

DESCRIPTION

Sikaflex®-821 FR is an elastic 1-component polyurethane fire-retardant sealant that cures on exposure to atmospheric humidity. It is used for internal joints in the rail industry where the hazard level HL1 or HL2 of the European rail fire standard EN 45545-2 is required.

PRODUCT BENEFITS

- Fire-retardant
- Passes EN 45545-2 / R22, R23 HL2
- Free of solvents and PVC

AREAS OF APPLICATION

Sikaflex®-821 FR is designed for interior sealing applications in the railway industry where special fire-protection requirements acc. EN45545-2 apply. It can be used on a wide variety of substrates and is suitable for permanent elastic seals. Suitable substrate materials are metals, metal primers and paint coatings (2-component systems), ceramic materials and plastics.

Seek manufacturer's advice and perform tests on original substrates before using Sikaflex®-821 FR on materials prone to stress cracking.

This product is suitable for experienced professional users only. Test with actual substrates and conditions have to be performed to ensure adhesion and material compatibility.

CURE MECHANISM

Sikaflex®-821 FR cures by reaction with atmospheric moisture. At low temperatures the water content of the air is generally lower and the curing reaction proceeds somewhat slower (see diagram 1).

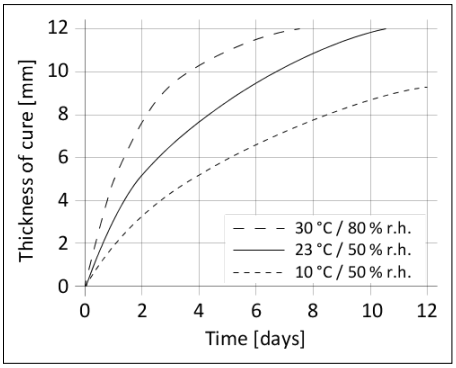

Diagram 1: Curing speed Sikaflex®-821 FR

CHEMICAL RESISTANCE

Sikaflex®-821 FR is generally resistant to fresh water, seawater, diluted acids and diluted caustic solutions; temporarily resistant to fuels, mineral oils, vegetable and animal fats and oils; not resistant to organic acids, glycolic alcohol, concentrated mineral acids and caustic solutions or solvents.

METHOD OF APPLICATION

Surface preparation

Surfaces must be clean, dry and free from grease, oil, dust and contaminants.
Surface treatment depends on the specific nature of the substrates and is crucial for a long lasting bond. Suggestions for surface preparation may be found on the current edition of the appropriate Sika® Pre-treatment Chart. Sikaflex®-821 FR must not to be used with Sika® Primer-207. Consider that these suggestions are based on experience and have in any case to be verified by tests on original substrates.

Application

Sikaflex®-821 FR can be processed between 10 °C and 35 °C (climate and product) but changes in reactivity and application properties have to be considered. The optimum temperature for substrate and sealant is between 15 °C and 25 °C.
Consider the viscosity increase at low temperature. For easy application, condition the adhesive at ambient temperature prior to use.
Sikaflex®-821 FR can be processed with hand, pneumatic or electric driven piston guns.

Tooling and finishing

Tooling and finishing must be carried out within the skin time of the product. It is recommended using Sika® Tooling Agent N. Other finishing agents must be tested for suitability and compatibility prior the use.

Removal

Uncured Sikaflex®-821 FR can be removed from tools and equipment with Sika® Remover-208 or another suitable solvent. Once cured, the material can only be removed mechanically. Hands and exposed skin have to be washed immediately using hand wipes such as Sika® Cleaner-350H or a suitable industrial hand cleaner and water. Do not use solvents on skin.

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
- Fire test reports
- General Guidelines
  Bonding and Sealing with 1-component Sikaflex®
- Sika Pre-treatment Chart
  For 1-component Polyurthane

PACKAGING INFORMATION

Unipack	600 ml

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.

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