BUILDING TRUST

PRODUCT DATA SHEET

Sikadur®-31 DW

Epoxy structural adhesive approved for contact with drinking water

PRODUCT DESCRIPTION

Sikadur®-31 DW is a two-part, epoxy, moisture-tolerant structural adhesive. It is used for bonding many construction materials and for minor concrete repairs, joint filling, and crack sealing.

USES

Sikadur®-31 DW installation works to be carried out only by Sika Approved Contractors. Please observe information given by Product Data Sheets.

The Product is used for bonding the following materials:
- Concrete.
- Natural stone.
- Ceramics.
- Fibre cement.
- Mortar.
- Brick masonry.
- Brick slips.
- Steel.
- Iron.
- Wood.
- Glass.
- Sikadur-Combiflex® SG System for drinking water applications.

The Product if used for repairing and reprofiling:
- Corners and edges.
- Holes.
- Voids.
- Metal profiles.

The Product is used for filling and sealing:
- Joint arrises.
- Crack arrises.
- Non-structural static cracks.

CHARACTERISTICS / ADVANTAGES

- Approved for contact with drinking water.
- Easy to mix and apply.
- Very good adhesion to many construction materials.
- Very good mechanical strength.
- Hardens without shrinkage.
- Thixotropic: non-sag in vertical and overhead applications.
- Differently coloured components for mixing control.
- No primer required.
- Good resistance to abrasion.
- Impermeable to liquids and water vapour.
- Good resistance to specific chemicals.

ENVIRONMENTAL INFORMATION

- Contributes towards satisfying Materials and Resources (MR) Credit: Building product disclosure and optimization — Environmental Product Declarations under LEED® v4.
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4.
- Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU).

APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 1504-4:2004 Products and systems for the protection and repair of concrete structures — Structural bonding.
- Drinking Water Approval (WRAS Approval No. 240355034) comprising of Sikadur Combiflex SG Jointing System, using Sikadur 31DW
- Adhesive for Waterproofing System ÖNORM B 5014 Test 1, Sikadur®-31 DW, OFI Techn.
- Migration Analysis RD 118/2003, Sikadur®-31 DW, O.T.E.C., Test report No. 0761415488.
- Drinking water approval ASC, CARSO.

PRODUCT INFORMATION

Chemical Base	Epoxy resin and selected fillers	
Packaging	Parts A+B pre-batched unit	6 kg container
	Refer to the current price list for available packaging variations.	
Colour	Part A	White
	Part B	Dark grey
	Part A+B mixed	Concrete grey
Shelf Life	24 months from date of production	
Storage Conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +30 °C. Always refer to packaging. Refer to the current Safety Data Sheet for information on safe handling and storage.	
Density	Mixed resin at +20 °C	(2.00 ± 0.1) kg/l
Product Declaration	EN 1504-4: Structural bonding	

TECHNICAL INFORMATION

Compressive Strength	Cured 14 days at +23 °C	~78 N/mm²	(EN 196-1)
Flexural Strength	Cured 14 days at +23 °C	~37 N/mm²	(EN 196-1)
Tensile Strength	Cured 14 days at +23 °C	~23 N/mm²	(EN ISO 527-2)
Tensile Modulus of Elasticity	6 500 N/mm²		(EN ISO 527-2)
Shrinkage	Hardens without shrinkage		

Tensile adhesion strength (EN ISO 4624; EN 12188; EN 1542)

Curing Time	Substrate	Curing Temperature	Adhesion strength
7 days	Concrete dry	+23 °C	≥ 4.5 N/mm² (100 % concrete failure)
7 days	Concrete moist	+23 °C	≥ 4.5 N/mm² (100 % concrete failure)
7 days	Steel sandblasted	+23 °C	9 N/mm²

Coefficient of Thermal Expansion	$(2.36 \times 10^{-5} \pm 0.2 \times 10^{-5})$ 1/K Linear expansion between +23 °C and +60 °C	(EN 1770)
Chemical Resistance	Resistant to many chemicals. Contact Sika Technical Services for additional information.	

Heat deflection temperature	**Curing time**	**Curing temperature**	**HDT**	(ISO 75-1)
	7 days	+23 °C	+50 °C	

APPLICATION INFORMATION

Mixing Ratio	Part A : Part B	3 : 1 by weight or volume
Consumption	~2.0 kg/m2 per mm of thickness *This figure is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level or wastage, etc.*	
Layer Thickness	30 mm maximum For non-structural adhesive or other applications, if layer thicknesses of >30 mm are required, apply in successive 30 mm layers, once the previous layer has hardened. The surface of the freshly applied intermediate layers should be scratched to form a key for subsequent layers. If layer application is to be longer than 2 days, the wet applied adhesive must be blinded to excess with quartz sand immediately after application.	
Sag Flow	Non-sag up to 10 mm thickness on vertical surfaces	(EN 1799)
Product Temperature	Maximum	+30 °C
	Minimum	+10 °C
Ambient Air Temperature	Maximum	+30 °C
	Minimum	+10 °C
Dew Point	Beware of condensation. Substrate temperature during application must be at least +3 °C above dew point.	
Substrate Temperature	Maximum	+30 °C
	Minimum	+10 °C
Substrate Moisture Content	Substrates must be dry or matt damp (no standing water).	

