

PRODUCT DATA SHEET

Sikadur[®]-42 HF

Very High Flow, Water Displacing, Cost Effective Epoxy Resin Grout

DESCRIPTION

Sikadur[®]-42 HF is a pourable, multi-functional high density epoxy grout based on a 2-component solvent free epoxy resin system containing fine fillers. Sikadur[®]-42 HF exhibits excellent insolubility and displacement characteristics in wet and underwater applications but useable in dry general grouting applications also.

USES

Sikadur[®]-42 HF may only be used by experienced professionals.

As a grout for manufacturing plants and civil engineering application:

- Crane rails
- Machine bedding and baseplates
- Holding down bolts
- Stanchions
- Starter bars
- Cavity filling
- Bridge bearings

Sikadur[®]-42 HF may be used for underwater work and offers excellent adhesion to both dry and clean water immersed concrete, stone masonry, brick, wood or steel surfaces. Highly insoluble in water and safe for specialist diver use. Used for injection of cracks 0.5mm to 40mm wide under water (cracks not conducting a water flow under pressure). Ideal for pile jacketing using prepacked aggregate in formwork. Mixed with 30% by volume sand a high build grout is formed that is easy to apply under water. May also be used as a bonding bridge for underwater concreting and as a pipeline jointing material.

PRODUCT INFORMATION

Packaging	18 kg net pre-proportioned kit
Shelf life	24 months from date of production

FEATURES

- Cost effective epoxy grout.
- Suitable for dry, wet, underwater or marine applications.
- Highly insoluble in water and suitable for application by specialist divers.
- Applicable at low temperatures.
- High mechanical strengths.
- High flow characteristics.
- Supplied in factory proportioned units.
- Shrink free.
- Can be bulked out with aggregate of thicker pour applications.
- Excellent chemical resistance to water, sea water, waste water.

CERTIFICATES AND TEST REPORTS

- CE Marking and Declaration of Performance to EN 1504-4 - Structural bonding
- CE Marking and Declaration of Performance to EN 1504-5 - Concrete Injection
- CE Marking and Declaration of Performance to EN 1504-6 - Anchoring of reinforcing steel bar
- ASTM D3755-20 Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials Under Direct-Voltage Stress

Storage conditions	Stored properly in original and unopened, sealed and undamaged packaging, in dry conditions at temperatures between +5 °C and +30 °C. Protect from direct sun light.		
Density	2.0 kg / litre approx.		
Viscosity	2,500 to 3,000 mPa.s approx. (+23°C) <i>Note: 1 mPa.s = 1 centipoise (cps)</i>		
Shore D Hardness	81 approx. (10 days at +20 °C)		
Compressive strength	24 hrs	~ 50 MPa	(AS 1478.2:2005)
	7 days	~ 88 MPa	
	14 days	~ 90 MPa	
	<i>Test specimen cured and tested at +23 °C / 50% r.h. and 50mm cube size.</i>		
Modulus of elasticity in compression	Dynamic 7,800 MPa approx. Static 6,300 MPa approx. (14 days at 20°C)		
Flexural-strength	~ 35 MPa (14 days)		(ASTM C 348)
Tensile strength	~ 25 MPa (+20 °C approx.)		(DIN 42 HF455)
Tensile adhesion strength	10 to 13 MPa (on steel) 2.5 to 3.5 MPa (concrete failure)		(EN 1542)
Coefficient of thermal expansion	~ 7.5 × 10 ⁻⁵ 1/K (Temp. range -20 °C – +60 °C)		(EN 1770)
Electrical resistivity	Dielectric Breakdown Voltage & Strength > 30.0 kV/mm		(ASTM D3755-20)

APPLICATION INFORMATION

Mixing ratio	A : B = 8 : 1 by weight A : B = 3.6 : 1 by volume
Consumption	2.0 kg/m ² approx. per mm thickness
Yield	18 kg kit yields approximately 9 litres of grout
Layer thickness	0.50 mm min. / 40 mm max.
Ambient air temperature	5 °C min. / 35 °C max.
Pot Life	50 minutes approx. @ 20 °C for 1.8 kg mix 35 minutes approx. @ 20 °C for 18 kg mix (The temperature at which the Sikadur-42 HF is stored during the 24 hours before it is mixed will govern its potlife when mixed).
Curing time	24 hours (+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.

