

PRODUCT DATA SHEET

Sikadur®-300

Epoxy impregnating / laminating resin for SikaWrap® structural strengthening fabrics



DESCRIPTION

Sikadur®-300 is a 2-part, epoxy based impregnating / laminating resin for SikaWrap® structural strengthening fabrics.

USES

Sikadur®-300 may only be used by experienced professionals.

- As an impregnating / laminating resin for the SikaWrap® fabric reinforcement wet application method
- As a substrate primer for the wet application method

CHARACTERISTICS / ADVANTAGES

- Easy to mix
- Application by impregnation roller
- Formulated for manual or mechanical saturation methods
- Good adhesion to many substrates
- High mechanical properties
- Extra-long pot life

APPROVALS / CERTIFICATES

- IBDiM, National Technical Assessment No. KOT-2019/0361 edition 1, Composite fabrics and plates for concrete strengthening, "Sika® Carbodur® kit for strengthening of concrete bridges"
- ITB, National Technical Assessment No. KOT-2018/0414 edition 2, "Sika® Carbodur® kit for strengthening and repair of concrete elements"
- CSTB, Avis Technique No. 3/16-875 (annule et remplace N° 3/10-669), Repair and Strengthening of structural elements of constructions with fiber reinforced polymers (FRP), "Sika® CarboDur® SikaWrap®"
- CSIC, Technical Suitability No. 604R/19, Systems for strengthening of reinforced concrete buildings, "Sika® Carbodur® - SikaWrap® systems"
- CIT, Certificate of Technical Suitability for use No. 290 18/07/2017, Fiber-reinforced polymer matrix (FRP) composite materials to be used for the structural consolidation of existing buildings, "Sika® Carbodur® - SikaWrap® systems"
- CE Marking and Declaration of Performance to EN 1504-4 - Structural bonding

PRODUCT INFORMATION

Composition	Epoxy resin	
Packaging	Part A	22,305 kg pre-batched unit
	Part B	7,695 kg pre-batched unit
Colour	Part A	~amber / liquid
	Part B	~pale yellow / liquid
	Parts A + B mixed	~light-yellow / liquid
Shelf life	24 months from date of production	

Storage conditions	The product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +30 °C. Always refer to packaging.	
Density	Mixed resin ~1,16 kg/l Value at +23 °C.	
Product declaration	EN 1504-4: Structural bonding	
Viscosity	Shear rate: 50 /s	
	Temperature	Viscosity
	+15 °C	~2000 mPa·s
	+23 °C	~700 mPa·s
	+40 °C	~200 mPa·s

TECHNICAL INFORMATION

Modulus of elasticity in flexure	~2800 N/mm ² (7 days at +23 °C)	(DIN EN 1465)		
Tensile strength	~45 N/mm ² (7 days at +23 °C)	(ISO 527)		
Modulus of elasticity in tension	~3500 N/mm ² (7 days at +23 °C)	(ISO 527)		
Tensile strain at break	1,5 % (7 days at +23 °C)	(ISO 527)		
Tensile adhesion strength	Concrete fracture (> 4 N/mm ²) on sandblasted substrate	(EN ISO 4624)		
Coefficient of thermal expansion	~6,0 × 10 ⁻⁵ (±0,2 × 10 ⁻⁵) 1/K (linear expansion between -20 °C and +40 °C)	(EN 1770)		
Glass transition temperature	Curing time	Curing temperature	TG	(EN 12614)
	30 days	+30 °C	+53 °C	
Heat deflection temperature	Curing time	Curing temperature	HDT	(ASTM D 648)
	7 days	+15 °C	+43 °C	
	7 days	+23 °C	+49 °C	
	3 days	+40 °C	+60 °C	
	7 days	+40 °C	+66 °C	
	Resistant to continuous exposure +45 °C.			
Service temperature	-40 °C to +45 °C			

SYSTEMS

System structure	<ul style="list-style-type: none"> Substrate primer: Sikadur®-300 / Sikadur®-330 Impregnating / laminating resin: Sikadur®-300 Structural strengthening fabric: SikaWrap® type to suit requirements
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APPLICATION INFORMATION

Mixing ratio	Part A : Part B = 100 : 34,5 by weight
Consumption	Guide: ~0,4–1,0 kg/m ² Also refer to: <ul style="list-style-type: none"> Method Statement: SikaWrap® manual wet application - Ref 850 41 03 Method Statement: SikaWrap® saturator machine wet application - Ref 850 41 04
Ambient air temperature	+15 °C min. / +40 °C max.

