

Sikadur®-300

2-part epoxy impregnation resin

Product Description

Sikadur®-300 is a two part, solvent free epoxy based impregnating resin.

Uses

- Impregnating resin for SikaWrap® fabric reinforcement for the wet application method
- Primer resin for the wet application system

Characteristics / Advantages

- Easy mix and application by trowel and impregnation roller
- Manufactured for manual or mechanical saturation methods
- Good adhesion to many substrates
- High mechanical properties
- Extra long pot life
- Solvent free

Tests

Approval / Standards

Conforms to the requirements of:

- ICBO Evaluation Report ER 5558 (USA).
- Road and Bridges Research Institute (Poland): IBDiM No AT/2003-04-336.

Product Data

Form

Appearance / Colours

Resin part. A: liquid
Hardener part B: liquid

Colour:

Part A: light-yellow to amber
Part B: pale yellow to clear liquid
Part A + B mixed: light-yellow to clear liquid

Packaging

Standard:
Part A: 7.435 kg
Part B: 2.565 kg pails

Industrial:

Part A: 22.305 kg
Part B: 7.695 kg pails



Storage

Storage Conditions / Shelf-Life 24 months from date of production if stored properly in original unopened, sealed and undamaged packaging in dry conditions at temperatures between +5°C and +25°C. Protect from direct sunlight.

Technical Data

Chemical Base Epoxy resin.

Density Mixed Resin: 1.16 kg/l (at +23°C).

Viscosity Shear rate: 50 /s

Temperature	Viscosity
+15°C	~ 2'000 mPas
+23°C	~ 700 mPas
+40°C	~ 200 mPas

Thermal Expansion Coefficient 60×10^{-6} per °C (-20°C to +40°C).

Thermal Stability Heat Distortion Temperature (HDT) (ASTM D648)

Curing	Temperature	HDT
7 days	+15°C	+43°C
7 days	+23°C	+49°C
3 days	+40°C	+60°C
7 days	+40°C	+66°C

Service Temperature - 40°C to + 60°C.

Mechanical / Physical Properties

Tensile Strength 45 N/mm² (7 days at +23°C). (DIN 53455)

Bond Strength Concrete fracture on sandblasted substrate: > 1 day. (EN 24624)

E-Modulus Flexural:
2800 N/mm² (7 days at +23°C) (DIN 53452)
Tensile:
3500 N/mm² (7 days at +23°C) (DIN 53455)

Elongation at Break 1.5% (7 days at +23°C). (DIN 53455)

Resistance

Chemical Resistance The product is not suitable for chemical exposure.

Thermal Resistance Continuous exposure +50°C.

System Information

System Structure Substrate primer - Sikadur[®]-330 / Sikadur[®]-300 / Sikadur[®]-300 with Sikadur[®]-513.
Impregnating/laminating resin - Sikadur[®]-300.
Structural strengthening fabric - SikaWrap[®] type to suit requirements.

Application Details

Consumption This will be dependant on the roughness of the substrate and the type of SikaWrap[®] fabric to be impregnated. See respective SikaWrap[®] fabric Product Data Sheet.
Guide: 0.4 - 1.0 kg/m².

Substrate Quality The substrate must be sound and of sufficient tensile strength to provide a minimum pull off strength of 1.0 N/mm² or as per the requirements of the design specification.
The surface must be dry and free of all contaminants such as oil, grease, coatings and surface treatments etc.
The surface to be bonded must be level (max. deviation 2 mm per 0.3 m length), with steps and formwork marks not greater than 0.5 mm. High spots can be removed by abrasive blasting or grinding.
Wrapped corners must be rounded to a minimum radius of 20 mm (depending on the SikaWrap[®] fabric type) or as per the design specification. This can be achieved by grinding edges or by building up with Sikadur[®] mortars.

