

PRODUCT DATA SHEET

SikaBiresin® RG53 FR

Low pressure RIM system for flame retardant parts – simulation of ABS

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	Component A SikaBiresin® RG53 FR	Component B SikaBiresin® RG500
Chemical base	Polyol	MDI-based isocyanate
Color	Beige, black	Brown
	mixed	Beige, black
Density	1.2 kg/l	1.23 kg/l
	cured	1.27 kg/l
Mixing ratio	by weight	100 : 54
	by volume	100 : 52
Viscosity (CQP029-4)	4700 mPa·s	110 mPa·s
Pot life (CQP021-4)	at 23 °C	75 seconds
Demolding time		10 minutes
Curing time	at 23 °C	1 day
Shore D hardness (CQP023-1 / ISO 868)		84 ^A
Tensile strength (CQP036-2 / ISO 527)		45 MPa ^A
Tensile elongation (CQP036-2 / ISO 527)		5 % ^A
Flexural strength (CQP027-2 / ISO 178)		70 MPa ^A
Flexural modulus (CQP027-2 / ISO 178)		2200 MPa ^A
Impact resistance (CQP038-2 / ISO 179)		35 kJ/m ² ^A
Heat deflection temperature (CQP030-1 / ISO 75B)		110 °C ^B
Shelf life		12 months

CQP = Corporate Quality Procedure

^A) curing condition: after demolding 7 days at 23 °C^B) post curing: 4 hours at 80 °C + 2 hours at 120 °C

DESCRIPTION

SikaBiresin® RG53 FR is a fast 2-component polyurethane low pressure RIM system for manufacturing of flame retardant parts.

The Product must be processed with an adequate equipment.

PRODUCT BENEFITS

- Certified flame retardant properties
- Good thermal resistance
- Simulation of ABS
- High flexural strength
- Good flow behavior
- Short demolding time

AREAS OF APPLICATION

SikaBiresin® RG53 FR is designed for manufacturing of stiff housings and coverings for electrical appliances and machine cladding.

Due to its flame retardant properties, it is particularly suitable for components and parts where flame retardancy according to UL94 V0 is required.

Its good flow behavior makes it well suited for the production of thin-walled parts with complex shapes and structures, such as ventilation ducts and parts with integrated reinforcement elements.

This product is suitable for experienced professional users only.

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Version 01.01 (08 - 2026), en_DE

012122030530001030

APPROVAL / CERTIFICATES

- Flame retardant according to UL94 V0 at 3 mm thickness
- Flame retardant according to appendix IV; EU Directive 95/28/EC at 3 mm thickness
- Flame retardant according to DIN 75200; ISO 3795

METHOD OF APPLICATION

Surface preparation

Surfaces must be clean, dry, and free from grease, oil and dust.

It is recommended to use wax-based release agents. For further information regarding Sika release agent consult the corresponding Product Data Sheet.

Mixing process

Prior to use check the material for homogeneity and crystallization. After prolonged storage at low temperature, crystallization of components may occur. This process can be easily reversed by heating the affected component to a maximum of 70 °C until the crystals have disappeared. Allow to cool down to requested processing temperature before use.

Component A must be stirred thoroughly before use.

An agitator/stirring device for the A component and Silicagel filters for both components are required.

Both components must be mixed homogeneously respecting the defined mixing ratio.

Containers must be closed tightly immediately after use to prevent moisture ingress.

Once opened the Product shall be used as soon as possible.

Application

The material and processing temperature shall be between 18 °C and 25 °C.

The mold temperature shall be between 20 °C and 60 °C. Increased mold temperature results in a shorter demolding time.

SikaBiresin® RG53 FR is processed using 2-component low-pressure equipment. These equipment must be specifically set up for processing the parts to be manufactured.

The mixing process is performed by dynamic or static-dynamic mixing units.

The mold temperature has a significant influence on the mechanical and thermal properties of the final part. In case of lower mold temperature those properties may be improved by a post curing process.

Depending on the geometry and weight of the part, it is recommended to use a conformer while post curing.

STORAGE CONDITIONS

Both components must be stored at temperature between 15 °C and 25 °C in original unopened containers.

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

SikaBiresin® RG53 FR (A)

Hobbock	25 kg
Drum	200 kg

SikaBiresin® RG500 (B)

Canister	20 kg
Drum	250 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 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.

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