

Product Data Sheet
Edition 15/10/2014
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SikaFuko® Eco 1

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Injectable hose for sealing construction joints in watertight structures

Product Description

Injectable hose to seal construction joints in watertight structures against water and salt water ingress.

Uses

SikaFuko® Eco 1 is used to seal construction joints in watertight structures against water and salt water ingress. It is cast into the construction joints with the concrete. When it is necessary to seal or reseal the construction joints, SikaFuko® Eco 1 can be injected with the most suitable Sika Injection materials based on acrylic and polyurethane resins or microfine cement suspensions.

Characteristics / Advantages

- Re-injectable with Sika acrylic resins and microfine cement suspensions
- One time Injectable with Sika polyurethane injection resins
- Highly economical
- Ideal back-up solution for combination with waterstops
- Easy to install
- Tested in water pressures up to 10 bar (100m)
- Suitable for many different structures and construction methods

Tests

Approval / Standards

MPA NRW: German Approvals for use in construction joints (29.11.04) / (02.07.04) / (23.04.08)

WISSBAU: Tested for application with polyurethane resins in construction joints (02.04.04) / (11.02.08)

WISSBAU: Tested for application with acrylic resins and microfine cement suspensions resins in construction joints (20.07.04)

Product Data

Form

Packaging

SikaFuko® Eco 1 is supplied as a **Combi-pack** in a cardboard box containing:

- **200 m SikaFuko® Eco 1**
- 10 m green PVC-hose (inlet)
- 10 m white PVC-hose (outlet)
- Accessories (2 m connecting pipe, 4 m heat shrink sleeve , x 50 closure plugs, 1 can of glue, 1 roll of tape, x 800 fastening clips)

Storage

Storage Conditions / Shelf Life

48 months from date of production if stored in undamaged, unopened and sealed original packaging, in dry conditions at temperatures between +5°C and +25°C.



Technical Data

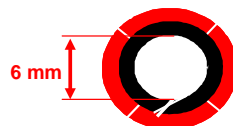
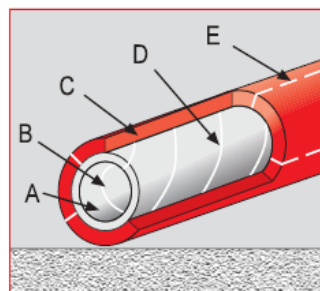
Chemical Base	white inner core:	PVC
	red outer layer:	expanded polyurethane

Mechanical / Physical Properties

Shore A (D) Hardness	white inner core: D 50 +/- 3	(DIN 53505)
	red outer layer: A 80 +/- 5 (not expanded)	(DIN 53505)
Elongation at Break	white inner core: ≥ 100 %	(DIN 53504)
	red outer layer: > 50 %	(DIN 53504)
Tensile Strength	white inner core: ≥ 10 N/mm ²	(DIN 53504)
	red outer layer: ≥ 10 N/mm ² (not expanded)	(DIN 53504)

System Information

System Structure **SikaFuko® Eco 1**

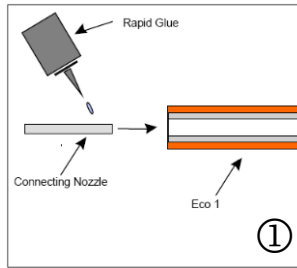


- A Injection channel (internal diameter: 6 mm)
- B White PVC spiral hose core to take up the concrete pressure
- C Foamed plastic outer layer as a sealing membrane and to prevent cement laitance penetration during concreting
- D Spiral perforation in the PVC core of the injection hose
- E Staggered slot perforations in the foamed plastic outer layer for uniform emergence of injection materials

Internal diameter: 6 mm (1/4 ")

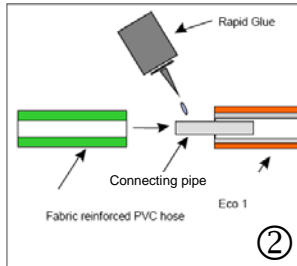
Application Instructions

Assembly Instructions



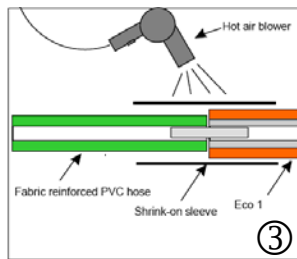
Accessories for the injection / vent ends

- ✓ The fabric reinforced PVC hoses (green and transparent) are cut to the desired length (standard size approx. 400mm).
- ✓ The connecting pipe and the shrink-on sleeve are cut to a length of approx. 50 - 60 mm for each end.

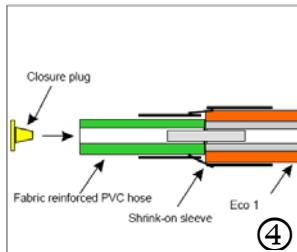


Assembly

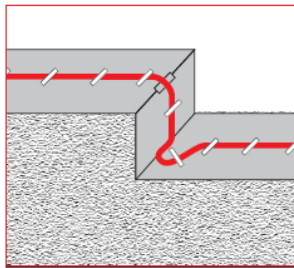
- ✓ Rapid glue is applied on the connecting pipe which is inserted approx. halfway into the SikaFuko® Eco 1 (fig. 1).
- ✓ Rapid glue is then applied on the second half of the connection pipe. The fabric reinforced PVC hose (green and transparent) is slid over the connection pipe (fig. 2).



