




## KÖSTER Injection Gel G4

Technical Data Sheet IN 290

Issued: 2025-04-01

- DIBt (German Institute for building technology) - general test certificate abZ Number: Z-101.29-28 "KÖSTER Injection Gel G4 for curtain injection"
- Hygienic institute Gelsenkirchen: Drinking water certification according to the coating guideline of the German Federal Environmental Agency
- MFPA Leipzig: Test report PB 5.1/15-500-1 for non-toxic ground water interaction
- MFPA Leipzig: Test report PB 5.1/15-500-2 "Determining identifying characteristics of an acrylic based injection gel"
- MFPA Leipzig: Test report PB 3.1/16-134-1 "Determining the flammability (Fire Class B2) according to DIN 4102-1"
- RWTH Aachen (ibac): M 2148; corrosion testing of steel reinforcement in contact with an acrylic gel
- Institute IMS RD, Belgrade: Test report UIV 001/17 Leak test for Gel body up to 7 bar
- IGH Institute Gradivine Hrvatska (Institute of Construction Technology Croatia); Resistance to salt water storage: Test certificate IGH No. 72530-PS / 050/17 according to EN 14498: 2004, regime A of January 19th 2018
- safe.CERT - DW/DE - 500324-2456 (ORG-P3-SEAL), regarding the hygiene suitability for drinking water of KÖSTER Injection Gel G4 for cold (+23 °C) and warm (+60 °C) water, 26.04.2024

## Low viscosity acrylic gel for curtain injection and injection into masonry and concrete

	<b>KÖSTER BAUCHEMIE AG</b> Dieselstraße 1-10, 26607 Aurich 18 <b>IN 290</b> <b>EN 1504-5:2004</b> <b>Concrete injection for the elastic filling of cracks, voids, and defects</b> <b>U(D2)-W(1)-(1/2/3/4)-(5/30)</b>
Adhesion capacity Elongation capacity Water tightness Glass transition temperature Injectability into dry medium Injectability into non-dry medium Durability Corrosion behaviour Dangerous substances	> 1,0 MPa > 10 % D2 NPD Injectability class: 0,1 Injectability class: 0,1 No failure during compressive tests No corrosive effect NPD

### Features

Water based, elastic acrylic gel with a very low starting viscosity after initial mixing. It is capable to bind water during the gelation. The swelling ability after full curing allows a 40% intake of additional water into the gel structure. Due to the low starting viscosity it can be injected into fine substrate pores.

### Technical Data

Solubility in water	soluble
Mix Viscosity	approx. 2.4 mPa.s / + 20 °C
	Kinexus, d = 6 cm, conical plate
	Shear rate 100 sec <sup>-1</sup>
Application Temperature	> + 5 °C
Reaction Start	after approx. 3 Minutes / + 20 °C
Network-building-time	after approx. 5 Minutes / + 20 °C
Final Curing	after approx. 8 Minutes / + 20 °C

### Fields of Application

For waterproofing below ground construction elements on the outside by curtain injection. For injection into full brick masonry in order to seal the mortar joints against water ingress. Can be applied in special waterproofing applications such as tunnels, shafts, voids, cracks, and concrete injection according to the EN 1504 as well as for soil stabilization.

KÖSTER Injection Gel G4 can also be used in contact with drinking

water.

### Application

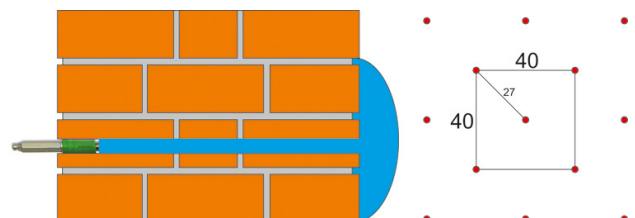
The material is injected using a 2-component-injection pump with an integrated water flush, e. g. the KÖSTER Acrylic Gel Pump. Before application, the delivered concentrate needs to be diluted to approx. the double amount using local tap water (see section for mixing).

