

Method Statement

Acrylic gel Injection with KÖSTER Gel S4 with B+



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1 General information

1.1 Scope

This method statement is intended for use by developers, contractors and applicators as a general guideline for sealing joints with KÖSTER acrylic gels.

While this document describes the tools, equipment, materials and process for preparing and installing the in-

jection system products, it must be used and referred to in combination with all other relevant technical information available for the products and their components.

1.2 Manufacturer

KÖSTER BAUCHEMIE AG

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KÖSTER
Waterproofing Systems

1.3 Definitions

Compressive strength

Capacity of a material to withstand axially directed pushing forces. When the limit of compressive strength is reached, materials will collapse.

Gel Formulation

Gel is a Visco-elastic material in a state between a liquid and a solid.

Corrosion

Water and oxygen enter the construction member made of concrete. The steel reinforcements start to corrode. The corroding steel reinforcements expand and blast the covering concrete off.

Elasticity

Elasticity is the ability of a material to return to its original form, after been exposed to external forces, e.g. stretching or compressing.

Elongation at break

It is a measurement that shows how much a material can be stretched — as a percentage of its original dimensions — before it breaks. This is also referred to as percent elongation, which is a measurement of the amount a material will plastically and elastically deform up to fracture. The material's final length is compared with its original length to determine the percent elongation and the material's ductility.

Swelling ability

A polymer's ability to swell is determined by the amount of liquid material that it can absorb.

ECO friendly

Common expression and marketing term widely use referring to articles and services, policies, regulations, laws, among others, declaring a minimal or no impact to the environment or ecosystem..

Exothermic reaction

A reaction that releases energy from the system to its surroundings, usually in the form of heat, but also in a form of light. This depends upon the reactant materials.

Construction joints:

Those are joints formed due to the different casting timing of two adjacent construction elements. This could be also considered the case for joints between vertical elements (like walls) and horizontal ones (like slabs) which are considered to be important weak points that could lead to water leakage, especially when subjected to negative water pressure.

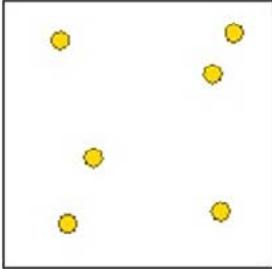
Expansion joints:

Expansion joints are joints that were implemented intentionally into the structure to give the chance for the concrete to expand and contract without cracking. Expansion joints subject to negative water pressure required injection because traditional joint sealing systems cannot not withstand the demands over time.

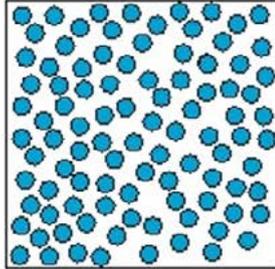
2 What are acrylic gels?

Gels are visco-elastic materials in a state between a liquid and a solid. In reacted state, acrylic gels form a non-fluid colloidal network or polymer network that is expanded by a fluid in its entire volume.

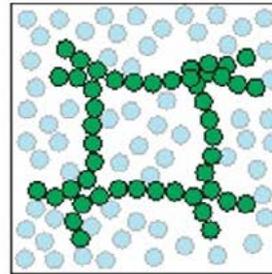
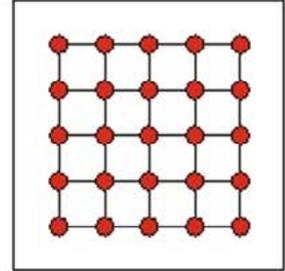
Gas



