

PRODUCT DATA SHEET

Sikadur[®]-53 UF Grout

Moisture insensitive flowable high early strength epoxy resin grout

DESCRIPTION

Sikadur[®]-53 UF Grout is a 3-part high performance, high early strength, solvent free, moisture tolerant pourable epoxy grout. It has good flowability, low shrinkage, good mechanical strengths and is suitable for many static or dynamic precision grouting applications. Also suitable as a flowable concrete repair material.

Specially designed for grouting in under water / wet conditions. When it is poured into the cavity, it displaces the water and cures to a rigid high strength material.

USES

Sikadur[®]-53 UF Grout may only be used by experienced professionals.

High strength grouting and fixing of:

- Starter bars
- Anchors
- Fasteners
- Tie rods
- Crash barrier posts
- Fence and railing posts

Under-grouting and bedding of:

- Precision seating of base plates
- Machine bases, seat base plates for light and heavy machinery including heavy impact and vibratory machinery, reciprocating engines, compressors, pumps, presses, etc.
- Bridge bearings
- Mechanical joints (i.e. road, bridge, deck etc.)
- Crane rails
- Ballast less rail tracks

Concrete repairs:

- Spalled concrete structures
- Industrial floors
- Holes and voids
- Runways and hardstanding's
- Car park decks
- Under water applications in dams and hydraulic structures

CHARACTERISTICS / ADVANTAGES

- Suitable for dry, damp, wet and underwater conditions
- High early strength
- Shrinkage free hardening
- Seals against moisture and oxygen
- Good adhesion to concrete, masonry, stone and steel substrates
- Good adhesion to salt-water immersed, cementitious substrates
- High density ensures good water displacement
- Good mechanical underwater strengths
- Easy to apply
- Free flowing

PRODUCT INFORMATION

Chemical base

Epoxy resin and selected fillers and aggregates

Packaging	Part A+B+C pre-batched	11 kg set
	Part A	2 kg container
	Part B	1 kg container
	Part C	8 kg bag
Shelf life	12 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 +40 °C. Protect from direct sunlight.	
Appearance / Colour	Concrete grey flowable mortar	

TECHNICAL INFORMATION

Compressive strength	Curing time	Compressive strength	(ASTM C579)
	3 h	≥ 20 N/mm ²	
	6 h	≥ 40 N/mm ²	
	1 d	≥ 60 N/mm ²	
	7 d	≥ 80 N/mm ²	
Test specimens cured at +30 °C under water			
Tensile adhesion strength	> 10 N/mm ²		(ASTM C882)
Test specimens cured at +30 °C under water			

APPLICATION INFORMATION

Mixing ratio	Part A : Part B : Part C = 2 : 1 : 8 (by weight)		
Fresh mortar density	1.9 ± 0.1 kg/L (Part A+B+C mixed, +27 °C)		(EN ISO 2811-1)
Layer thickness	Maximum	50 mm per layer	
	Minimum	10 mm	
Additional layer thickness can be applied in successive layers once each layer has cooled and hardened sufficiently. The last layer of a multiple pour must be at least 50 mm.			
Product temperature	Condition the material between +10 °C and +30 °C for 48 hours before use.		
Ambient air temperature	+10 °C min. / +40 °C max.		
Dew point	Beware of condensation. The substrate and uncured applied product must be at least +3 °C above dew point to reduce the risk of condensation.		
Substrate temperature	+10 °C min. / +40 °C max.		
Pot life	> 20 minutes (100 g mass, +30 °C)		(FIP 5.1)
Pot life begins when all parts have been 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, chill parts A+B before mixing (i.e. only when application temperatures are above +20 °C).			

BASIS OF PRODUCT DATA

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.

FURTHER DOCUMENTS

Sika Method Statement: Epoxy Resin Grouts

IMPORTANT CONSIDERATIONS

- Cold ambient, substrate or material temperatures will reduce the curing and flow characteristics.
- Do not subject Sikadur®-53 UF Grout to sudden temperature changes during early curing stages.
- 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. A structural engineer must be consulted for design calculations.