Substrate Preparation Concrete and masonry substrates must be prepared mechanically using abrasive blast cleaning or grinding equipment, to remove cement laitance, loose and friable material to achieve a profiled open textured surface.
Timber substrates must be planed or sanded.
All dust, loose and friable material must be completely removed from all surfaces before application of the Sikadur[®]-300 preferably by brush and industrial vacuum cleaner. Weak concrete/masonry must be removed and surface defects such as honeycombed areas, blowholes and voids must be fully exposed.
Repairs to substrate, filling of blowholes/voids and surface levelling must be carried out using Sikadur[®]-41 or a mixture of Sikadur[®]-30 and Sikadur[®]-501 quartz sand (mix ratio 1 : 1 max parts by weight).
Bond tests must be carried out to ensure substrate preparation is adequate.
Inject cracks wider than 0.25 mm with Sikadur[®]-52 or other suitable Sikadur[®] injection resin.

Application Conditions / Limitations

Substrate Temperature +15°C min. / +40°C max.

Ambient Temperature +15°C min. / +40°C max.

Substrate Humidity ≤ 4% moisture content. Test method: Sika-Tramex meter.

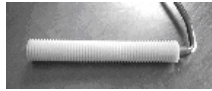
Dew Point Beware of condensation!

Ambient temperature during application must be at least 3°C above dew point.

Application Instructions

Mixing Part A : part B = 100 : 34.5 by weight
When using bulk material the exact mixing ratio must be safeguarded by accurately weighing and dosing each component.

Mixing Time Pre-batched units:
Mix parts A+B together for at least 3 minutes at low speed. Avoid aeration while mixing. Then, pour the whole mix into a clean container and stir again for approx. 1 more minute at low speed to keep air entrapment at a minimum.
Bulk packing, not pre-batched:
Add the parts in the correct proportions into a suitable mixing pail and stir correctly using an electric low speed mixer as above for pre-batched units.



Preparation:

Prior to application confirm substrate moisture content, relative humidity and dew point.

Cut the specified SikaWrap[®] fabric to the desired dimensions.

Primer Application:

Primer application is the same for manual or mechanical saturator application.

- Rough surface (e.g. grit blasted): prime with Sikadur[®]-330 or Sikadur[®]-300 mixed with max. 5% thixotropic agent Sikadur[®]-513 using trowel, roller or brush.
- Smooth surface (e.g. grinded): prime with Sikadur[®]-300 or -330 using trowel, roller, or brush.

Primer consumption:

0.5 - 1.0 kg/m² depending on roughness of the substrate.

Fabric application must be done wet on wet or within 60 minutes after application of the primer.

Manual Resin Application – (Woven and Non-Woven Fabrics):
Distribute 2/3 of the expected Sikadur[®]-300 quantity on a clean PE sheet and then place the pre-cut fabric onto the resin covered sheet. Saturate SikaWrap[®] fabric by rolling with a mohair roller in the fibre direction. Distribute the remaining 1/3 of the Sikadur[®]-300 onto the fabric and evenly spread with roller to fully saturate fabric.

The resin consumption can be checked by taking the weight of the fabric before and re-weighing after wetting with Sikadur[®]-300.

Manual Resin Application- (Non-Woven Fabrics Alternative):

Apply 2/3 of the expected Sikadur[®]-300 quantity onto the primed substrate by roller or spray.

Mechanical Saturator Resin Application - (Woven and Non-Woven):

Have pre-cut fabric ready or roll of fabric positioned on the saturator. Wet the rollers by pouring a bead of Sikadur[®]-300 in the centre of the rollers, while slowly rotating the rollers. Pass the fabric over the top bar, in-between the measuring counter and through the rollers.

Slowly rotate the saturator rollers continuously. Remove the take-up roller (plastic tubing) containing the saturated SikaWrap[®] fabric. Gradually unwind the fabric from the plastic tubing adjacent to the substrate.

