

Sika[®] Injectoflex (Type HP)

Injectable hose waterstop system for construction joints

Construction

Description

The **Sika Injectoflex** system consists of a swellable, injectable hose that is used in construction joints to create watertight structures.

The system provides waterproofing in two phases:

- Penetrating water activates the swelling surfaces on the hose. The compression seal caused by the swelling profiles is usually sufficient to stop the water flow through the construction joint.
- If necessary the system can be injected with a micro-cement grout to fill any voids in the concrete.

Uses

Sika Injectoflex is suitable to be used as a joint sealing system:

- For watertight concrete structures such as underground parking garages, basements, water and waste water facilities, tunnels, reservoirs, dams and swimming pools.
- To replace conventional PVC waterstops in construction joints for new watertight concrete structures.
- For critical watertight concrete structures in construction joints between new and existing concrete.

Advantages

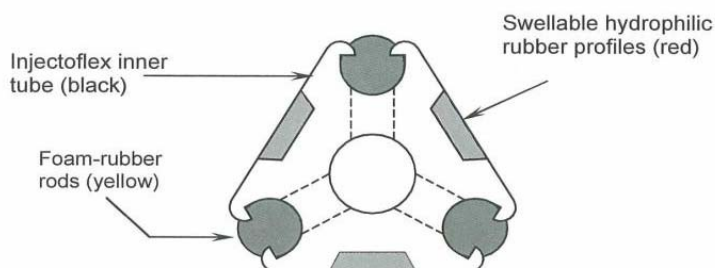
- Economical and easy to install
- The compact cross section of the hose allows for better consolidation of the concrete around the waterstop, helping to establish a watertight joint.
- The system provides two phase joint sealing.
- The system is re-injectable if required.
- Controlled expansion of the swelling profiles eliminates cracking in fresh concrete.
- Adaptable to suit the job requirement.
- Contains no bentonite, eliminating the risk of wash out.
- Can be applied to horizontal, vertical and overhead surfaces.
- Simple, effective method of application saves time and costs
- One way valves prevent concrete from entering and plugging the hose during concreting

The System

Sika Injectoflex Hose (Type HP)

The hose comprises of:

- Three outer, swellable red strips (hydrophilic rubber profiles)
- Three yellow, round foam rubber rods that act as one-way valves to prevent concrete entering the hose during placement, but allow injection grout to flow into the construction joint during injection.
- Sika Injectoflex inner tube made of black neoprene, non swelling rubber. During injection the injection grout flows lengthwise along the centre of the tube and into the construction joint.



Cross section of the Sika Injectoflex Hose (Type HP)

Sika Injectoflex Fixing Hooks

Yellow plastic hooks used to attach the Injectoflex hose to the concrete surface.

Sika Injectoflex Shutter Packer

Injection of the Sika Injectoflex Hose if required is carried out through the Shutter Packer. It comprises of two injection ports (one coloured red, one green) that are installed flush to the formwork by fixing to the reinforcement. Transparent connection tubes connect the Shutter Packer to the ends of the Injectoflex hose.

Packaging

The Sika Injectoflex (Type HP) system is packed in a carton, containing:

- Injectoflex Hose (Type HP) in 40 metre rolls
- Shutter packers with connector pieces and tubes
- Corner connectors
- Plastic fixing hooks

Storage and Shelf Life

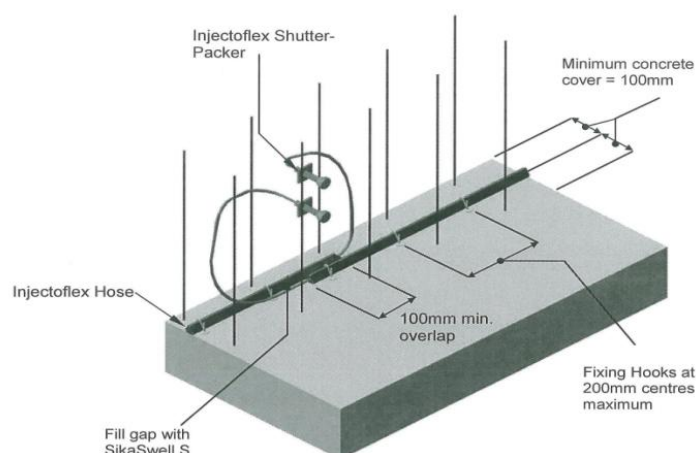
The Sika Injectoflex Hose (Type HP) has a shelf life of two years when stored in original unopened containers in dry conditions (between 5°C and 25°C)

Instructions for Use**General**

- The Sika Injectoflex Hose is placed, at a maximum, in 8 metre long sections. Adjacent sections of Injectoflex Hose must overlap by 100 mm. The gap between the two overlapping hose ends must be sealed with Sika Swell S-2 to prevent water from passing around the ends.
- A Sika Injectoflex Shutter Packer is installed adjacent to the ends of the overlapping hose sections. The Shutter Packer unit contains an inlet and outlet for the two adjacent sections, and provides access to the ends of the two overlapping hoses for injection.

