

Product Data Sheet
Edition 08/08/2007
Identification no:
02 04 02 01 001 0 000000
Sikadur®-53 (UF)

Sikadur®-53 (UF)

Moisture insensitive injection resin

Product Description

Sikadur®-53 (UF) is a solvent-free, two part, moisture intensive liquid, based on epoxy resin.

Uses

- Sikadur®-53 (UF) is used as an injectable resin to seal damp, wet and submerged cracks by high pressure injection
- For adhesion of concrete and steel in damp and wet condition (by water displacement)

Characteristics / Advantages

- Cures without shrinkage
- High resistance to a wide range of aggressive chemicals
- Excellent adhesion to salt-water immersed, cement bound substrates
- High density ensures complete water displacement
- High mechanical strengths even after hardening under water

Product Data

Form

Colours

Part A: colourless
Part B: reddish brown
Part A+B mixed: reddish brown

Packaging

3 kg (A+B) Prebatched unit
Part A: 2.00 kg plastic container
Part B: 1.00 kg plastic container

Storage

Storage Conditions / Shelf-Life

12 months from date of production if stored properly in original unopened, sealed and undamaged packaging in dry conditions at temperatures between +5°C and +40°C. Protect from direct sun light.

Technical Data

Chemical Base

Epoxy resin.

Mixed Density

~ 1.1 kg/l (at +27°C)

Viscosity

Part A+B: ~ 500 mPa . s (at +30°C)

Construction



Mechanical / Physical Properties

Compressive Strength	Grouted and cured under water:	(According to ASTM C 579 & IS 9162- 79)
	Curing time	+30°C
	1 day	~ 40 N/mm ²
	3 days	~ 60 N/mm ²
	7 days	~ 70 N/mm ²
	14 days	~ 75 N/mm ²
Test specimen size: 50 * 50 * 50 mm		
Bond Strength	Grouted and cured under water	(According to ASTM C 882)
	Curing time	+30°C
	14 days	1.5 N/mm ²
*Concrete failure		
Strength Development	Confirm the strength development by producing cubes on site and testing them for compressive and flexural strength.	

System Information


Application Details

Substrate Quality	Concrete, mortar, stone, bricks: Substrates must be sound, clean and free from laitance, 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.
Substrate Preparation	Mortar and concrete must be older than 28 days (depends on minimal requirement of strengths). Verify the substrate strength (concrete, masonry, natural stone). Steel substrates must be de-rusted similar to Sa 2.5. The concrete substrate must be sound and all loose particles must be removed.

Application Conditions / Limitations

Substrate Temperature	+5°C min. / +40°C max.
Ambient Temperature	+5°C min. / +40°C max.
Material Temperature	Sikadur [®] -53 (UF) must be at a temperature of between +10°C and +40°C.

Application Instructions

Mixing	Part A : Part B = 2 : 1 (by weight)
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. 400 rpm) until the material becomes smooth in consistency and a uniform green 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	<p>Successful application depends on very careful preparation. The surface to be treated must be structurally sound, free from standing water, oil, grease, surface contaminants. Dirt, dust and other foreign materials must be removed. Concrete which is fully contaminated with oil / grease, must be removed to the depth of sound & uncontaminated concrete.</p> <p>Impregnation of cracks on horizontal slabs: Impregnation is applied with a paint brush or roller until complete saturation of the substrate is achieved. Cracks are sealed by pouring mixed Sikadur[®]-53 (UF)/ Sikadur[®]-53(FLV) directly from the mixing vessel between two “dams” made from Sikaflex[®] sealant. Crack penetrating slabs to their soffit should first be sealed on the underside with Sikadur[®]-31 epoxy mortar or a suitable cementitious Sika mortar</p> <p>Injection of cracks on horizontal / vertical slabs: Injection flange / nipples are fixed along the crack line at an approximately 25 cm center-to-center distance with Sikadur[®]-31. Crack mouth should be opened and sealed with Sikadur[®]-31. Crack penetrating slabs to their soffit should also be sealed on the underside with Sikadur[®]-31 epoxy mortar or a suitable cementitious Sika mortar. Mixed Sikadur[®]-53 (UF) can be injected under pressure through injection ports using injection pump, such as Aliva AL-1200, AL-1250 or the Sika[®] Hand Pump. As soon as injection resin oozes out of the next injection port, the first one is sealed and injection process is continued from next port.</p> <p>For underwater slab, use of Sikagard[®]-694F(I) is recommended instead of Sikadur[®]-31. Also, after mixing Part A & Part B, a waiting time of 15 minutes need to be observed in order to allow the mixture to pre-react for optimal adhesion under water.</p> <p>For horizontal crack, injection should start from any of the ends and to be continued and completed till the last port is used. For vertical crack, injection should start from the lowest port and continued upwards</p>		
Cleaning of Tools	Clean all tools and application equipment with Sika [®] Colma Cleaner immediately after use. Hardened / cured material can only be mechanically removed.		
Potlife	<p>100 g mass (According to FIP 5.1)</p> <table border="1" data-bbox="622 1064 1516 1108"> <tr> <td data-bbox="622 1064 1069 1108">+30°C</td> <td data-bbox="1069 1064 1516 1108">~ 15 minutes</td> </tr> </table> <p>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).</p>	+30°C	~ 15 minutes
+30°C	~ 15 minutes		
Notes on Application / Limitations	<p>Maximum width of cracks to be injected: 5 mm.</p> <p>Sikadur[®]-53 (UF) is suitable for dry and damp and submerged conditions.</p>		
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.		
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.		
Legal Notes	<p>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.</p>		