Pot Life	**Temperature**	**Pot life 200 g**	**Open times**	(ISO 9514)
	+23 °C	105 minutes	-	
	+30 °C	-	45 minutes	

SYSTEM INFORMATION

System Structure	Refer to the Sikadur-Combiflex® SG System product data sheet.

VALUE BASE

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

LIMITATIONS

IMPORTANT
Damage due to insufficient long-term structural design load
Sikadur® resins are formulated to have low creep under permanent loading. However, due to the creep behavior of all polymer materials under load, the long-term structural design load must account for creep. Ensure that the long-term structural design load is lower than 20 to 25 % of the failure load.
Consult a structural engineer for calculating the load for the specific application.

ECOLOGY, HEALTH AND SAFETY

Local safety regulations must be observed and it advisable to wear PPI when working with this product with particular attention paid to cutting and handling. Transportation Class: The product is not classified as hazardous good for transport. Disposal: The material is recyclable. Disposal must be according to local regulations. Please contact your local Sika sales organisation for more information.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

CONCRETE, MASONRY, MORTAR, STONE
Concrete and mortar must be at least 28 days old.
Substrates must be sound, clean, dry or matt damp but free of standing water. Substrates must be free of contaminants such as ice, dirt, oil, grease, coatings, laitance, efflorescence, surface treatments and loose friable material.

STEEL
Surfaces must be sound, clean, dry and free of contaminants such as dirt, oil, grease, coatings and loose friable material.

WOOD
Surfaces must be sound, clean, dry and free of contaminants such as dirt, oil, grease, coatings and loose friable material.

SUBSTRATE PREPARATION

Surface contaminants such as dust and loose material, including the contaminants generated during substrate preparation, can reduce the Product's performance.
Before applying the Product, clean thoroughly all substrate surfaces using vacuum or dust removal equipment.

CONCRETE, MASONRY, MORTAR OR STONE
Suitable techniques for substrate preparation include the following:
- Abrasive blast cleaning
- Needle gunning
- Light scabbling
- Bush hammering
- Grinding

Prepare the substrate mechanically using a suitable technique giving the substrate has an open-textured, gripping surface profile.

STEEL
Suitable techniques for substrate preparation include the following:
- Abrasive blast cleaning
- Rotating wire brush
- Grinding

Prepare the substrate mechanically using a suitable technique giving the substrate a bright metal finish with a surface profile to satisfy the necessary tensile adhesion strength requirement.

WOOD
Prepare the substrate by planing, sanding or using other suitable equipment.

MIXING

When using multiple units during application, do not mix the following unit until the previous unit has been used.

PRE-BATCHED UNITS
Mix full units only. Prior to mixing all parts, mix part A (resin) briefly using a mixing spindle attached to a slow-speed electric mixer (max. 300 rpm).
Add part A to part B (hardener) and mix parts A+B continuously for at least 3 minutes until a uniformly coloured smooth consistency mix has been achieved. Do not overmix. To ensure thorough mixing, pour materials into a clean container and mix again for approximately 1 minute. Mixing time for A+B = 4 minutes.

APPLICATION

IMPORTANT
Damage due to unsupported heavy components applied vertically or overhead
Full adhesion is not achieved before the Product has fully hardened. Hardening depends on ambient temperatures. Unsupported heavy components might fall down when not supported.
Provide temporary support for heavy components until the Product has fully hardened.

BONDING
Prior to application confirm dew point conditions before and during application.
On damp prepared concrete substrates, always apply the Product by brush and work the Product well into the substrate. Apply the mixed adhesive to the prepared surfaces with a spatula, trowel, notched trowel or by gloved hand.
For optimum adhesion apply the adhesive to both surfaces that require bonding.
For heavy components positioned vertically or overhead, provide temporary support until the Product has fully hardened.

REPAIR
Prior to application confirm dew point conditions before and during application.
On damp prepared concrete substrates, always apply the Product by brush and work the Product well into the substrate. Apply the mixed adhesive to the prepared surfaces with a spatula, trowel or by gloved hand.

JOINT FILLING AND CRACK SEALING
Apply the mixed adhesive to the prepared surfaces with a spatula or trowel.

CLEANING OF TOOLS

Clean all tools and application equipment with Sika® Thinner C immediately after use. Hardened material can only be removed mechanically.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

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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