

PRODUCT DATA SHEET

SikaBiresin[®] F190 (F190-1)

UNFILLED FASTCAST RESIN WITH LOW SHRINKAGE – POT LIFE 6'30'' – 8'30''

APPLICATIONS

- Unfilled version for casting of negatives, molds, masters and mock-ups
- Filled version for higher volume castings

MAIN PROPERTIES

- Easy to use mix ratio (1:1 by weight)
- 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
- Filled with RZ 209/6 / aluminum powder in order to increase thermal conductivity
- REACH and RoHS compliant

DESCRIPTION

Basis	Two component polyurethane system
Component A	SikaBiresin[®] F190 , polyol, unfilled, beige
Component B	SikaBiresin[®] F190 , MDI-based isocyanate, unfilled, amber
Filler	RZ 30150 / TE Filler , aluminum hydroxide powder, white

PHYSICAL PROPERTIES

		Polyol (A)	Isocyanate (B)	Filler
Components		SikaBiresin[®] F190	SikaBiresin[®] F190	RZ 30150 / TE Filler
Viscosity, 25 °C	mPa.s	~ 80	~ 110	not measurable
Density	g/cm ³	0.99	1.11	not measurable
Mixing ratio A:B	in parts by weight	100	100	360
Mixture				
Colour		beige		beige
Viscosity, 25 °C	mPa.s	~ 125		~ 2,000
Pot life, 25 °C, 200 g	min	6'30'' – 8'30''		10 – 12''
Demolding time, 25 °C				
- 10 mm thickness	min	~ 180		-
- 40 mm thickness		Not applicable		~ 105

MECHANICAL PROPERTIES

approx. values; values after post curing 16 h / 70 °C

			SikaBiresin® F190	RZ 30150 / TE Filler
Density, 23 °C	ISO 1183	g/cm ³	1.07	1.67
Shore hardness	ISO 868	-	D 68	D 76
Flexural modulus	ISO 178	MPa	1,250	4,000
Flexural strength	ISO 178	MPa	40	30
Impact resistance	ISO 179	kJ/m ²	20	4
Compressive strength	ISO 604	MPa	35	47
Linear shrinkage, 23 °C				
- 10 mm thickness	Internal test	mm/m	5.5	-
- 40 mm thickness			Not applicable	3.5

THERMAL AND SPECIFIC PROPERTIES

approx. values

			SikaBiresin® F190	RZ 30150 / TE Filler
Glass transition temperature, values after post curing 16 h / 70 °C	ISO 11359	°C	90	93
Coefficient of thermal expansion (15 °C to 90 °C)	ISO 11359	10 ⁻⁶ K ⁻¹	155	90

PACKAGING UNITS

▪ Polyol (A), SikaBiresin® F190	18 kg / 4.5 kg
▪ Isocyanate (B), SikaBiresin® F190	18 kg / 4.5 kg
▪ Filler, RZ 30150 / TE Filler	25 kg

PROCESSING DATA

- The material, processing and mold temperature should be at least 18 – 25 °C.
- Pay attention to dry conditions and dry mold surfaces while processing.
- If mold surface is porous it must be sealed prior applying release agent.
- Recommend release agents are wax based. For more information, and recommendation see Product Data Sheets of Sika release agents or contact local technical assistance.
- Both components must be shaken well before use.
- For casting thicknesses above 10 mm and up to 40 mm, it is recommended to add filler as follows:
 - up to 360 parts per hundred of resin of RZ 30150 / TE Filler (mineral filler)
 - up to 360 parts per hundred of resin of RZ 209/6 / Aluminum powder
- If fillers are to be added: split filler quantity equally and add each half in each of the 2 components to disperse by stirring to obtain a homogenous mixture.
- Both components have to be mixed thoroughly with a spatula or low-rpm stirrer according to mixing ratio and poured immediately into the mold starting from the deepest point.
- 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.
- For cleaning the final part from release agent residues, we recommend Sika® Reinigungsmittel-5. Before use of other cleaners, compatibility must be tested.

STORAGE CONDITIONS

Shelf life	■ Polyol (A), SikaBiresin® F190	12 months
	■ Isocyanate (B), SikaBiresin® F190	12 months
	■ Filler, TE Filler / RZ 30150	24 months
Storage temperature	■ Polyol (A), SikaBiresin® F190	15 – 25 °C
	■ Isocyanate (B), SikaBiresin® F190	15 – 25 °C
	■ Filler, TE Filler / RZ 30150	15 – 25 °C
Opened packagings	■ Containers must be closed tightly immediately after use to prevent moisture ingress.	
	■ The residual material needs to be used up as soon as possible.	

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 Advanced Resins. Copies of the following publications are available on request: Safety Data Sheets

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.

LEGAL NOTICE

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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