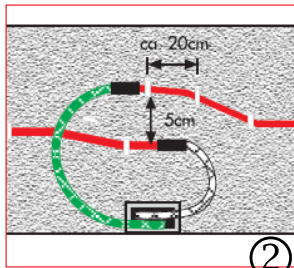
- ✓ A shrink-on sleeve is installed in the middle covering of the connection between the PVC hose and the SikaFuko® Eco 1 and heated with a hot air gun. The sleeve shrinks and firmly holds the connection area (fig. 3).



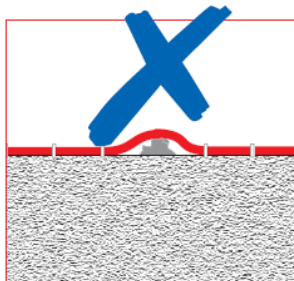
- ✓ The PVC hose ends are closed with the closure plugs to avoid the entry of other materials (fig. 4).
- ✓ The SikaFuko® Eco 1 is now ready for installation.



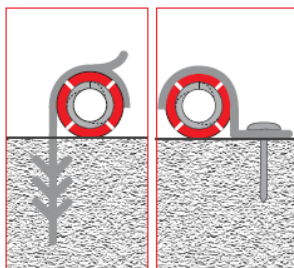
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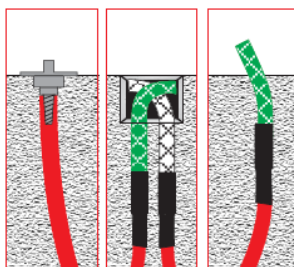
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Installation

- ✓ In general, SikaFuko® Eco 1 is installed in maximum lengths of up to **10 m**. The PVC hose ends have to be included in this length.
- ✓ The SikaFuko® Eco 1 is installed on the hardened concrete surface in the middle of the construction joint (fig. 1).
- ✓ The minimum distance between two parallel hose sections must be 50 mm (fig. 2).
- ✓ If two SikaFuko® Eco 1 hoses cross for construction reasons e.g. at junctions, the upper of the hoses must be installed with the PVC hose in the overlapping area (fig. 2).

Fixing

- ✓ The hose is fixed to prevent it from sliding or floating with special clips at intervals of approx. 200 mm. The clips are pressed into 6 mm drilled holes (fig. 2 + 4).
- ✓ The injection hose shall not be fastened to the reinforcement bars. The injection hose must lie flat on the concrete surface throughout and be routed in such a way that it is not buckled or constricted (fig. 3).

Junction boxes

- ✓ For injection operations, the injection pump is connected to the PVC hose vent ends which are housed in the junction boxes (fig. 5, centre).
- ✓ The SikaFuko® Eco 1 must be installed in such a way that the joint between the SikaFuko® Eco 1 and the PVC connection hose is completely embedded in concrete with a minimum cover of 50 mm.
- ✓ The junction boxes must be located approx. 150mm above horizontal construction joints, or next to the vertical construction joints.
- ✓ When installing junction boxes, the PVC hose injection and vent ends are continued approx. 100mm into the junction box so that the ends are accessible for injection.
- ✓ The junction boxes / injection packers must be located where they are still easily accessible for injection later.

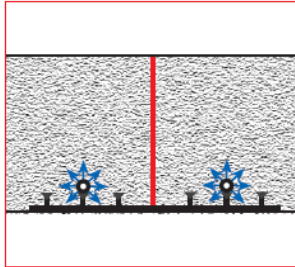
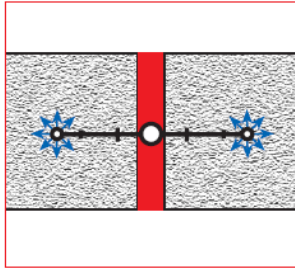
Injection ports or packers

- ✓ The SikaFuko® Eco 1 can be injected through individual injection ports or packers (fig. 5, left) or via the PVC hose ends which are continued to junction boxes /or elsewhere outside of the concrete (fig. 5, centre / right).

Documentation

- ✓ The precise location and the route of the injection hoses in the structure shall be carefully recorded and detailed (in 'as built' drawings).

Back-Up System



Combination with Waterstop profiles

The SikaFuko® Eco 1 injection hose can also be used in combination with different waterstop profiles:

- ✓ Internally placed expansion joint waterstops: The injection hose is fixed to both legs of the waterstop using special clips (every 200mm) on the edge beads.
- ✓ Internally placed expansion joint waterstops with lateral steel plates: The injection hose is fixed to the lateral steel plates with clips. According to the German regulation ZTV ING (Tunnel), internal elastomeric waterstops with vulcanised steel plates and attached injection channels, have to be installed in the construction of road tunnels for example.
- ✓ Externally placed expansion joint and construction joint waterstops. The injection hose is fixed to the central anchor rib. Suitable clearance to the reinforcement must be maintained so that the steel does not lie on the injection hose.

Injection



Injection materials

The SikaFuko® Eco 1 injection hose and the Sika injection material are a system. Not every injection material is suitable for injection. The injection materials must have the following properties:

- ✓ Adequate viscosity (< 200 mPas at 20°C)
- ✓ Adequate curing time (> 20-30 min.)

The SikaFuko® Eco 1 is injectable with different Sika injection materials:

Re-Injectable

- ✓ Acrylic resins
- ✓ Microfine cement suspensions

One-time Injectable

- ✓ Polyurethane resins

Notes on Application / Limitations

Do not use SikaFuko® Eco 1 -System for sealing expansion / movement joints.

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.

Local Restrictions

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

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

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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