Liquid state



Solid state

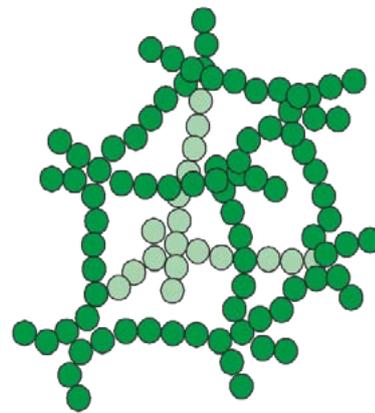
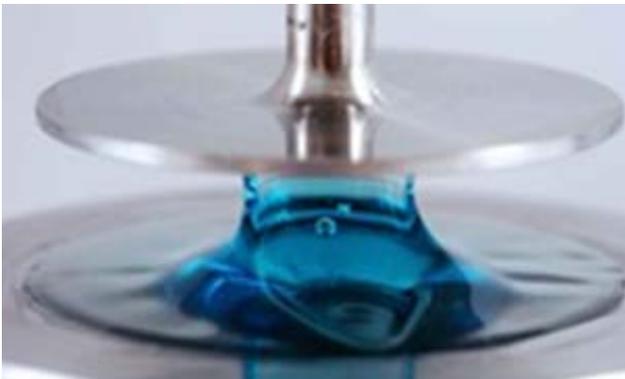


Gel

Acrylic gels are predominantly distinguished by their extremely low initial viscosity (similar to water), allowing the deepest penetration in the pore structure among all other injection materials.

They are typically used for creating a waterproofing through curtain, masonry, and void injection.

Gels used for creating a waterproofing are characterized, even in the fully reacted state, by having considerable amounts of water (hydrophilic capabilities), which are physically bound in the polymer network. The bond is sufficient that the water cannot be driven out even by high pressure.



3 System description

3.1 System features

KÖSTER Injection Gel S4

The KÖSTER Injection Gel S4 is a reaction time adjustable acrylic gel used for stopping active water ingress, curtain injection, and to quickly seal joints. The setting time can be adjusted between 20 seconds and 3 minutes, depending on the waterproofing needs.

By adding an organic dispersion to the B component (KÖSTER B+), the KÖSTER Injection Gel S4/B+ can achieve a particularly high flank adhesion to mineral substrates and enhanced elasticity, and reduce evaporation.



3.2 Characteristics/advantages

- Extremely low viscosity: Acrylic gels have an extremely low viscosity that allows for the deepest penetration into the injected body (ie. sand, silt, and even some clays). The lower the viscosity, the more pores will be filled.
- Do not react with water: Acrylic gels are the only injection material that takes water into its structure but does not react with it. It only binds it.
- Differentiated reaction profile: The transition between liquid and solid state displaying a "s" form reaction profile revolutionized the injection technique making a multiple-step injection possible.
- Exothermic reaction: The heat generated during the reaction process provides valuable information about the material distribution during the injection.
- Reliable pneumatic machine technique: With a pneumatic pump machine, maintenance is kept simple and work under adverse weather conditions is possible due to the lack of electronic components.
- Chemical composition: Safe application regarding chemical hazards. The material composition shows the least allergic reaction among injection materials, making it safer to work with.
- Corrosion behavior: Fully cured KÖSTER Injection Gels does not interact or promote corrosion of the reinforcement in concrete.
- Stainless drying: Cured material can be easily removed with simple tools without leaving marks or discoloration on the substrate.