- Do not add solvents. Solvents will prevent proper curing and change the mechanical properties.
- Sikadur®-53 UF Grout is a vapour barrier when cured.

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

Concrete

- Concrete must be at least 3–6 weeks old and of sufficient strength.
- Substrate surfaces must be sound, clean, dry, wet or damp, free from ice, dirt, oil, grease, coatings, laitance, efflorescence, old surface treatments, all loose particles and any other surface contaminants that could affect adhesion.

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

SUBSTRATE PREPARATION

Concrete

- Substrate must be prepared by suitable mechanical preparation i.e. very high pressure water blasting, needle gun, scabblor or bush hammer to achieve a laitance and contaminant free, open textured surface.
- Any pockets or holes for structural fixings must also be cleaned of all debris.
- All anchor pockets or sleeves must be free of water.
- All dust and loose material must be completely removed from all substrate surfaces before application of the product by vacuum / dust removal equipment.

Steel

- Substrate must be prepared by suitable mechanical preparation i.e. abrasive blast cleaning techniques or high pressure water blasting, angle grinder or chisel to achieve a bright finish or to a standard equivalent to SA 2.5. Avoid dew point conditions.
- When grouting areas or equipment that is sensitive to vibration, it is recommended the contact surfaces are prepared according to the advice of Sika Technical Services or engineer-in-charge.
- All dust and loose material must be completely removed from all substrate surfaces before application of the product by vacuum / dust removal equipment.

Shutter Formwork

- The consistency of the Sikadur®-53 UF Grout epoxy grout system requires the use of permanent or temporary forms to contain the material around base plates. All formwork must be of adequate strength, treated with release agent and sealed to prevent leakage.
- Prepare the formwork to maintain a minimum 100 mm grout head to assist with placement. A grout box equipped with an inclined trough attached to the formwork will also improve the grout flow and reduce air voids.

MIXING

1. Mix parts A and B in the part A container for ~60 seconds with a low speed (< 400 rpm) electric hand held paddle mixer until a uniformly blended colour and viscosity has been achieved.
2. During the mixing operation, scrape down the sides and bottom of the mixing pail with a flat or straight edge trowel at least once, to ensure complete mixing of parts A and B. Avoid air entrainment while mixing.
3. Place the mixed epoxy resin into a clean container.
4. Slowly add the contents of part C and continue mixing for at least 3 minutes until a uniformly coloured consistent mix has been achieved. Over mixing must be avoided to minimise air entrainment. Mix full units only. Mixing time for A+B+C = 4 minutes.
5. After mixing, allow material to remain in the mixing container until the majority of entrained air bubbles have disappeared.

Note: Mix only the quantity which can be used within its pot life.

Note: Always mix part A and B by adding part C (this prevents an exothermic reaction between A and B which generates excess heat).

APPLICATION METHOD / TOOLS

Reference must be made to further documentation where applicable, such as relevant method statement, application manual and installation or working instructions.

Grouting

1. Immediately after mixing, pour the mixed grout into the prepared formwork from one or two sides only ensuring a continuous flow and maintaining a 100 mm grout head to prevent air voids.
 - Where formwork has been used for grouting base plates, machine bases and seat base plates, place sufficient epoxy grout in the formwork to rise slightly above the underside (3 mm) of the grouted base.
 - The minimum void depth beneath the baseplate shall be 12 mm. Where the void beneath the base plate is greater than 50 mm, place the epoxy grout in successive 50 mm lifts or less, pour only once the preceding lift has cooled. Minimum layer thickness for last pour shall be 50 mm.

Important: For specific bolt grouting applications please refer to Sika Technical Services.

Important: For control joint spacing on large base plate grouting projects please refer to Sika Technical Services.

Flowable repair

1. Immediately after mixing, pour the mixed material into the formwork or repair area ensuring a continuous flow.

CLEANING OF TOOLS

Clean all tools and application equipment with Sika® Colma Cleaner 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 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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Product Data Sheet

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