KÖSTER
Waterproofing Systems

KÖSTER 2 IN 1

Technical Data Sheet IN 201

Issued: 2022-09-09

- Test of the Performance and Specific Properties of the Polyurethane Resin "KÖSTER 2 IN 1" According to DIN EN 1504-5. MPA TU Braunschweig, Doc.-No. (5176/511/13) from 2015-01-20.

Water reactive elastic PU-injection resin for single and two stage injection of dry and water bearing cracks

CE 0761	KÖSTER BAUCHEMIE AG Dieselstraße 1-10, 26607 Aurich **15** **IN 201** **EN 1504:2004** **Concrete Injection for the elastic filing of cracks, voids, and defects** **U(D1)(W5)(1/2/3/4)(8/30)**
Adhesion capacity	≥ 0.3 MPa
Elongation capacity	> 10 %
Water tightness	D1
Glass transition temperature	NPD
Injectability into dry medium	Injectability class: 0.3 filling degree > 90%
Injectability into non-dry medium	Injectability class: 0.3 filing degree > 90%
Durability	No failure during compressive tests; loss of deformation capability 20 %
Corrosion behaviour	deemed to have no corrosive effect
Dangerous substances	NPD

Features

When KÖSTER 2 IN 1 resin comes into contact with water, it reacts to form a highly elastic foam. When KÖSTER 2 IN 1 resin is injected under dry conditions, it reacts to form a solid body elastic resin. KÖSTER 2 IN 1 remains permanently elastic after reacting. It is therefore able to follow crack movements and seal cracks permanently with an elastic polyurethane solid resin without necessitating follow-up injections. KÖSTER 2 IN 1 is a fast reacting foam for the short term sealing of leaks as well as an elastic solid resin for the permanent sealing of cracks. KÖSTER 2 IN 1 unites two resins in one product. KÖSTER 2 IN 1 is resistant to hydrolysis and does not react aggressively when coming into contact with steel or iron, so that corrosion protection is achieved.

Advantages

- Intelligent material that foams in contact with water or creates an elastic resin in dry conditions
- Only one product is needed on the jobsite- provides for easier calculation of required resin quantities
- Applicator no longer needs to verify if a crack is wet or dry
- Re-injection is done through the same packers as initial injection
- Comparably long pot life
- Does not turn brittle over time

Technical Data

Mixing viscosity at + 25 °C (ISO 2555)	approx. 150 mPa.s
Volume increase at water contact:	max. 1:20
Density of the mixture at + 20 °C (DIN 53479)	approx. 1.1 kg / l
Spec. gravity of the cured foam	approx. 0.05-0.1 g / cm³
Ideal application temperature	+ 15 °C
Application temperature	+ 5 °C to + 30 °C
Starting time at water contact:	approx. 30 sec.
Expansion time:	approx. 240 sec.
Non-sticky after	approx. 8 min.
Pot life (+ 20 °C, 1 kg of mixture) (DIN EN 1504-5)	45 min.
Reaction time without water contact(at + 20 °C)	approx. 24 hrs.
Mixing ratio (by weight)	1 : 1 (A : B)
Mixing ratio (by volume)	1.2 : 1 (A : B)

Fields of Application

For elastic sealing of cracks in concrete and masonry e.g., in concrete elements or engineering structures such as bridges or tunnels, underground garages, etc. The material stops active leaks and seals cracks and construction joints permanently and elastically. It can be injected in dry and wet cracks. The material can also be used for filling of voids.The injection is carried out in a two-step process with just one material.

- Stopping fast large water leakages with a foaming action
- Permanently sealing cracks with an elastic solid body resin
- Waterproofing and sealing horizontal and vertical cracks
- Sealing wall-floor joints

Application

The A and the B component are recommended to be mixed at + 15 °C in the given mixing ratio using a slowly rotating electrical mixer preferably equipped with a KÖSTER Resin Stirrer. The material must be mixed until it is streak free and homogeneous in appearance and consistency.

The ready mixed material must be used within the given pot life. The minimum application temperature is + 5 °C. Ideally the material should be tempered to + 15 °C before mixing and injection. Temperatures above + 25 °C will increase the reaction rate and reduce the pot life. The mixture can be applied using conventional single component injection pumps such as the electrical KÖSTER 1C Injection Pump. Prior to the injection, the cracks can be sealed using KÖSTER KB-Fix 5. Holes are drilled on alternating sides along the course of the crack at an interval of approx. 10 – 15 cm. Injection packers are inserted into the holes and (when possible) injected from bottom to top. The diameter of the drill holes depends on the injection packers chosen. The injection is carried out in two stages:

Injection of KÖSTER 2 IN 1 until the resin is discharged as foam from the adjoining drill hole or respectively the surface of the crack.

IN - Injection systems

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Follow-up injection with KÖSTER 2 IN 1 within 10 to 15 minutes of the initial injection. The follow-up injection has to be carried out within the pot life of the initially injected material. (When filling large, wet voids inject in two stages. Waiting time between the first and second injection is at least 1 hour).

Consumption
Approx. 0.1 kg / l void (foam), approx. 1.1 kg / l void (solid resin)

Cleaning
Clean tools immediately after use with KÖSTER PUR Cleaner.

Packaging

IN 201 001	1 kg combipackage
IN 201 005	5 kg combipackage
IN 201 020	20 kg combipackage

Storage
Store the material at temperatures between + 10 °C and + 30 °C. In originally sealed packages, the material can be stored for 6 months. After partial removal, the containers must be closed immediately (do not mix up the caps) and turned "upside down" once to seal the closures from the inside.

Safety
Contains diisocyanate. When working with the material, work clothing that covers arms and legs or a protective suit must be worn. When working in confined spaces or in the "overhead area" hoods or covers must be worn. Wear suitable protective gloves (e.g., nitrile gloves) and protective goggles. When processing the material, pressure is created. Please do not stand directly behind Packer. When carrying out injection work, make sure to protect the surrounding work area from injection resin that may be discharged from the wall, packers, drill holes, etc.

Other
- Due to water displacements, reinjections may be necessary to address localized areas
- KÖSTER 2 IN 1 is not suitable for wide moving joints with considerably high dynamic movements

Related products

KÖSTER KB-Fix 5	Prod. code C 515 015
KÖSTER PUR Cleaner	Prod. code IN 900 010
KÖSTER Impact Packer 12 mm x 70 mm	Prod. code IN 903 001
KÖSTER Superpacker 13 mm x 115 mm CH	Prod. code IN 915 001
KÖSTER One-Day-Site Packer 13 mm x 120 mm PH	Prod. code IN 922 001
KÖSTER 1C Injection Pump	Prod. code IN 929 001
KÖSTER Hand Pump without manometer	Prod. code IN 953 001
KÖSTER Hand Pump with manometer	Prod. code IN 953 002

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