

AKSID
CONSULTANCY



CONCRETE INJECTION SOLUTION



AKSID
BUILDING THE NATION





AKSID ENGINEERING DEPARTMENT

AKSID Corporation Limited, an industry leader in construction, is headquartered in Dhaka, Bangladesh and has been developing the construction sector for over 10 years. Our adaptable, professional teams bring added value to our clients' businesses through our expertise and knowledge.

Highlights:

200+ Employees.

Country Distributor of Sika, World's Largest Construction Chemical Company.

Handling Infrastructure and Mega Projects all over Bangladesh.

Clients include Japanese, Thai, Russian, Korean and the largest groups of companies of Bangladesh.

AKSID provides construction solutions and services to all types - large scale infrastructure to industrial developments to local level construction at site. We have professional skilled manpower, tools, and solutions to help all levels of construction all over Bangladesh.

AKSID is the Country Distributor of Sika, a Switzerland based construction chemical company and the largest manufacturer of construction chemicals. Sika is world renowned and has been producing construction solutions since 1912. Through a successful partnership through Sika, AKSID has grown to be the largest supplier of construction chemicals in the entire country.

OUR VALUABLE CLIENTS



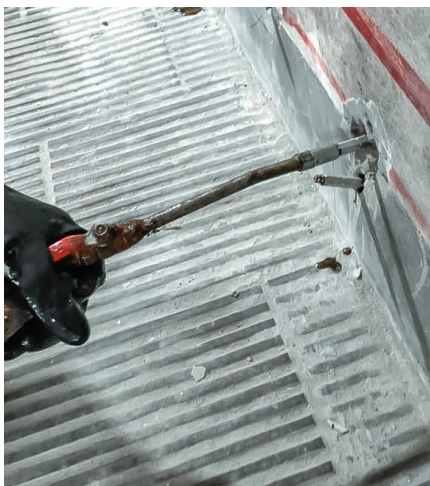


What Is Concrete Injection

Injection is a procedure of pumping cement based, polyurethane based, epoxy based or acrylate based material into damaged or cracked structures to securely seal leaks, repair compromised structures and make them watertight again for the long term.

Benefits of Concrete Injection

- ▲ Help avoid expensive costs of structural repairs and reduce operational downtime.
- ▲ Can be used for all types of leak-sealing applications in concrete, masonry and natural stone structures.
- ▲ Are able to form a new permanent watertight seal.
- ▲ Can be used at any time, including during initial construction or later to extend the service life during any subsequent repair or renovation, depending on the project's specific requirements
- ▲ Concrete injections are non-invasive and are straightforward



At a Glance

01 - 03 •



Sika® Injection-101 h

Flexible water reactive pur-injection foam for temporary water stopping.

• 04 - 05



Sika® Injection-201 IN/202 IN

Elastic polyurethane injection resin for permanent watertight sealing.

06 - 08 •



Sikadur®-52 IN

Low viscosity injection resin



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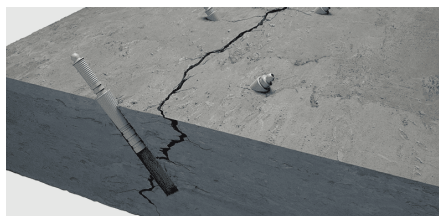
BUILDING TRUST

Sika® Injection-101 h

Flexible water reactive pur-injection foam for temporary water stopping.

Workable Areas

- ▲ Basement floor
- ▲ Retaining wall
- ▲ Tunnel
- ▲ Structural members
- ▲ Foundations
- ▲ Water retaining structures
- ▲ Water reservoir etc area where water is flowable.



Benefits of Sika® Injection-101 h

- ▲ Sika® Injection-101h can be injected as a single component system.
- ▲ No reaction takes place unless it comes with direct contact with water.
- ▲ Free foaming when in contact with water is up to 20 times, in controlled settings the foaming has been observed even up to 40 times.
- ▲ The reaction speed (foam formation) is influenced by the temperatures of the mixed material, the structure and the contact water, plus the hydrodynamic conditions.
- ▲ In cold temperatures (< +10°C) Sika® Injection-101 h can be accelerated using Sika® Injection-AC10.

