BUILDING TRUST

PRODUCT DATA SHEET

Sikadur®-31 DW

2-PART EPOXY STRUCTURAL ADHESIVE WITH DRINKING WATER CONTACT APPROVAL

PRODUCT DESCRIPTION

Sikadur®-31 DW is a 2-part epoxy based moisture tolerant, thixotropic, structural adhesive which bonds most construction materials. It has high mechanical strengths and can also be used for minor concrete repairs, joint filling and crack sealing. Temperature range +10 °C to +30 °C. Internal and external use. It has been specially formulated to meet the requirements for use in contact with drinking water.

USES

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

Structural adhesive for bonding:
- Concrete elements
- Hard natural stone
- Ceramics, fibre cement
- Mortar, Bricks, Masonry
- Steel, Iron, Aluminium
- Wood
- Polyester, Epoxy
- Glass
- Sikadur®-Combiflex® System for drinking water applications

Repair and adhesive for:
- Corners and edges
- Holes and void filling
- Metal profiles
- Bonding slip bricks

Joint filling and crack sealing:
- Joint and crack arris / edge repair
- Sealing non-structural static cracks

CHARACTERISTICS / ADVANTAGES

- Can be used in drinking water areas
- Easy to mix and apply
- Very good adhesion to most construction materials
- High mechanical strengths
- Thixotropic: non-sag in vertical and overhead applications
- Hardens without shrinkage
- Different coloured components (for mixing control)
- No primer needed
- High initial and ultimate mechanical strength
- Good abrasion resistance
- Impermeable to most liquids and water vapour
- Good chemical resistance

APPROVALS / STANDARDS

- CE Marking and Declaration of Performance to EN 1504-4 - Structural bonding
- Adhesive for Waterproofing System ÖNORM B 5014 Test 1, Sikadur®-31 DW, OFI Technologie & Innovation GmbH, Test Report No. 408.394
- Migration Analysis RD 118/2003, Sikadur®-31 DW, O.T.E.C., Test report No. 0761415488
- Water Regulations Approval BS6920-1, Sikadur®-31 DW, WRAS, Approval No. 1708503

PRODUCT INFORMATION

Chemical Base	Epoxy resin and selected fillers

Packaging	Parts A+B: 6 kg	Pre-batched unit
		Pallets of 90 units
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.	
Density	Mixed resin: ~2,00 ±0,1 kg/l Density value at +20 °C	
Product Declaration	EN 1504-4: Structural bonding	

TECHNICAL INFORMATION

Compressive Strength	**Curing time**	**Curing temperature 23 °C**	(DIN EN 196)
	14 days	~78 N/mm²	
Flexural Strength	**Curing time**	**Curing temperature 23 °C**	(DIN EN 196)
	14 days	~37 N/mm²	
Tensile Strength	**Curing time**	**Curing temperature 23 °C**	(ISO 527)
	14 days	~23 N/mm²	
Tensile Modulus of Elasticity	~6 500 N/mm²		(ISO 527)

Tensile Adhesion Strength (EN ISO 4624, EN 1542, EN 12188)

Curing time	Substrate	Curing temperature	Adhesion strength
7 days	Concrete dry	+23 °C	3 N/mm² *
7 days	Concrete moist	+23 °C	2 N/mm² *
7 days	Steel sand-blasted	+23 °C	9 N/mm²

*100 % concrete failure

Shrinkage	Hardens without shrinkage.		
Coefficient of Thermal Expansion	~2,36 × 10^{-5} (±0,2 × 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 (ISO 75)

Curing time	Curing temperature	HDT
7 days	+23 °C	+50 °C

SYSTEM INFORMATION

System Structure	Refer to the Sikadur®-Combiflex® System product data sheet for all applications with this system.

APPLICATION INFORMATION

Mixing Ratio	Part A : Part B = 3 : 1 by weight or volume

Layer Thickness	30 mm max. For non- structural adhesive or other applications, if layer thickness's of >30 mm are required, apply in successive 30 mm layers or 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	+10 °C min. / +30 °C max.
Ambient Air Temperature	+10 °C min. / +30 °C max.
Dew Point	Beware of condensation. Steel substrate temperature during application must be at least +3 °C above dew point.
Substrate Temperature	+10 °C min. / +30 °C max.
Substrate Moisture Content	Cementitious substrates must be dry or matt damp (no standing water). Brush the adhesive well into the substrate if matt damp.

Pot Life (EN ISO 9514)

Temperature	Potlife*	Open time
+23 °C	~105 minutes	—
+30 °C	—	~45 minutes

*200 g
Potlife begins when parts A+B mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the potlife. 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).

Waiting Time / Overcoating	Sikadur®-31 DW may be overcoated with a Sika® compatible epoxy coating when adhesive has hardened

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Concrete / masonry / mortar / stone
Concrete and mortar must be at least 3–6 weeks old. Substrate surfaces must be sound, clean, dry or matt damp. Free from standing water, ice, dirt, oil, grease, coatings, laitance, efflorescence, old surface treatments, all loose particles and any other surface contaminants that could affect adhesion of the adhesive.
Steel
Surfaces must be clean, dry, free from oil, grease, coatings, rust, scale, all loose particles and any other surface contaminants that could affect adhesion of the adhesive.
Wood
Substrate surfaces must be sound, clean, dry and free from dirt, oil, grease, coatings, all loose particles and any other surface contaminants that could affect adhesion of the adhesive.

SUBSTRATE PREPARATION

Concrete / masonry / mortar / stone
Substrates must be prepared mechanically using suitable abrasive blast cleaning, needle gunning, light scabbling, bush hammering, grinding or other suitable equipment to achieve an open textured gripping surface profile.
Steel
Surfaces must be prepared mechanically using suitable abrasive blast cleaning, grinding, rotating wire brush or other suitable equipment to achieve a bright metal finish with a surface profile to satisfy the necessary tensile adhesion strength requirement. Avoid dew point conditions before and during application.
Wood
Surfaces must be prepared by planing, sanding or other suitable equipment.
All substrates
All dust and loose material must be completely removed from all substrate surfaces before application of the product by vacuum / dust removal equipment.

MIXING

Pre-batched units
Prior to mixing all parts, mix part A (resin) briefly using a mixing spindle attached to a slow speed electric drill (max. 300 rpm). Add part B (hardener) to part A and mix parts A+B continuously for at least 3 minutes until a uniformly coloured smooth consistency 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. Mix only the quantity which can be used within its pot life.

APPLICATION METHOD / TOOLS

Adhesive
Apply mixed adhesive to the prepared surfaces with a spatula, trowel, notched trowel or by gloved hand.
For optimum adhesion, it is recommended to apply adhesive to both surfaces that require bonding.
For heavy components positioned vertically or overhead, provide temporary support until Sikadur®-31 DW has fully hardened /cured. Hardening and curing will be dependent on ambient temperatures.
Repair
Apply mixed adhesive to the prepared surfaces with a spatula, trowel or by gloved hand. Use temporary formwork as required.
Joint filling and crack sealing
Apply mixed adhesive to the prepared surfaces with a spatula or trowel.

CLEANING OF TOOLS

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

LIMITATIONS

- 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.
- When using multiple units during application, do not mix the following unit until the previous one has been used in order to avoid a reduction in workability and handling time.
- For heavy components positioned vertically or overhead, provide temporary support.

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.

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.

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.

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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