

Sikadur®-52 MY

Low Viscosity Epoxy Crack Injection Resin

Description

Sikadur-52 is a 2-component, solvent free, low viscosity injection liquid based on high strength epoxy resins. It is free flowing, fast curing and after mixing, Sikadur-52 can be injected into cavities and cracks in concrete under dry, damp or wet conditions (no standing water).

Cured Sikadur-52 possesses high mechanical strengths, excellent adhesion, non-shrink properties and a chemical resistance typical of all epoxy resins. Cracks as small as 0.2 mm in width have been successfully sealed with Sikadur-52 and although it has very high strengths, the cured material is not brittle and retains a very slight flexible nature.

Uses

As an injection adhesive for:

- Concrete and stone
- Mortar
- Steel and iron
- Wood

Rigid connection of cracks between parts of:

- Bridges
- Industrial constructions
- Columns
- Prefabricated elements

Pouring and pressure injection into:

- Static cracks
- Static thin joints
- Small cavities

Corrosion protection of reinforcement in cracked concrete

Advantages

- Non-flammable
- Solvent free
- Applicable to moist concrete substrates
- Good penetration into cement bound surfaces
- Shrinkage free hardening
- Applicable also at low temperatures
- High mechanical and adhesive strengths
- Hard but not brittle
- Easy mixing, convenient mixing ratio



Product Data

Appearance Yellowish / Transparent Liquid

Pot-Life (2 kg)	At 20°C	At 30°C	At 40°C
	60 minutes	30 minutes	15 minutes

Shelf Life & Storage 12 months from the date of production when stored in its original unopened containers in a cool, dry place

Packaging 2 kg and 15 kg sets

Technical Data

Specific Gravity 1.1

Viscosity

- 290 cps at 20°C
- 130 cps at 30°C

Compressive Strength > 90 N/mm² at 7 days

Adhesive Strength (20°C, 65 % r.h.)

After 10 days:

- On concrete 3.5 N/mm² (concrete failure)
- On steel 15.0 N/mm² (steel sandblasted)

Tensile Strength 25 N/mm²

Instructions For Use

Materials And Tools

Electric drill (low speed) with paddle of a maximum diameter of 5 cm and drill bits for effecting the placing of injection pipes.

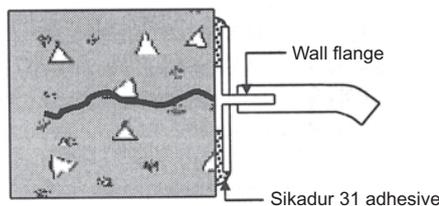
Approximately 5 cm long narrow gauge pipes of copper, aluminium, brass or any other soft metal. Tubes with which to connect the injection pipes and injection flanges (if required). Binding wire for fixing of the tubes. Suitable injection device with compressed air vessel and corresponding pipes. For simple and straightforward cases the use of empty cartridges and handguns is very effective or Sika solid barrel type mastic gun. Normally, maximum pressure required is 25 - 30 psi.

Sikadur-31 adhesive is recommended for sealing of pipes and cracks.

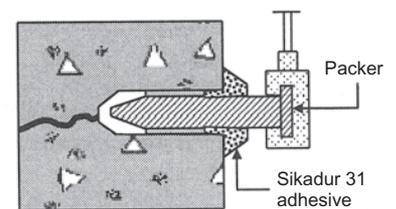
Preparatory Work

The successful application depends on very careful preparation. The surface to be treated must be structurally sound, free from standing water, oil, grease and surface contaminants.

In cases where the crack deviates from the direction of the hole being drilled or where cracks are so fine that they could easily be blocked with dust resulting from the drilling operation, it is preferable to abstain from placing a tube but to replace it with a flanged fitting. The fitting is fixed above the crack width and is effectively sealed with Sikadur-31 adhesive.



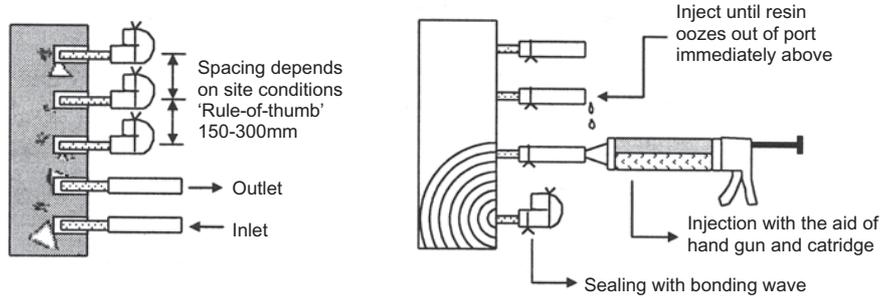
Surface mounted injection port



Drilled-in injection port

Mix Ratio	Components A : B 2:1 parts by weight / volume
Mixing	The temperature of the components before mixing should be between 10 and 20°C. The hardener (component B) is added in its entirety to the tin containing the resin (component A). Mix for 3 minutes using a low speed drill (less than 500 rpm).