### Mixing

The A2 component is filled into the A1 component canister. Afterwards both components are thoroughly mixed through shaking / seesawing the canister (mixing time is 3 minutes). The B component is filled into the additional green canister and afterward filled with clean water up to the level of the upper mark (28,5 cm filling height). Both components are thoroughly mixed through shaking / seesawing the canister (mixing time is 3 minutes). The ready mixed components have a pot life of 24 hours.

### Curtain Injection

The construction element to be waterproofed is drilled in a certain pattern, shown in the illustration below. The typical spacing is 40 cm in a square shape with a central drill hole in the middle. The use of 10-18 mm packers, e.g. KÖSTER Superpackers, is recommended. In the case of perforated bricks the use of KÖSTER Gel Packers is recommended. Due to their length, the KÖSTER Gel Packers release the material to the outside of the wall, so that voids within the construction element are not filled. The injection is typically done in a multiple step application, where the amount of material is split up according to the application parameters. For a detailed application guideline, please contact KÖSTER's technical support team.

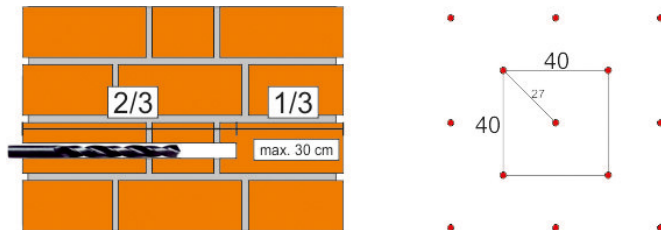


### Injection into masonry

The component to be waterproofed is drilled horizontally, ensuring that at least one joint is crossed. For 24 mm masonry, this corresponds to a drilling depth of 50% (only the stretchers are drilled). For 36 mm masonry and above, the rule of thumb is "2/3 of the wall thickness."

The information contained in this technical data sheet is based on the results of our research and on our practical experience in the field. All given test data are average values which have been obtained under defined conditions. The proper and thereby effective and successful application of our products is not subject to our control. The installer is responsible for the correct application under consideration of the specific conditions of the construction site and for the final results of the construction process. This may require adjustments to the recommendations given here for standard cases. Specifications made by our employees or representatives which exceed the specifications contained in this technical guideline require written confirmation. The valid standards for testing and installation, technical guidelines, and acknowledged rules of technology have to be adhered to at all times. The warranty can and is therefore only applied to the quality of our products within the scope of our terms and conditions, not however, for their effective and successful application. This guideline has been technically revised; all previous versions are invalid.

The construction element to be waterproofed is horizontally drilled up to 2/3 of its thickness. For very thick masonry (over 1 m), drill in such a way that 30 cm remain undrilled, using a square pattern with a typical spacing of 40 cm with a centered drill hole in the middle. Subsequently, an injection barrier is applied using KÖSTER Injection Barrier to prevent the loss of injection material. The boreholes are equipped with packers suitable for high pressure injection, e.g. KÖSTER Superpackers. The injection is typically done in a multiple step application until the wall is saturated. Defects in the masonry are immediately repaired using KÖSTER KB Fix 5.



### Horizontal Barrier (DPC)

A horizontal barrier is a special case in masonry injection. An injected horizontal barrier effectively obstructs the capillaries and with careful execution stops moisture from wicking through the structure. The component to be waterproofed is drilled horizontally in one or two rows to a depth of approximately 5 cm from the wall end. The drill hole spacing (vertical and horizontal) is max. 20 cm. If drill holes are arranged in two rows, the individual rows must be staggered. If necessary, a layer of KÖSTER Injection Barrier can then be applied. Grouting is carried out in a multi-stage process until the masonry is saturated. Any cracks are repaired with rapid-setting cement, e.g., KÖSTER KB-Fix 5. It can be used at moisture content up to 95% and with high salt concentrations.