Technical Information

Composition: Solvent free polyurethane two component injection system.

	Packaging	Colour	Density
Part : A	10 kg	Brown	1130 ± 30 kg/m ³
Part : B	0.9 kg	Clear	900 ± 30 kg/m ³

Viscosity: 200 - 700 cps, mixed viscosity of mixture at 30°C

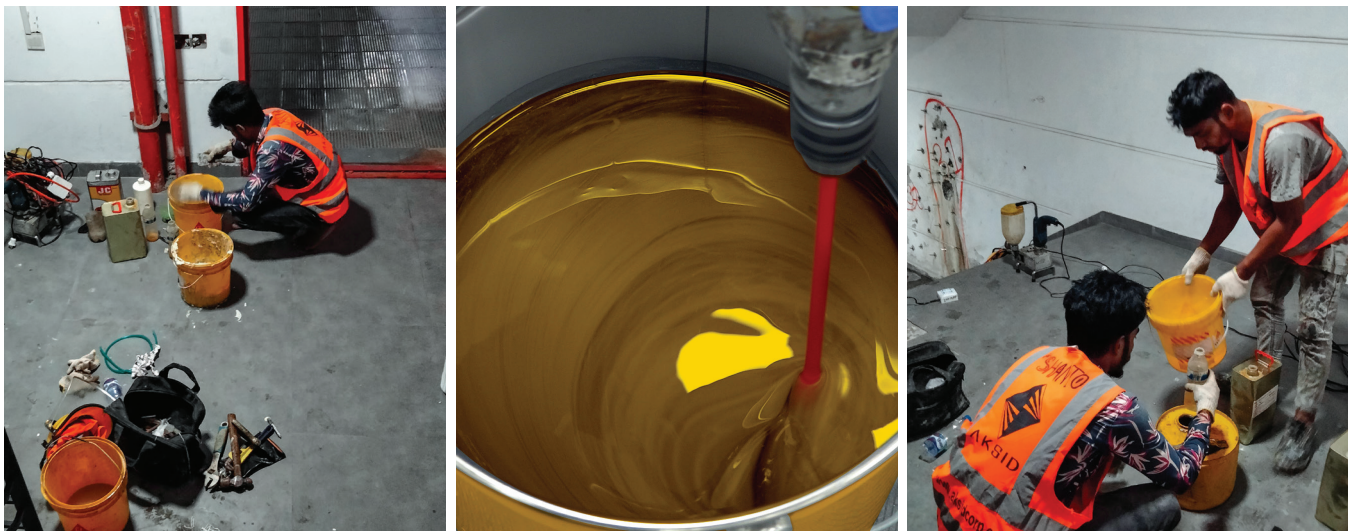
Expansion Starts: ~ 15 sec after contact with water

Expansion Ends: ~ 50 sec after contact with water

Mixing Ratio: Pack A: Pack B = 9 ± 1:1 (By Volume)