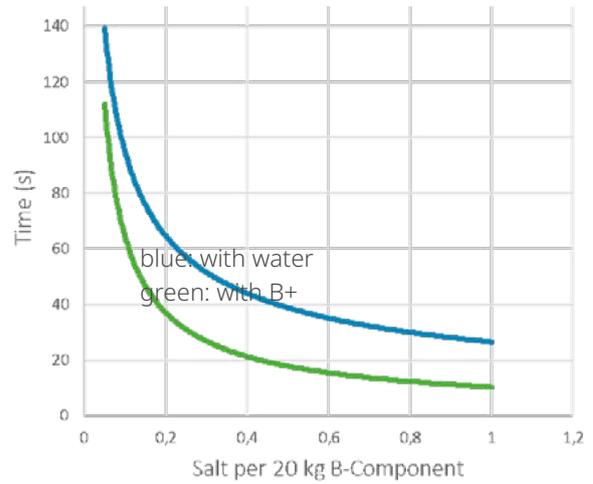
3.3 General properties of gels

Characteristics	KÖSTER Injection Gel S4	KÖSTER Injection Gel S4/B+
Adhesion capacity	> 0.04 MPa	> 0.04 MPa
Elongation capacity	70 %	70 %
Water tightness	D1 watertight at 2×10^5 Pa	D1
Mixture viscosity	Approx. 9 mPa.s	Approx. 9 mPa.s
Application Temperature	> +5 °C	> +5 °C
Corrosion behavior	No corrosive effect	No corrosive effect
Dangerous substance	NPD	NPD
Final curing time	30 – 180 sec.	20 – 150 sec.
Adhesion properties	Excellent adhesion properties	Excellent adhesion properties
Negative waterproofing	up to 2 bar	up to 2 bar
Suitable for drinking water applications	Test report	Test report
Ground water interaction	Certificate of approval Non- toxic	Certificate of approval Non- toxic
Isocyanate content	No	No
V.O.C	No	No
Durability	No failure during compressive tests	No failure during compressive tests
Injectability into dry medium	Class 0.1	Class 0.1
Injectability into non-dry medium	Class 0.1	Class 0.1
Adjustable reaction time	Yes, by changing the amount of salt.	Yes, by changing the amount of salt.
Components	Component A1 - 20 kg Component A2 - 1 kg Component B - 0.4 kg Component water - 21 kg	Component A1 - 20 kg Component A2 - 1 kg Component B - 0.4 kg Component(B+) - 18 kg
Recommended Pump	KÖSTER Acrylic Gel Pump	KÖSTER Acrylic Gel Pump
Fields of applications	- Vertical and horizontal curtain injection - External basement waterproofing with curtain injection - Masonry Tunnel construction - Tubbing tunnel construction	- Injection of expansion joints - Joint sealing in tunnel construction.

3.4 Adjusting the reaction time

3.4.1 According to the amount of the B component

By changing the amount of the B component (salt) used in the mixture, the reaction time of the KÖSTER Injection Gel S4 can be adjusted. By increasing the amount of salt, the reaction can be up until a final curing of approx. 30 seconds. By reducing the amount, the reaction can be adjusted for a final curing time of approx. 3 min. When mixing the B component with the organic dispersion KÖSTER B+, the reaction times are faster and range between approx. 20 seconds and 2.5 minutes.

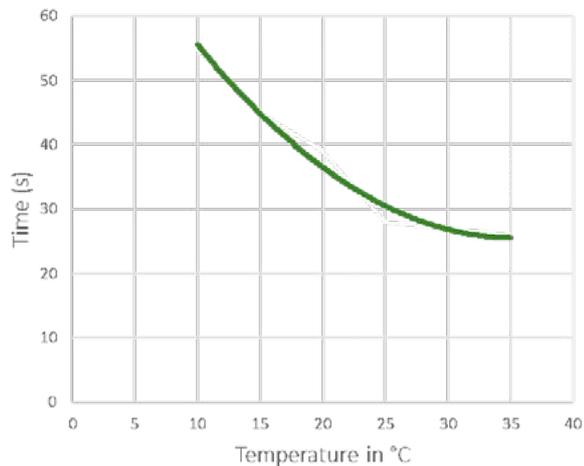


KÖSTER Injection Gel S4 & S4/B+

3.4.2 According to the temperature

The reaction time of the KÖSTER Injection Gels can also be influenced by temperature fluctuations. At high temperature, the reaction time is accelerated and at lower