In some cases, a horizontal barrier should reach the bottom of the wall, (see drawing). Then The grid is planned in three rows, with the 45° holes in the same level as the upper packer row. The drill hole length for the inclined drill holes is increased by 40%. The amount of material is 50% higher than that determined through the Standard calculation.

### Soil Stabilization

Soil stabilization with acrylic gels can be performed, for example, underneath structural foundations or slabs to stabilize soils that are prone to settlement due to the loss of fine particles from the soil, through walls to consolidate the material behind them and carry out structural repairs or drainage replacements, or inside dikes to improve the filling material and reduce water filtrations, among others.

The soil stabilization is carried out by injecting KÖSTER Injection Gel G4 through special injection lances, which are positioned in a certain pattern according to the characteristics of the project. The extremely low viscosity of the gel allows deep penetration and distribution of the material between the grain matrix, binding the soil and water into an elastic gel-soil body. The result is a more stable, bonded, waterproof soil composition with a reduced risk of leaching of fines.

All applications require a specific design and must be considered individually to determine the most appropriate method. The effect of soil stabilization must be tested and measured on a case-by-case basis.

### Consumption

Depends on the field of application.

The consumption stated in this technical datasheet always refers to the

ready mixed and already diluted product. Minimum Consumption (reference values):

<b>Curtain Injection:</b>	min. 40 kg / m <sup>2</sup> (standard 50 kg / m <sup>2</sup> )
<b>Injection into masonry:</b>	4 kg / m <sup>2</sup> for every 10 cm of the brickwall thickness
<b>Horizontal Barrier (DPC)</b>	Approx. 2.4 kg / m for every 10 cm of the brickwall thickness
<b>Soil stabilization</b>	Depend on project specifics

### Cleaning

Clean the pump immediately after use with clean water.

### Packaging

IN 290 021  
Component A1: 20 kg; Component B: 0.4 kg

### Storage

Store the material in a cool and frost free environment. In originally sealed containers the material can be stored for a minimum of 12 months. Protect the material from direct sunlight.

### Safety

Wear protective clothing, gloves and goggles during processing and application of the material. During the application of the material pressure builds up. Do not stand directly behind the packers. In case of skin contact, wash off the material immediately with lots of soap and water. In case of eye contact, flush eyes immediately and thoroughly with water or preferably an emergency eye wash bottle. Consult a doctor. Observe all governmental, state, and local safety guidelines when processing the material.

### Related products

KÖSTER KB-Fix 5	Prod. code C 515
KÖSTER Mortar Boost	Prod. code C 791 010
KÖSTER Injection Barrier	Prod. code IN 501 025
KÖSTER Lamella Impact Packer Adapter	Prod. code IN 908 001
KÖSTER Lamella Impact Packer	Prod. code IN 909 001
KÖSTER Superpacker 10 mm x 85 mm CH	Prod. code IN 912 001
KÖSTER Superpacker 10 mm x 115 mm CH	Prod. code IN 913 001
KÖSTER Superpacker 13 mm x 130 mm CH	Prod. code IN 915 001
KÖSTER One-Day-Site Packer 13 mm x 90 mm CH	Prod. code IN 918 001
KÖSTER One-Day-Site Packer 13 mm x 120 mm CH	Prod. code IN 919 001
KÖSTER One-Day-Site Packer 13 mm x 90 mm PH	Prod. code IN 921 001
KÖSTER One-Day-Site Packer 13 mm x 120 mm PH	Prod. code IN 922 001
KÖSTER Slide Coupling for pan-head fitting	Prod. code IN 928 007
KÖSTER Acrylic Gel Pump	Prod. code IN 930 001
KÖSTER Gel Packer (Base)	Prod. code IN 931 001
KÖSTER Gel Packer (End piece)	Prod. code IN 932 001
KÖSTER Gel Packer extension pipe 800 mm	Prod. code IN 933 001
KÖSTER Drive-in Aid for Gel Packers	Prod. code IN 935 001

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KÖSTER Cutting Device for Gel Packers    Prod. code IN 936 001  
KÖSTER Grip Head    Prod. code IN 953 005

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