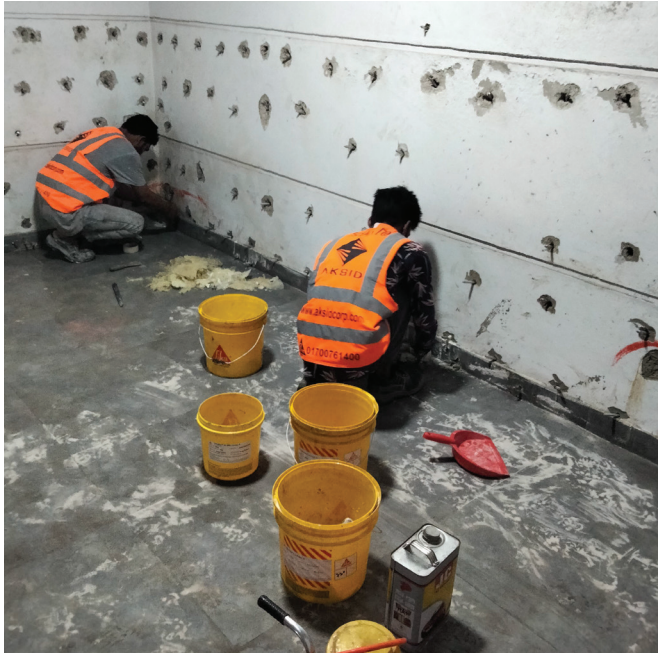
Mixing Procedure

Empty parts A and B into a mixing vessel and mix slowly and thoroughly by hand mixture machine for at least 3 min (max. 250 rpm) until homogeneous, thereby observing the safety precautions. The containers are supplied according to the required mixing ratio of 9 ± 1:1 parts by volume. Partial quantities can be measured out in separate vessels. After mixing, pour the material into the pump's feed container, stir briefly and apply within the pot life. After mixing, pour the material into the pump's feed container, stir briefly and use within the pot life.



Application

Use injection pumps suitable for single part injection products. Please note that the lid of the material is packed with pressure hence while opening the lid care must be taken and opened with care.

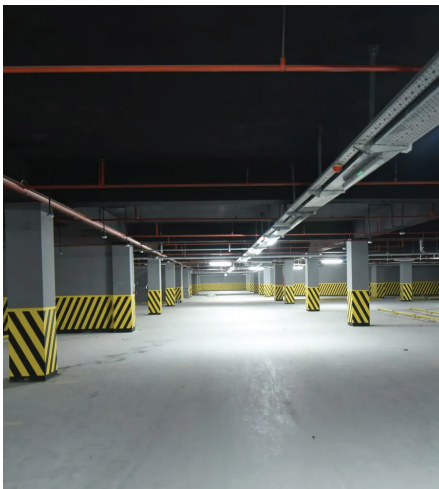


Sika® Injection-201 IN/202 IN

Elastic polyurethane injection resin for permanent watertight sealing

Workable Areas

- ▲ Basement floor
- ▲ Retaining wall
- ▲ Tunnel
- ▲ Structural members
- ▲ Foundations
- ▲ Water retaining structures
- ▲ Water reservoir etc area where water is flowable.



Advantages of Sika® Injection-201 IN/202 IN

- ▲ Act as a permanent watertight sealing when applied
- ▲ Permanently elastic, can absorb limited movements
- ▲ No shrinkage in subsequent dry conditions
- ▲ Due to its low viscosity, it can penetrate into cracks >0.2 mm in width
- ▲ Cured Sika® Injection-201 IN is inert and chemically resistant
- ▲ Solvent-free, environment friendly, usable in ground water protection zones

Technical Information

Composition: Solvent free, water reactive 2-part polyurethane resin (liquid)

	Packaging	Colour	Density
Part : A	10 kg	Translucent	$\sim 1.04 \pm 0.02 \text{ kg/m}^3$
Part : B	6 kg	Dark Brown	$\sim 1.22 \pm 0.02 \text{ kg/m}^3$

Viscosity: $\sim 250\text{-}600 \text{ mPa.s}$ or centipoise (cps) (Mixed A+B at $+30^\circ\text{C}$)

Mixing Ratio: 2:1 parts by volume (Part A: Part B)

Gel time Minimum: ~ 70 minutes (Mixed System at $+20^\circ\text{C}$)

Maximum: ~ 90 minutes (Mixed System at $+20^\circ\text{C}$)

Mixing & Application Procedure

Empty parts A and B into a mixing vessel and mix slowly and thoroughly for at least 2 min (max. 250 rpm) until homogeneous, observing the safety precautions. The containers are supplied according to the required mixing ratio of 2:1 parts by volume. Partial quantities can be measured out into separate vessels. After mixing, pour the material into the pump's feed container, stir briefly and apply within the pot life.



