

Product Data Sheet
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Sikadur®-31 GB Rapid

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2-part thixotropic epoxy adhesive

Product Description

Sikadur®-31 GB Rapid is a solvent-free, moisture tolerant, thixotropic, structural two part adhesive and repair mortar, based on epoxy resins and special fillers, designed for use at temperatures between +5°C and +20°C.

Uses

As a structural adhesive for:

- Concrete elements
- Hard natural stone
- Ceramics, fibre Cement
- Mortar, Bricks, Blocks, Masonry etc.
- Steel, Iron, Aluminium
- Wood
- Polyester, Epoxy
- Glass

As a fast setting repair mortar for:

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

Joint filling and crack sealing:

- Rigid joint filling
- Crack filling and sealing (non moving)
- For use with any of the Sikadur®-Combiflex systems.

Characteristics / Advantages

Sikadur®-31 GB Rapid has the following advantages:

- Easy to mix and apply
 - Suitable for dry and damp concrete surfaces
 - Very good adhesion to most construction materials
 - High strength adhesive
 - 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
 - Adhesive and filler in one
 - Impermeable to liquids and water vapour
 - Good chemical resistance
 - Approved for potable water
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Tests

Approval / Standards Conforms to ASTM C 881-78, Type I, Grade 3, Class B+C.
Conforms to EN 1504-4. Approved for potable water.

Product Data

Form

Colours Part A: white
Part B: dark grey
Part A+B mixed: concrete grey

Packaging 6 kg (A+B) Pre batched unit, Pallets of 480 kg (80 x 6 kg).
1.2 kg (A+B) Pre batched unit, in boxes of 6 x 1.2 kg.

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 +30°C. Protect from direct sunshine.

Technical Data

Chemical Base Epoxy resin.

Density 1.65 kg/l (part A+B mixed) (at +20°C)

Sag Flow On vertical surfaces it is non-sag up to 10 mm thickness. (According to EN 1799)

Layer Thickness 30 mm max.

When using multiple units, one after the other. Do not mix the following unit until the previous one has been used in order to avoid a reduction in handling time.

Change of Volume Shrinkage / Creep:
Hardens without shrinkage.

Thermal Expansion Coefficient Coefficient W:
5.0 x 10⁻⁵ per °C (Temp. range: -20°C to +40°C). (According EN 1770)

Mechanical / Physical Properties

Compressive Strength

(According to DIN EN 196)

Curing time	+10°C	+5°C
1 day	40 - 45 N/mm ²	35 - 40 N/mm ²
10 days	60 - 70 N/mm ²	

Flexural Strength

(According to DIN EN 196)

Curing time	+10°C to +15°C
10 days	30 - 40 N/mm ²

Tensile Strength

(According to ISO 527)

Curing time	+10°C to +15°C
10 days	15 - 20 N/mm ²

Bond Strength

(According to EN ISO 4624, EN 1542 and EN 12188)

Curing time	Temperature	Substrate	Bond strength
10 days	+10°C to +15°C	Concrete dry	> 4 N/mm ² *
10 days	+10°C to +15°C	Steel	15 N/mm ²

*100% concrete failure.

E-Modulus

~ 4'300 N/mm²

(According to ISO 527)

System Information

Application Details

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 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, clean and free from laitance, ice, standing water, 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 blastcleaning and vacuum. Avoid dew point conditions.

Other surfaces (polyester, epoxy, glass, ceramic):

On these substrates pre-apply Sikafloor®-156 (primer) and then, "wet on wet" apply Sikadur®-31 GB Rapid.

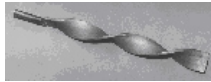
Application Conditions / Limitations

Substrate Temperature	+5°C min. / +20°C max.
Ambient Temperature	+5°C min. / +20°C max.
Material Temperature	Sikadur®-31 GB Rapid must be at a temperature of between +5°C and +30°C for application.
Substrate Humidity	When applied to mat moisture concrete, brush the adhesive well into substrate.
Dew Point	Beware of condensation! Substrate temperature during application must be at least 3°C above dew point.

Application Instructions

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

Mixing Time



Pre-batched units:

Mix parts A+B together for at least 3 minutes with a mixing spindle attached to a slow speed electric drill (max. 600 rpm) 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 potlife.

Application Method / Tools

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 some 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 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 mechanically removed.

Potlife

Potlife (200 g)

(According to EN ISO 9514)

+5°C	+10°C	+15°C
~ 60 minutes	~ 40 minutes	~ 20 minutes

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 parts A+B before mixing them (not below +5°C).

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 shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.
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