

PRODUCT DATA SHEET

Sikadur®-31 DW Rapid

2-COMPONENT EPOXY ADHESIVE TESTED FOR DRINKING WATER CONTACT



PRODUCT DESCRIPTION

Sikadur®-31 DW Rapid is a solvent-free, thixotropic, 2-component adhesive and repair mortar, based on epoxy resins and special fillers which has been specially formulated to meet the requirements for use in contact with drinking water.

USES

Sikadur®-31 DW Rapid may only be used by experienced professionals.

As a structural adhesive for the following substrates:

- Concrete
- Hard natural stone
- Mortar, Bricks
- Steel

As adhesive for use with Sikadur®Combiflex SG

As a structural adhesive for precast concrete segments including:

- Columns, beams etc.
- Kerbs and edging stones, copings etc.

Rapid curing concrete repairs:

- Corners and edges
- Hole and void filling
- Joint arrises

Joint filling and crack sealing:

- Rigid joint filling
- Crack filling and sealing (non-moving)

CHARACTERISTICS / ADVANTAGES

Sikadur®-31 DW Rapid provides the following advantages:

Can be used in drinking water installations as part of the Sikadur Combiflex®SG system

Easy to mix and apply

Very good adhesion to most of the construction materials

Thixotropic: Non-sag and suitable for vertical and overhead application

Solvent-free

Hardens without shrinkage

Different coloured components (for mixing control)

No primer needed

High initial and ultimate strengths

Good abrasion resistance

APPROVALS / STANDARDS

Compliance with Regulation 31(4) a of the UK Water Supply (Water Quality) Regulations, when used as part of a system with Sikadur®SG Combiflex

Testing according to EN 1504-4

All raw materials are on European synoptic list for drinking water applications

PRODUCT INFORMATION

Chemical Base	Epoxy resin	
Packaging	6 kg (A+B)	Prebatched unit
Colour	Component A: white Component B: black Component A+B mixed: grey	
Shelf Life	18 months from date of production	

Storage Conditions

Store in original, unopened, sealed and undamaged packaging in dry conditions at temperatures between +5 °C and +30 °C. Protect from direct sunlight.

Density

1.95 kg/l (part A+B mixed) (at +20 °C)

TECHNICAL INFORMATION

Compressive Strength	Curing time	Curing temperature		(ASTM D 695)
		+5 °C	+20 °C	
	1 day	—	~ 28 N/mm ²	
	3 days	~ 23 N/mm ²	~ 33 N/mm ²	
	7 days	~ 38 N/mm ²	~ 38 N/mm ²	
	14 days	~ 43 N/mm ²	~ 43 N/mm ²	

Modulus of Elasticity in Compression	~ 5400 N/mm ² (14 days at +5 °C)	(ASTM D 695)
	~ 6400 N/mm ² (14 days at +20 °C)	(ASTM D 695)

Flexural Strength	Curing time	Curing temperature		(EN ISO 178)
		+5 °C	+20 °C	
	1 day	~ 11 N/mm ²	~ 11 N/mm ²	
	3 days	~ 23 N/mm ²	~ 25 N/mm ²	
	7 days	~ 27 N/mm ²	~ 29 N/mm ²	
	14 days	~ 27 N/mm ²	~ 32 N/mm ²	

Tensile Strength	Curing time	Curing temperature		(ISO 527-2)
		+5 °C	+20 °C	
	1 day	~ 8 N/mm ²	~ 8 N/mm ²	
	3 days	~ 16 N/mm ²	~ 16 N/mm ²	
	7 days	~ 19 N/mm ²	~ 20 N/mm ²	
	14 days	~ 21 N/mm ²	~ 22 N/mm ²	

Elongation at Break	0.3 ± 0.1 % (14 days at +5 °C)	(ISO 527-2)
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Shrinkage Hardens without shrinkage

Tensile Adhesion Strength	Curing time	Substrate	Curing temperature	Adhesion strength	(EN ISO 4624) (EN 1542) (EN 12188)
7 days	Concrete moist	+5 °C	~ 2.8 N/mm ² *		
7 days	Steel sand-blasted	+5 °C	~ 13.8 N/mm ²		

* concrete failure

Coefficient of Thermal Expansion	W = 2.11 x 10 ⁻⁵ per °C (Temp. range +23 °C – +60 °C)	(EN 1770)
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Glass Transition Temperature	50 °C (7 days at +20 °C)	(EN 12614)
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Heat Deflection Temperature	Curing time	Curing temperature	HDT	(ASTM D 695)

SYSTEM INFORMATION**System Structure**

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

APPLICATION INFORMATION

Mixing Ratio	Component A : component B = 3 : 1 by weight or volume		
Layer Thickness	30mm max per layer. Multiple layers can be used to achieve required final thickness. Wait for each previous layer to harden & cool before applying next layer.		
Sag Flow	On vertical surfaces it is non-sag up to 10mm thick.		(EN 1799)
Product Temperature	Sikadur®-31 DW Rapid must be at a temperatures of between +5 °C and +20 °C for application.		
Ambient Air Temperature	+5 °C min. / +20 °C max.		
Dew Point	Beware of condensation. Substrate temperature during application must be at least 3 °C above dew point.		
Substrate Temperature	+5 °C min. / +20 °C max.		
Substrate Moisture Content	Substrate must be dry or mat damp (no standing water) Brush the adhesive well into the substrate		
Pot Life	Temperature	Potlife*	Open time**
	+5 °C	~ 90minutes	—
	+20 °C	~ 40minutes	~ 50minutes
<small> *120g **EN 12189 The potlife begins when the resin and hardener are 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 portions. Another method is to chill components A+B before mixing them (not below +5 °C). </small>			

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Mortar and concrete must be older than 28 days (depends on minimal requirement of strengths).

Verify the substrate strength (concrete, masonry, natural stone).

The substrate surface (all types) must be clean, dry or mat damp (no standing water) and free from contaminants such as dirt, oil, grease, existing surface treatments and coatings etc.

Steel substrates must be de-rusted similar to Sa 2.5.

The substrate must be sound and all loose particles must be removed.

SUBSTRATE PREPARATION

Concrete, mortar, stone, bricks

Substrates must be sound, dry or mat damp (no standing water), clean and free from laitance, ice, grease, oils, old surface treatments or coatings and all loose or friable particles must be removed to achieve a laitance and contaminant free, open textured surface.

Steel

Must be cleaned and prepared thoroughly to an acceptable quality i.e. by blast-cleaning and vacuum.

Avoid dew point conditions.

MIXING

Mix components A+B together for at least 3 minutes with a mixing spindle attached to a slow speed electric drill (max. 600rpm) until the material becomes smooth in consistency and a uniform grey colour. 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. Mix only that quantity which can be used within its pot life.

APPLICATION METHOD / TOOLS

For any application in public water distribution system consult Instructions for use (IFU) document available from Sika Technical Service

When using a thin layer adhesive, apply the mixed adhesive to the prepared surface with a spatula, trowel, notched trowel, (or with hands protected by gloves).

When applying as a repair mortar, use appropriate formwork.

When using for bonding metal profiles onto vertical surfaces, support and press uniformly using props for at least 12 hours, depending on the thickness applied (not more than 5 mm) and the room temperature.

Once hardened check the adhesion by lightly tapping with a hammer.



CLEANING OF TOOLS

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

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.

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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