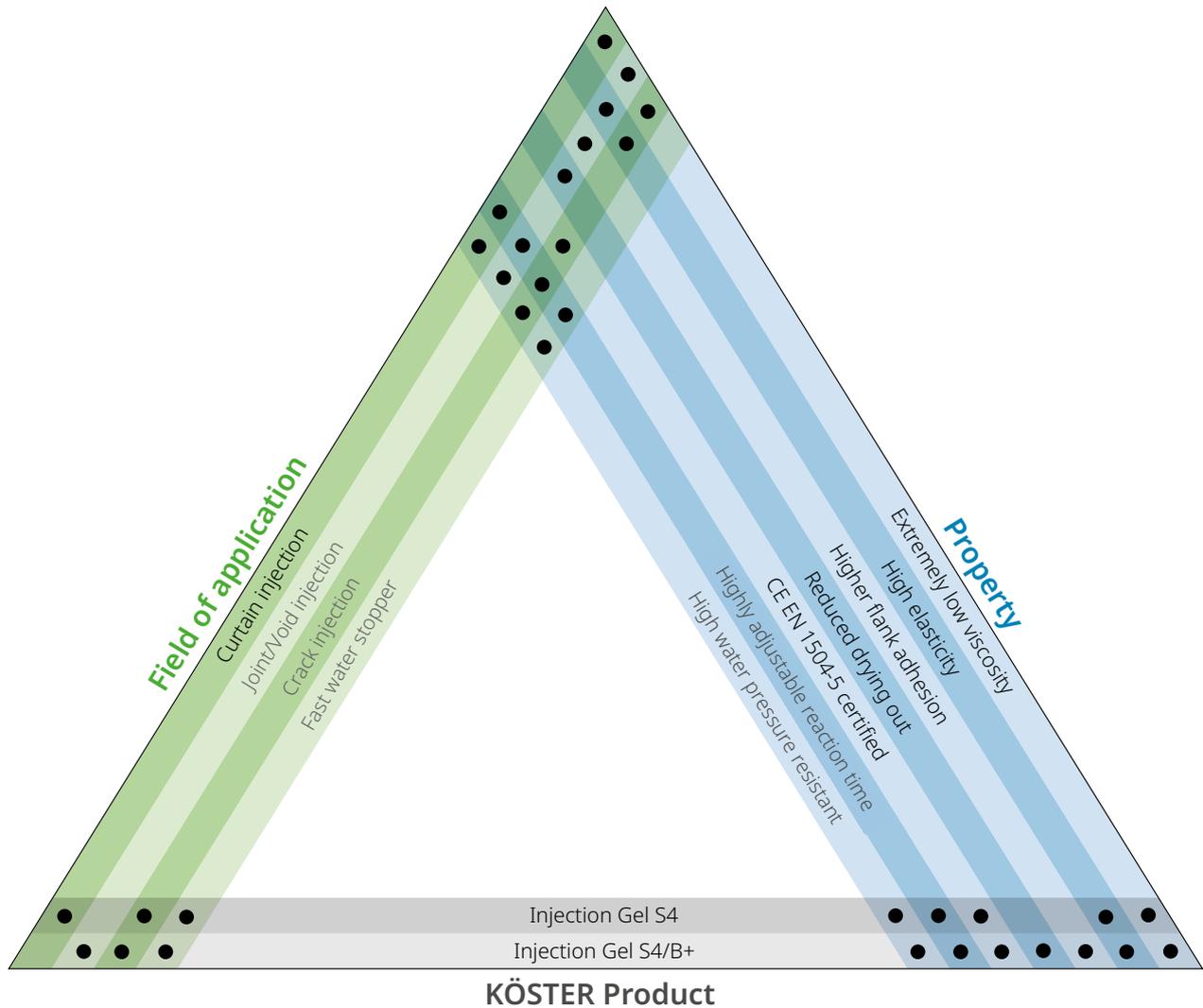
temperatures the reaction time is delayed. This condition applies to the material, ambient, and substrate temperature.



KÖSTER Injection Gel S4 & S4/B+

3.5 System selection guide for acrylic injection gels

The following matrix serves as a general guideline for the selection of the appropriate KÖSTER Injection Gel according to the application and the main properties required for the intended use.



Generally:

The KÖSTER Injection Gel S4 with the KÖSTER B+ component is a specially designed gel for the injection of joints, providing a higher flank adhesion, enhanced elasticity, and a reduced drying tendency when in contact with moving air such as wind. The injection of joints represents a fairly quick and minimally invasive way to repair failing waterproofing systems. By injecting the joint, it is not necessary to excavate underground parking garages or other underground building components. Moreover, since a low number of packers is sufficient in most cases, the drilling effort is reduced and time and costs are saved.