Surface Preparation

- Substrate must be clean, sound, and free of loose particles, dust, laitance, oils and other contaminants.
- Surface can be damp, but must not have any standing water.

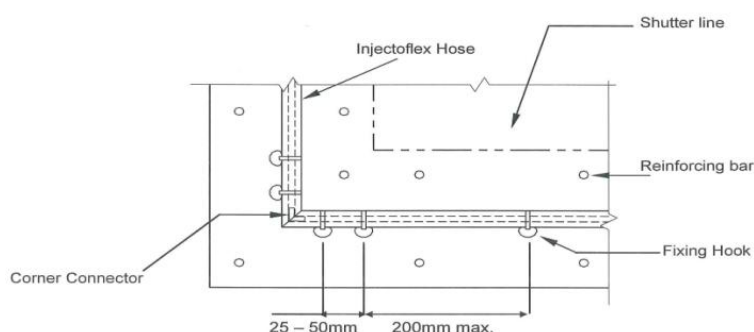


System configuration

Fixing Methods

- The Sika Injectoflex Hose is always placed on top, and usually in the centre of the hardened concrete. The hose requires a minimum concrete cover of 100 mm from the surface of the inner and outer formwork
- The Sika Injectoflex Hose must be securely fastened to the concrete substrate using the plastic Sika Fixing Hooks every 200 mm (maximum) along the length of the hose, and with Sika Swell S-2 used to adhere the hose to the surface.
- **Sika Injectoflex Fixing Hooks:** the hooks are placed at a maximum spacing of 200 mm either directly into the fresh concrete, or later hammered into holes of 10 mm diameter. To prevent the hose being unnecessarily subjected to the elements, the Fixing Hooks can be installed at any time and then the hose snapped under the hooks at an appropriate time before placing the concrete.

- **Sika Swell S-2:** apply Sika Swell S-2 in a narrow bead (minimum 5 mm wide x 10 mm high) into which the Injectoflex Hose can be firmly bedded without any voids. Within 30 minutes of applying the sealant, press the Injectoflex Hose into the sealant bead and then wait for 2 hours before commencing concreting work.
- At tight corners and edges, the Sika Injectoflex Corner Connectors are used. Cut the Injectoflex Hose at 45° and connect both sections flush with the corner connection piece. Fix the hose to the concrete using Fixing Hooks at 25 to 50 mm spacing, using Sika Swell S-2.



The Injection Process

- At the end of each section of hose, a Sika Shutter Packer is connected to the Sika Injectoflex Hose by the Sika Connection Tubes. The Sika Shutter packer is installed flush to the formwork and is held in place by tying to the reinforcement. This is how the Sika Injectoflex System is accessed if injection of the hose is necessary. The removable plastic caps on the end of the Sika Shutter packer are the only visible signs of the Sika Injectoflex System on the finished concrete structure.
- If water reaches the Sika Injectoflex System within the construction joint, in most cases, sealing is achieved by the swelling action of the 3 rubber profiles and the resulting compression seal created by the profiles. If some localised water leakage occurs due to honeycombs and voids at the joint, these leaks can be stopped in a second phase by injection through the Injectoflex Hose. The injection material will fill voids and honeycombs within the joint, stopping water movement across the joint.
- Sika InjectoCem-190 is used for the injection of the Sika Injectoflex System. Sika InjectoCem-190 is a pre-packaged micro-cement grout. It is water soluble in its liquid phase and can therefore be flushed from the Sika Injectoflex System, prior to hardening, to allow for possible re-injection in the future. Please refer to your local Sika representative for more details.

Concrete Mix

For watertight concrete construction, Sika recommends a mix design with minimum cement content of 350 kg/m³, and a water/cement ratio less than 0.40. Sika also recommends using Sika 1 waterproofing admixture to block the pores and capillaries within the concrete and Sikament water reducers when placing concrete with over a 100 mm slump.

Important Notes

- Sika Injectoflex System is NOT suitable for expansion joints.
- Do not leave Sika Injectoflex System in standing water for more than 24 hours. The swelling profiles will begin to swell prematurely, which will reduce the sealing capacity of the profiles.

Handling Precautions

- Avoid contact with skin, eyes and avoid breathing in vapour.
 - Wear protective gloves when mixing or using this product.
 - If poisoning occurs contact a doctor or Poisons Information Centre.
 - If swallowed do NOT induce vomiting, give a glass of water.
 - If skin contact occurs, wash immediately and thoroughly with soap and water.
 - If in contact with the eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
 - A full material safety data sheet is available from Sika on request.
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Important Notification

The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

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