

PRODUCT DATA SHEET

SikaBiresin® L84 (Biresin® L84)

LAMINATING AND MULTI-PURPOSE RESIN

APPLICATIONS

- Epoxy resin tooling system which has been especially formulated to produce high performance moulds of various types with excellent heat and mechanical resistance.
- With three different hardeners for flexible processing.
- Suitable for the manufacture of many types of moulds including laminated moulds reinforced with either glass or carbon fibres.
- SikaBiresin® L84 can also be used to produce heat resistant backstamped moulds, models and negatives and for the production of vacuumforming moulds.
- The resin systems can also be used to manufacture highly filled polymer concrete.

MAIN PROPERTIES

- Multi-purpose application with different hardeners
- Resin has excellent wetting properties for both reinforcing fibres and fillers
- High glass fibre and filler content are possible
- Good heat resistance and mechanical resistance, especially after post curing: With hardener SikaBiresin® GC12 for faster curing and earlier demoulding
- With hardener SikaBiresin® L84 T extended potlife and higher heat distortion temperature are achievable. A post cure is necessary to obtain the higher heat resistance

DESCRIPTION

Basis	Two-component-epoxy-system
Component A	SikaBiresin® L84 , epoxy resin, translucent
Component B	SikaBiresin® L84 , amine, colourless to transparent
Component B	SikaBiresin® GC12 , amine, amber
Component B	SikaBiresin® L84 T , amine, colourless to transparent

PHYSICAL PROPERTIES

		Resin (A)	Hardener (B)	Hardener (B)	Hardener (B)
Components		SikaBiresin® L84	SikaBiresin® L84	SikaBiresin® GC12	SikaBiresin® L84 T
Viscosity, 23 °C	mPa.s	~ 1,600	< 10	~ 140	< 10
Density, 25 °C	g/ml	~ 1.15	~ 1.1	~ 1.0	~ 0.92
Mixing ratio	in parts by weight	100	25	20	24
	in parts by volume	100	26	23	30

		Mixture		
Viscosity, 25 °C	mPa.s	~ 390	~ 1,090	~ 590
Potlife, RT, 500 g	min	~ 40	~ 20	~ 60
Demoulding time, RT	h	24	24	24 + postcure

MECHANICAL PROPERTIES

approx. values		SikaBiresin® L84	SikaBiresin® GC12	SikaBiresin® L84 T
Density	ISO 1183	g/cm ³	1.1	
Shore hardness	ISO 868	D 82	D 84	D 86
E-Modulus	ISO 178	MPa	3,600	3,400
Flexural strength	ISO 178	MPa	76	130
Compressive strength	ISO 604	MPa	118	120
Tensile strength	ISO 527	MPa	87	77
Impact resistance	ISO 179	kJ/m ²	18	21

THERMAL AND SPECIFIC PROPERTIES

approx. values				
Heat distortion temperature	ISO 75B	°C	100*	91*
Glass transition temperature	ISO 11357	°C	104***	-

*values after post curing 2 h / 80 °C, **values after post curing 15 h / 80 °C, *** values after 12 h / 100 °C

PACKAGING UNITS

■ Resin (A), SikaBiresin® L84	220 kg; 50 kg; 10 kg net
■ Hardener (B), SikaBiresin® L84	50 kg; 12.5 kg; 2.5 kg net
■ Hardener (B), SikaBiresin® GC12	15 kg; 2.5 kg; 9 x 0.4 kg; 0,4 kg net
■ Hardener (B), SikaBiresin® L84 T	53 kg; 15 kg; 2.5 kg net

PROCESSING DATA

- The material, processing and mould temperature must be from 18 to 25 °C.
- Component A must be stirred thoroughly before use.
- Weigh the components precisely according to the indicated ratio.
- Both components have to be mixed thoroughly with a spatula or slow-running stirrer according to mixing ratio.
- Do not forget to wipe the vessel bottom and wall and mix again.
- After mixing of component A and B it is possible to mix desired additives easily.
- SikaBiresin® L84 is applied quickly and easily due to its low viscosity. It will easily wet out fibres and incorporate high levels of fillers and powders with high binding force. Fibre laminates with thickness of more than 2 - 3 mm a break of 2 h is necessary to remove temperature peaks. With hardeners (B) SikaBiresin® L84 and SikaBiresin® L84 T working without break is possible.
- With hardener (B) SikaBiresin® L84 T demoulding is possible after room temperature curing of 24 h and approx. 4 - 5 h at 40 – 50 °C. Complete cure is achieved by post curing approx. 15 h at 80 °C.
- The ratio between resin and selected fibre must be determined and reliably controlled.
- For laminats glass fibres with binding twill are better than binding cloth because of its better suppleness.
- To clean tools immediately, Sika® Reinigungsmittel 5 is recommended.

STORAGE CONDITIONS

Shelf life	<ul style="list-style-type: none">■ Resin (A), SikaBiresin® L84 24 months■ Hardener (B), SikaBiresin® L84 18 months■ Hardener (B), SikaBiresin® GC12 12 months■ Hardener (B), SikaBiresin® L84 T 18 months
Storage temperature	<ul style="list-style-type: none">■ Resin (A), SikaBiresin® L84 18 – 25 °C■ Hardener (B), SikaBiresin® L84 18 – 25 °C■ Hardener (B), SikaBiresin® GC12 18 – 25 °C■ Hardener (B), SikaBiresin® L84 T 18 – 25 °C
Crystallization	<ul style="list-style-type: none">■ After prolonged storage at low temperature, crystallization of resin (A) may occur. This is easily removed by warming up for a sufficient time at a minimum 60 °C.
Opened packagings	<ul style="list-style-type: none">■ 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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