Fabric Placement and Laminating:

Place the saturated SikaWrap[®] fabric onto the primed wet surface in the required direction and smooth by hand to remove folds and creases. After smoothing and placement, the fabric is laminated onto the substrate using the Sika plastic impregnating roller. Pass the roller over the fabric parallel to the fibre direction until the resin is distributed evenly over the fabric and entrapped air is released. Avoid excessive force when laminating to prevent folding or creasing of the SikaWrap[®] fabric.

Non Woven Fabrics Alternative:

After smoothing and placement of the dry or pre-wetted SikaWrap® fabric onto the primer layer, apply the remaining 1/3 evenly onto the fabric and use Sika plastic impregnation roller to laminate fabric onto the substrate.

Additional Fabric Layers:

For additional layers of SikaWrap® fabric, apply Sikadur®-300 to previous applied layer wet on wet or within 2 hours (at +23 °C) after application of the previous layer and repeat laminating procedure.

If it is not possible to apply within 2 hours, a waiting time of at least 12 hours must be observed before application of next layer.

Overlays:

If a cementitious overlay is to be applied over SikaWrap® fabric an additional resin layer must be applied over final layer at a max. 0.5 kg/m². Broadcast with quartz sand while wet which will serve as a key for the overlay.

Overlaps

Fibre Direction:

- Overlapping of the SikaWrap® fabric must be at least 100 mm (depending on the SikaWrap® fabric type) or as specified in the strengthening design.

Side by Side:

- Unidirectional fabrics: when placing several unidirectional SikaWrap® fabrics side by side no overlapping is required unless specified in the strengthening design.
- Multi-directional fabrics: overlapping in the weft direction must be at least 100 mm (depending on the SikaWrap® fabric type) or as specified in the strengthening design.

Cleaning of Tools

Clean all equipment immediately with Sika® Colma Cleaner/Thinner C. Cured material can only be mechanically removed.

Potlife

Potlife:

Temperature	Time
+15 °C	6 hours
+23 °C	4 hours
+40 °C	90 minutes

Potlife starts with the mixing of both parts (resin and hardener). At low ambient temperature pot life will be extended, at elevated temperatures this will be reduced. The higher the quantity of material mixed, the shorter the potlife.

Open time:

Temperature	Time
+15 °C	3 hours
+40 °C	60 minutes

Waiting Time / Overcoatability

To (pre-) cured resin:

Products	Substrate Temperature	Minimum	Maximum
Sikadur®-300	+15 °C	36 hours	Cured resin older than 7 days has to be degreased with Sika® Colma Cleaner/Thinner C and gently grinded with a sandpaper before coating.
Sikadur®-300	+23 °C	24 hours	
Sikadur®-300	+40 °C	12 hours	

Products	Substrate Temperature	Minimum	Maximum
Sikadur®-300	+15 °C	7 days	Cured resin older than 7 days has to be degreased with Sika® Colma Cleaner/Thinner C and gently grinded with a sandpaper before coating.
Sikagard®-coloured coatings	+23 °C	5 days	
Sikagard®-coloured coatings	+40 °C	3 days	

Times are approximate and will be affected by changing ambient conditions.

Notes on Application / Limitations

This product may only be used by experienced professionals.

The Sikadur®-300 must be protected from rain for at least 24 hours after application.

Ensure placement of fabric and laminating with roller takes place within open time.

The SikaWrap® fabric must be coated with a cementitious overlay or coating for aesthetic and/or protective purposes. Selection will be dependent on exposure requirements. For basic UV protection use Sikagard®-550W Elastic, Sikagard® Elastocolor-675W or Sikagard®-680S.

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.

The number of additional fabric layers applied wet on wet must be closely controlled to avoid creeping, creasing or slippage of the fabric during curing of the Sikadur®-300. The number of layers will be dependent on the type of SikaWrap® fabric used and the ambient climate conditions.

Curing Details**Applied Product ready for use**

Temperature	Full cure
+15 °C	14 days
+23 °C	7 days
+40 °C	5 days

All cure times are approximate and will be affected by changing ambient conditions.

Value Base

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.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet 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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