BUILDING TRUST

PRODUCT DATA SHEET

Sikadur®-41 CF Rapid

3-component thixotropic epoxy patching mortar

PRODUCT DESCRIPTION

Sikadur®-41 CF Rapid is a moisture tolerant, thixotropic, structural, 3-component adhesive and repair mortar, based on a combination of epoxy resins and special fillers, designed for use at temperatures between +5 °C and +20 °C.

USES

As a repair and bonding mortar for:
- Concrete elements
- Hard natural stone
- Ceramics, Fiber cement
- Mortar, Bricks, Masonry
- Steel, Iron, Aluminium
- Wood
- Polyester, Epoxy
- Glass

As a repair mortar:
- Filling of cavities and voids
- Vertical and overhead use
- Corners and edges

As an abrasion and impact resistant wearing course:
- Joint filling and crack sealing
- Joint and crack arris / edge repair

CHARACTERISTICS / ADVANTAGES

Sikadur®-41 CF Rapid has the following advantages:
- Easy to mix and apply.
- Very good adhesion to most construction materials.
- High strength adhesive.
- 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 liquids and water vapour.
- Good chemical resistance.

APPROVALS / STANDARDS

Mortar for structural and non-structural repair, tested according to EN 1504-3, provided with the CE-mark.

PRODUCT INFORMATION

Chemical Base	Epoxy resin	
Packaging	10 kg (A+B)	Pre-batched unit
		pallets of 480 kg (48 x 10 kg)
Shelf Life	24 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.	

Colour	Component A: white Component B: dark grey Component C: sand Components A+B+C mixed: concrete grey
Density	2.01 ± 0.1 kg/l (Components A+B+C mixed) (at +21 °C)

TECHNICAL INFORMATION

Compressive Strength (DIN EN 196)

Curing time	Curing temperature	
	+5 °C	+20 °C
1 day	~44 N/mm²	~79 N/mm²
3 days	~58 N/mm²	~86 N/mm²
7 days	~78 N/mm²	~91 N/mm²

Modulus of Elasticity in Compression ~12 000 N/mm² (14 days at +20 °C) (ASTM D 695-95)

Flexural Strength (DIN EN 196)

Curing time	Curing temperature	
	+5 °C	+20 °C
1 day	~15 N/mm²	~27N/mm²
3 days	~25 N/mm²	~30 N/mm²
7 days	~28 N/mm²	~32 N/mm²

Tensile Strength (ISO 527)

Curing time	Curing temperature	
	+5 °C	+20 °C
1 day	~12 N/mm²	~17 N/mm²
3 days	~13 N/mm²	~18 N/mm²
7 days	~15 N/mm²	~19 N/mm²

Tensile Modulus of Elasticity ~6 000 N/mm² (14 days at +20 °C) (ISO 527)

Elongation at Break 0.2 ± 0.1 % (7 days at +20 °C) (ISO 527)

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

Curing time	Substrate	Curing temperature	Adhesion strength
7 days	Concrete dry	+10 °C	> 4 N/mm² *
7 days	Concrete moist	+10 °C	> 4 N/mm² *
7 days	Steel	+10 °C	~12 N/mm²
7 days	Steel	+23 °C	~13 N/mm²

*100% concrete failure

Shrinkage Hardens without shrinkage.

Coefficient of Thermal Expansion 3.0×10^{-5} per °C (Temperature range +23 °C to +60 °C) (EN 1770)

Heat deflection temperature (ISO 75)

Curing time	Curing temperature	HDT
7 days	+20 °C	+47 °C

(thickness 10 mm)

APPLICATION INFORMATION

Mixing Ratio	Component A : B : C = 2 : 1 : 2.5 by weight Component A : B : C = 2 : 1 : 3.4 by volume
Consumption	The consumption of Sikadur®-41 CF Rapid is ~ 2.0 kg/m² per mm of thickness.
Layer Thickness	60 mm maximum per layer. Multiple layers can be used to achieve required final thickness. Wait for each previous layer to harden and cool before applying next layer.
Sag Flow	On vertical surfaces it is non-sag up to 20 mm thickness. (EN 1799)

Product Temperature	Sikadur®-41 CF Rapid must be applied at temperatures between +5 °C and +20 °C.
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 matt damp (no standing water). Brush the adhesive well into the substrate.
Pot Life	(EN ISO 9514)

Temperature	Pot-life*	Open time
+5 °C	~ 75 minutes	--
+10 °C	~ 63 minutes	--
+20 °C	~ 40 minutes	~ 45 minutes

*200 g
The pot-life 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 pot-life. To obtain longer workability at high temperatures, the mixed adhesive may be divided into portions. Another method is to chill components A+B and C before mixing them (although 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.

LIMITATIONS

Sikadur® resins are formulated to have low creep under permanent loading. However due to the creep behaviour of all polymer materials under load, 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.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Mortar and concrete must be older than 28 days (depending on minimum strength requirements).
Verify the substrate strength (concrete, masonry, natural stone).
The substrate surface (all types) must be clean, dry or matt 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 matt 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 (e.g. by blast-cleaning and vacuuming). Avoid dew point conditions.

MIXING

Pre-batched units:
Mix components A+B together for at least 3 minutes with a mixing spindle attached to a slow speed electric drill (maximum 300 rpm) until the material becomes smooth in consistency and a uniform colour. Then add component C and continue until mixture is homogeneous. Avoid aeration while mixing. Then, pour the whole mix into a clean container and stir again for ~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

Brush the adhesive well into the substrate. Sikadur®-31 CF can be used as primer to improve the bond.
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 ambient 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.

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.

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.

SIKA LIMITED
Watchmead
Welwyn Garden City
Hertfordshire, AL7 1BQ
Tel: 01707 394444
Web: www.sika.co.uk
Twitter: @SikaLimited