Dew point	Beware of condensation. The substrate and uncured applied resin must be at least +3 °C above dew point to reduce the risk of condensation or blooming on the resin surface.		
Substrate temperature	+15 °C min. / +40 °C max.		
Substrate moisture content	≤ 4 % parts by weight The following test methods can be used: Sika®-Tramex meter, CM-measurement or Oven-dry-method. No rising moisture according to ASTM (Polyethylene-sheet).		
Pot Life	Temperature	Pot life	Open time (EN ISO 9514)
	+15 °C	~3 hours	~6 hours
	+23 °C	-	~4 hours
	+40 °C	~60 minutes	~90 minutes

The pot life begins when Parts A+B are mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the pot life. To obtain longer workability at high temperatures, the mixed adhesive may be divided into smaller quantities. Another method is to chill Parts A+B before mixing (not below +5 °C).

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Substrates must be structurally sound and of sufficient tensile strength to provide a minimum tensile strength of 1,0 N/mm² or as required in the design specification.

Reference must be made to the Sika® Method Statements:

- Method Statement: SikaWrap® manual wet application - Ref 850 41 03
- Method Statement: SikaWrap® saturator machine wet application - Ref 850 41 04

SUBSTRATE PREPARATION

Reference must be made to the Sika® Method Statements:

- Method Statement: SikaWrap® manual wet application - Ref 850 41 03
- Method Statement: SikaWrap® saturator machine wet application - Ref 850 41 04

MIXING

Pre-batched unit

Prior to mixing all parts, mix Part A (resin) briefly using an electric single or double paddle mixer (max. 300 rpm) with a spiral paddle.

Add Part B (hardener) to part A and mix Parts A+B continuously for at least 3 minutes until a uniform mix has been achieved. To ensure thorough mixing pour materials into a clean container and mix again for approximately 1 minute. Over mixing must be avoided to minimise air entrainment. Mix full units only. Mixing time for A+B = ~4,0 minutes.

Bulk container

Add both parts in the correct proportion into a suitable clean, dry container and mix in the same way as for the pre-batched unit. Mix only the quantity which can be used within its pot life.

APPLICATION METHOD / TOOLS

Reference must be made to the Sika® Method Statements:

- Method Statement: SikaWrap® manual wet application - Ref 850 41 03
- Method Statement: SikaWrap® saturator machine wet application - Ref 850 41 04

CLEANING OF EQUIPMENT

Removal of fresh remnants from tools and application equipment can be carried out using Sika® Colma Cleaner immediately after use. Hardened material can only be mechanically removed.

FURTHER INFORMATION

- Method Statement: SikaWrap® manual wet application - Ref 850 41 03
- Method Statement: SikaWrap® saturator machine wet application - Ref 850 41 04

IMPORTANT CONSIDERATIONS

- Sikadur® resins are formulated to have low creep under permanent loading. However due to the creep behaviour of all polymer materials under load, when using adhesive for structural applications, the long term structural design load must account for creep. Generally, the long-term structural design load must be lower than 20–25 % of the failure load. A structural engineer must be consulted for design calculations for specific structural applications.
- Protect from rain for at least 24 hours after application. Ensure placement of fabric and laminating with roller takes place within open time.
- For application in cold or hot conditions, pre-condition material for 24 hours in temperature-controlled storage facilities to improve mixing, application and pot life limits.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

LEGAL NOTES

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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Product Data Sheet

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