

PRODUCT DATA SHEET

SikaBiresin® F190

Unfilled fastcast resin with low shrinkage

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	SikaBiresin® F190 (A)	SikaBiresin® F190 (B)	RZ 30150 / TE Filler
Chemical base	Polyol, unfilled	MDI-based isocyanate, unfilled	Aluminum hydroxide powder
Color	Beige	Amber Beige	White Beige
Density	0.99 kg/l	1.11 kg/l	2.4 kg/l
	cured	1.07 kg/l	1.67 kg/l ^A
Mixing ratio	by weight 100 : 100 : (360) ^B		
Viscosity (CQP029-4)	80 mPa·s	110 mPa·s	2000 mPa·s ^A
	mixed	125 mPa·s	
Pot life (CQP021-4)	200 g	7 min. 30 sec.	11 min. ^A
Demolding time	10 mm thickness	180 minutes	
	40 mm thickness, filler	105 minutes ^A	
Curing time	at 23 °C 3 days		
Shore D hardness (CQP023-1 / ISO 868)		68 ^C	76 ^D
Compressive strength (CQP028-5 / ISO 604)		35 MPa ^C	47 MPa ^D
Flexural strength (CQP027-2 / ISO 178)		40 MPa ^C	30 MPa ^D
Flexural modulus (CQP027-2 / ISO 178)		1250 MPa ^C	4000 MPa ^D
Impact resistance (CQP038-2 / ISO 179)		20 kJ/m² ^C	4 kJ/m² ^D
Linear shrinkage (CQP014-5)	10 mm thickness	5.5 mm/m	
	40 mm thickness, filler	3.5 mm/m ^A	
Coefficient of thermal expansion (CQP053-1 / ISO 11359)	15 °C to 90 °C	155 x 10 ⁻⁶ 1/K ^C	90 x 10 ⁻⁶ 1/K ^D
Glass transition temperature TMA (CQP053-1 / ISO 11359)		90 °C ^C	93 °C ^D
Shelf life	12 months	12 months	24 months

CQP = Corporate Quality Procedure

^A) Filler 360 parts^C) post curing: 16 hours at 70 °C / 100 : 100 : 0^B) Filler 0 to 360 parts^D) post curing: 16 hours at 70 °C / 100 : 100 : 360

DESCRIPTION

SikaBiresin® F190 is an unfilled 2-component polyurethane resin which can be used for small parts. For larger parts, the product can be filled with RZ 30150 or TE Filler.

PRODUCT BENEFITS

- User friendly mixing ratio
- Low viscosity
- Low shrinkage
- Adequate viscosity even with high-rate filler
- Filled with RZ 30150 (TE Filler) to limit exothermic reaction and get easy machining
- REACH and RoHS compliant

AREAS OF APPLICATION

Unfilled version of SikaBiresin® F190 is designed for casting of negatives, molds masters and mock-ups.

The filled version of the Product is suitable for higher volume castings. The filler reduces the exothermic reaction as well as the shrinkage. This product is suitable for experienced professional users only.

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METHOD OF APPLICATION

Surface preparation

The material, processing and mold or master-model temperature shall be between 18 °C and 25 °C.
Make sure the mold or master model is clean, dry, dust and grease free.
If mold or master-model surface is porous, it must be sealed prior applying the release agent.
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.
Prior to mixing both components must be shaken thoroughly. To shake large containers, place them on a table and then carefully turn them over and move them back and forth.
If no fillers are needed, pour both components in the right mixing ratio together and mix homogeneously.
For casting thicknesses between 10 mm and 40 mm RZ 30150 or TE Filler shall be used to reduce shrinkage and exothermic temperature. The quantity of the filler must be determined depending on the application and casting thickness.
In case fillers are required, divide the filling quantity evenly and mix homogeneously into each of the two components respecting the defined mixing ratio. Then pour both components together and mix homogeneously.
The mixing can be performed with a spatula or a machine stirrer at ≤ 300 rpm.
In both cases, to ensure homogeneous and complete mixing, pour the mixed product into another container and mix again shortly, considering the pot life.
Note: Both containers must be closed tightly immediately after use to prevent moisture ingress.
Once opened the product shall be used as soon as possible.

Application

Immediately after mixing pour the product into the mold starting at the deepest point.
Demolding time may vary depending on casted thickness and room temperature.
Further post curing of the demolded part can improve the final mechanical properties.
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® F190 (A)

Can	4.5 kg 18 kg
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SikaBiresin® F190 (B)

Can	4.5 kg 18 kg
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RZ 30150 / TE Filler

Bag	25 kg
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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.