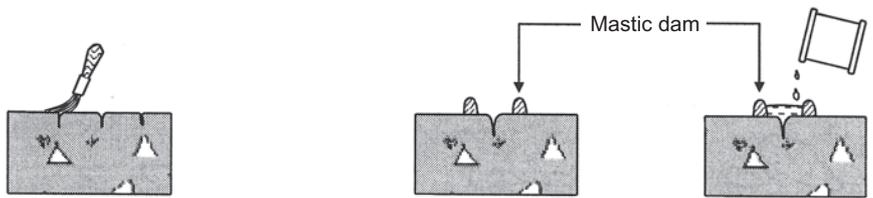
Application Start from the bottom to the top and make sure that the prepared injection system is interconnected and open.



Injection Of Vertical Cracks

The resin-hardener mixture is connected with a tube to the lowest injection port. Slow and even pressure is applied until such time as the resin oozes out of the port immediately above the one being used and in the case of walls, until such time as it can be visibly checked on prepared control points.

The port is immediately bent and sealed with a length of binding wire. The same process is repeated, starting from the next injection port. In order to make sure that the resin flows correctly into the cracks and that it does not leave the structure at another spot, the volume of injected material must be continuously checked during the injection process.



Impregnation

Crack sealing

Impregnation Of Fine 'Crazing Cracks'

Where injection or sealing of multiple very fine cracks or crazing is not feasible, cracks may be impregnated by saturating the concrete surface with Sikadur-52.

Sealing Of Floor Cracks

Wide floor cracks (> 0.5 mm) may be sealed by forming a mastic/sealant dam around the crack and filling the dam with Sikadur-52, allowing it to penetrate into the crack.

Limitations	<ul style="list-style-type: none"> ■ Minimum admissible substrate temperature is 20°C ■ Maximum admissible substrate temperature is 40°C ■ Minimum crack width is ~ 0.2 mm ■ Maximum crack width is 5.0 mm ■ Minimum age of the new concrete depending upon climate is 3 – 6 weeks ■ Do not thin Sikadur-52. Solvents may prevent proper cure
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Important Notes

- Sikadur-52 is a highly reactive mixture with a relatively short pot-life. The reaction develops heat and if this heat is not allowed to escape, a considerable increase of the mixture temperature is created. This results in an additionally reduced pot-life for quantities of more than 1 kg. It is therefore important to make sure that the prepared Sikadur-52 mixture can be rapidly injected into the crack and that it is never prepared in large quantities. The width of the crack should not exceed 5 mm.
- During hot weather applications, it may be necessary to pre-cool the components (for example in a cool box used for picnic storage - temperature 10°C), but care must be taken to protect both components A and B from becoming wet.
- The consumption of material depends entirely on the prevailing conditions. It is recommended that careful estimation of consumption be made prior to the execution of the work and to also make certain that sufficient material is kept in reserve. When injecting load bearing cracks in reinforced concrete structures, care must be taken to eliminate the load causing the cracks otherwise another crack in a different area of the concrete may appear.
- Injection with synthetic resin compounds requires experienced specialists and trained workers. For important projects and in difficult cases, please consult our Technical Services Department.
- For wet or underwater crack injection, use Sikadur-53.

Curing

- Initial ~ 24 hours at 20°C
- Final ~ 3 – 5 days at normal temperatures

Cleaning

Clean all tools and equipment with Sikadur Cleaner before the resin has cured. Cured injection material can only be removed mechanically.

Remove pipes with chisel or cutter only after Sikadur-52 has completely cured. Sikadur-31 adhesive can easily be removed and smoothed with a grinding disc.

Safety Precautions

Wear gloves and goggles during application. If in contact with skin, wash thoroughly with soap and water. If in contact with eyes or mucous membrane, flush immediately with plenty of water and seek medical attention without delay. Use with adequate ventilation.

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual data may vary due to changing conditions beyond our control.

For more information, refer to our Material Safety Data Sheet (available upon request).

"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 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 proprietary rights of third parties must be observed. All orders are acceptable subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request."



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