

PRODUCT DATA SHEET

Sikadur[®]-53 (FLV)

MOISTURE INSENSITIVE INJECTION RESIN FOR SEALING CRACKS > 5 MM

DESCRIPTION

Sikadur[®]-53 (FLV) is a solvent-free, two part, moisture intensive injection resin, based on epoxy resin containing special fillers for sealing cracks in dry, damp, wet or underwater conditions.

USES

Sikadur[®]-53 (FLV) may only be used by experienced professionals.

- Sikadur[®]-53 (FLV) is used as an injectable resin to seal damp and wet and submerged cracks by high pressure injection (the width of the cracks must be > 5 mm due to the special fillers)
- For adhesion of concrete and steel in damp and wet condition (by water displacement)

CHARACTERISTICS / ADVANTAGES

- Suitable for dry, damp, wet and underwater conditions
- Cures without shrinkage
- High resistance to a wide range of aggressive chemicals
- Excellent adhesion to concrete, masonry, stone and steel substrates
- Excellent adhesion to salt-water immersed, cement bound substrates
- High density ensures complete water displacement
- High mechanical strengths even after hardening under water
- Injectable with single component pumps

PRODUCT INFORMATION

Chemical Base	Epoxy Resin	
Packaging	Part A+B Pre-batched unit	5 kg x 2 sets
	Part A	4.00 kg plastic container
	Part B	1.00 kg plastic container
Colour	Part A	Green
	Part B	Reddish Yellow
	Part A+B Mixed	Reddish Brown
Shelf Life	12 months from date of production	
Storage Conditions	Store properly in original unopened, sealed and undamaged packaging in dry conditions at temperatures between +5°C and +40°C. Protect from direct sun light.	
Density	Part A	~ 1.7 kg/L
	Part B	~ 1.0 kg/L
	Part A+B mixed	~ 1.6 kg/L
All density values at +27°C		
Viscosity	~ 900 Cps (Part A+B) (at +30°C)	

TECHNICAL INFORMATION

Compressive Strength	<u>1 day</u>	<u>≥ 35 N/mm²</u>	(ASTM C579)
	<u>3 days</u>	<u>≥ 50 N/mm²</u>	
	<u>7 days</u>	<u>≥ 65 N/mm²</u>	
	<u>14 days</u>	<u>≥ 70 N/mm²</u>	
	At +30°C (Casted and cured under water)		
	Test specimen size : 50 x 50 x 50 mm		
Tensile Adhesion Strength	≥ 10 N/mm ² (after 14 days at +30°C, concrete failure)		(ASTM C882)
	Grouted and cured under water		

APPLICATION INFORMATION

Mixing Ratio	Part A : Part B = 4 : 1 (by weight)
Product Temperature	+10°C min / +40°C max.
Ambient Air Temperature	+5°C min. / +40°C max.
Substrate Temperature	+5°C min. / +40°C max.
Pot Life	~18 minutes (100g mass at +30°C) (FIP 5.1)
	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).

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Concrete / masonry / mortar / stone

Concrete and mortar must be at least 28 days old.

Verify the substrate strength to ensure design strengths are achieved.

Substrate surfaces can be dry, damp, wet or underwater, must be stable, clean, 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.

Crack

Cracks must be clean and either dry, damp, wet or underwater.

SUBSTRATE PREPARATION

Concrete / masonry / mortar / stone

Substrates must be prepared mechanically using suitable abrasive blast cleaning, needle gunning, light scabbling, bush hammering, grinding or other suitable equipment to achieve an open textured gripping surface profile.

Steel

Surfaces must be prepared mechanically using suitable

abrasive blast cleaning, grinding, rotating wire brush or other suitable equipment to achieve a bright metal finish with a surface profile to satisfy the necessary tensile adhesion strength requirement. Avoid dew point conditions before and during application.

Crack

Open all cracks into V grooves and seal them with appropriate rigid sealant from Sikadur® range according to site condition or type of sealing treatment required.

MIXING

Prior to mixing all parts, mix Part A (resin) briefly using a mixing spindle attached to a slow speed electric mixer (max. 400 rpm). Add Part B (hardener) to part A and mix Parts A+B continuously for at least 3 minutes until a uniformly coloured smooth consistency mix has been achieved. To ensure thorough mixing pour materials into a clean container and mix again for approximately 1 minute. Over mixing must be avoided to minimise air entrainment. Mix full units only. Mixing time for A+B = 4 minutes. Mix only the quantity which can be used within its pot life.

APPLICATION METHOD / TOOLS

Strictly follow installation procedures as defined in method statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

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 (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.

Injection of cracks on horizontal / vertical slabs:

Injection ports / packers 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 (FLV) can be injected under pressure through injection ports using suitable injection pumps. 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. 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.

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.

CLEANING OF TOOLS

Clean all tools and application equipment with Sika® Colma Cleaner immediately after use. Hardened / cured material can only be mechanically removed.

FURTHER DOCUMENTS

- For cracks to be injected > 5mm, use Sikadur®-53 (FLV). For cracks to be injected < 5 mm, use Sikadur®-53 UF.
- Sikadur®-53 (FLV) is suitable for dry, damp and submerged conditions.

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.

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.

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 (SDS) containing physical, ecological, toxicological and other safety-related 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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