Sikadur®-52 IN

Low viscosity injection resin

Workable Areas

- ▲ Residential buildings, industrial buildings e.g., columns, beams, foundations, walls, floors.
- ▲ Bridges.
- ▲ Water retaining structures.



Benefits of Sikadur® 52 IN

- ▲ Solvent-free
- ▲ Suitable for dry conditions
- ▲ Usable at low temperatures
- ▲ Shrinkage free hardening
- ▲ High mechanical and adhesive strengths
- ▲ Hard but not brittle
- ▲ Low viscosity
- ▲ Injectable with single component pumps

Technical Information

Composition: Epoxy Resin

	Packaging	Colour
Part : A	0.8 kg plastic container	Colourless
Part : B	0.1 kg plastic container	Brownish yellow
Mixed Colour (Part A+B):	Yellowish-Brownish	

Mixing Ratio: Part A : Part B = 8 : 1 (by weight)

Density Mixed Density : 1.14 kg/l (at +27°C)

Viscosity: ~ 250 mPa.s at +30°C

Pot Life: ~ 30 min (at +30°C)

Compressive Strength (ASTM C-579)

Curing Time	Temperature at +30°C
1 day	≥ 40 N/mm ²
7 days	≥ 55 N/mm ²
14 days	≥ 55 N/mm ²

Tensile Strength ≥ 35 N/mm² (after 7 days at +30°C) (ISO 527)

Tensile Adhesion Strength To concrete: > 10 N/mm² (failure in concrete) (ASTM C 882)

Consumption 1.14 kg of Sikadur®-52 IN is ~ equal to 1 l injection resin.

Substrate Temperature +10°C min. / +40°C max.

Substrate Moisture Content Dry Condition

Pot Life

Temperature	Time	(FIP 5.1)
+30°C	~30 min	

*For 100 g mass



Mixing Procedure

Pre batched packaging:

Add all of part B to part A. Mix with an electric mixer at slow speed (max. 250 rpm) for at least 3 minutes. Avoid entraining air.

Bulk packaging:

Add both parts in the correct proportion into a suitable clean, dry container and mix in the same way as for the pre batched units.

Application

Injection of cracks on horizontal / vertical slabs: Injection flange / nipples are fixed along the crack line at an approximately 25 cm centre-to-centre 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 mortars or a suitable cementitious Sika mortar. Mixed Sikadur®-52 IN 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.



FAQ's

How does concrete crack injection work?

The concrete crack injection brings back the crack together and helps restore the strength of a structure. The repair strength of these injections happens to be stronger than that of concrete.

What size cracks should I repair?

The American Concrete Institute (ACI) suggests the following crack width guidelines:

Exposure Condition	Tolerable Crack Width (mm)
Dry air or protective membrane	0.41
Humidity, moist air, soil	0.30
De-icing chemicals	0.18
Seawater and seawater spray: Wetting and drying	0.15
Water retaining structures (excluding pressure pipes)	0.10

OUR OTHER SOLUTIONS



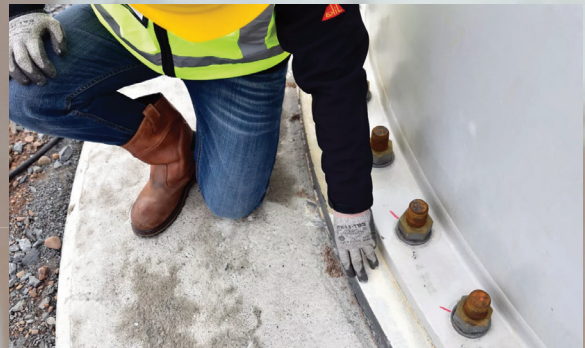
Concrete Repair



Industrial Flooring



Grinding & Polishing



Grouting



PU Flooring



Roofing



Waterproofing