IMPORTANT CONSIDERATIONS

- Do not part mix kits.
- Only mix as many kits as can be applied within the stated potlife.
- Do not dilute the product with solvent as this will affect both the cure and in-service performance of the product.
- Minimum thickness 0.5mm, maximum thickness 40mm.
- The temperature at which the Sikadur®-42 HF is stored during the 24 hours before it is mixed will govern its potlife when mixed.
- Minimum age of new concrete, 4 to 6 weeks.
- Sikadur®-42 HF will rise in temperature when mixing. The extent of this temperature rise will depend upon the volume to surface ratio and the ambient and substrate temperature.
- Refer to the Sikadur 42 Method statement for guidance in correct methods for epoxy grouting applications.
- Do not apply under water at depths greater than 5m without referral to our Technical Department.

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 containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Mortar and concrete must be older than 28 days (dependent on minimum strength requirements). Verify the substrate strength (concrete, natural stone etc.). 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 to a standard equivalent to Sa 2.5.

The substrate must be sound and all loose particles must be removed. Substrate must be dry or mat damp and free from any standing water, ice etc.

SUBSTRATE PREPARATION

Surface and base plate contact area must be clean and sound. For best results, the substrate should be dry. Remove dust, laitance, oils, grease, curing compounds, impregnations, waxes, foreign particles, coatings, and disintegrated materials by mechanical means, i.e. chipping

with a chisel, blastcleaning etc. All anchor pockets or sleeves must be free of water. Blastcleaning metal base plates to an acceptable quality standard equivalent to SA 2.5 for maximum adhesion. Apply grout immediately to prevent re-oxidizing.

Forming:

The consistency of the Sikadur®-42 HF epoxy grout system requires the use of permanent or temporary forms to contain the material around base plates, for example. In order to prevent leakage or seepage, all of these formers must be sealed. Apply polyethylene film or wax to all forms to prevent adhesion of the grout. Prepare the formwork to maintain more than 100 mm liquid head to facilitate placement. A grout box equipped with an inclined trough attached to the form will enhance the grout flow and minimize air encapsulation.

MIXING

Prior to mixing the components should be stored at 15-20°C for the previous 24 hours. Mix all of component A (Grey Resin) with all of component B (Hardener) using a slow speed drill (maximum 600 rpm) and windmill stirrer. Mix until a homogeneous and streak free mixture results.

If placing underwater allow to stand for 10-15 minutes after mixing before placing.

APPLICATION METHOD / TOOLS

Mixed Sikadur®-42 HF should be poured into the void or formwork from one side to avoid the entrapment of

air. Continuous grout flow is essential and there must be sufficient grout available before pouring.

Machine Base Plates & Crane Rails: An adequate head must be maintained to ensure continuous flow. Continue pouring until the grout rises above the level of the plate. At no time during application should the grout head be less than 50 mm above the level of the plate. This, as well as adequate vent holes, is essential to ensure no air is trapped.

Anchor Bolts and Dowels: For bolts placed into pre-formed holes, fill the hole with Sikadur®-42 HF and place into the grout.

Higher strengths achieved if placed using a tremmie placing technique rather than free fall through water. When using Sikadur®-42 HF as a bonding bridge the material may be applied by brush or gloved hand. Ensure an even continuous film. Place fresh concrete immediately.

If injecting cracks, pressure equipment may be used (eg. liquid tight bulk sealant gun; hand pumped grease filling equipment and high pressure pumping equipment may also be used).

Large voids may be filled by pre-filling with clean aggregate.

Where possible use coarse rounded river gravel not smaller than 8mm and pouring or injecting/ tremmieing Sikadur®-42 HF into the void, displacing the water (i.e. preplaced aggregate technique).

CLEANING OF EQUIPMENT

Sweep excess grout into appropriate containers for disposal before it has hardened. Dispose of in accordance with applicable local regulations. Uncured material can be removed with Sika Colma Cleaner. Cured material can only be removed mechanically.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product 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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