3.6 Main products and components

3.6.2 KÖSTER Injection Gel S4 & S4/ B+

Component A1: 20 kg

Component A2: 1 kg

Component B: 0.4 kg

Component B+: 18 kg

[See online](#)



3.7 Associated products



KÖSTER KB-Fix 5

[See online](#)



**KÖSTER KD 2
Blitz Powder**

[See online](#)



KÖSTER Repair Mortar

[See online](#)



KÖSTER Injection Barrier

[See online](#)



**KÖSTER Superpacker
10 mm x 115 mm CH**

The KÖSTER Superpacker is particularly suitable for pressure injections. The KÖSTER Superpacker provides a very high contact pressure to the borehole due to the cone-shaped center of the tightening mechanism. Four fins and two ridges on the rubber gasket prevent rotation during tightening and facilitate the optimal fixation of the packer in the borehole. It has a firmly mounted cone-head fitting for pressure injection and is galvanised.

[See online](#)



**KÖSTER Packer
13 mm x 115 mm CH**

The KÖSTER Packer is particularly suitable for pressure injections. The arrangement of the split packer grommets result in excellent contact pressure to the borehole. The surface of the rubber grommet easily digs into the borehole, adapts to the borehole wall, and thus increases its tightness. It has a firmly mounted cone-head fitting for pressure injection and is galvanised.

[See online](#)



**KÖSTER One-Day-Site Packer
13 mm x 120 mm CH**

The screw packer for pressure injection has a firmly mounted cone-head fitting and two non-return valves. Immediately after injecting, that part of the port which protrudes from the wall can be unscrewed and removed. The central part of the port stays in the wall sealing the borehole so that no injection material can flow out of the borehole even under high pressure. The borehole can then be closed immediately after injection.

[See online](#)



**KÖSTER One-Day-Site Packer
13 mm x 120 mm PH**

The screw packer for pressure injection has a firmly mounted pan-head fitting and two non-return valves. Immediately after injecting, that part of the port which protrudes from the wall can be unscrewed and removed. The central part of the port stays in the wall sealing the borehole so that no injection material can flow out of the borehole even under high pressure. The borehole can then be closed immediately after injection.

[See online](#)



**KÖSTER One-Day-Site Packer
13 mm x 90 mm PH**

The screw packer for pressure injection has a firmly mounted pan-head fitting and two non-return valves. Immediately after injecting, that part of the port which protrudes from the wall can be unscrewed and removed. The central part of the port stays in the wall sealing the borehole so that no injection material can flow out of the borehole even under high pressure. The borehole can then be closed immediately after injection.

[See online](#)



**KÖSTER One-Day-Site Packer
13 mm x 90 mm CH**

The screw packer for pressure injection has a firmly mounted cone-head fitting and two non-return valves. Immediately after injecting, that part of the port which protrudes from the wall can be unscrewed and removed. The central part of the port stays in the wall sealing the borehole so that no injection material can flow out of the borehole even under high pressure. The borehole can then be closed immediately after injection..

[See online](#)



KÖSTER Gel Packer (Base)

Impact packers for gel injection using a pan-head fitting and non-return valves. With connection threads for an extension pipe. 18 mm x 115 mm.

[See online](#)



**KÖSTER Gel Packer extension pipe
800 mm**

Extension pipe for KÖSTER Gel Packers. Length: 800 mm

[See online](#)



KÖSTER Gel Packer (End Piece)

Patented end piece for gel packers with four sideways facing outlets for curtain injection (German patent 599 10 808.8, European patent No. 0 980 935). With connection threads for the KÖSTER Gel Packer Extension Pipe.

[See online](#)



KÖSTER Grip Head

with 4 jaws for cone-head fittings.

[See online](#)



KÖSTER Cutting Device for Gel Packers

Cutting device for reducing the length of KÖSTER Gel Packer extension pipes as well as KÖSTER capillary rods.

[See online](#)

3.8 Associated literature

- [Technical Data Sheet](#)
- [Product Declaration of Performance Injection Gel S4](#)
- [Method Statement KÖSTER Acrylic Gels](#)
- [Fields of application for KÖSTER Injection Packers](#)
- [KÖSTER Injection matrix: Acrylic Gels](#)

4 Tools and Equipment

4.1 Tools



Measuring tool



Trowel



Pencil



Tools for packers



Ring wrench



Mixing vessel

4.2 Equipment



Drill



KÖSTER Drill Hole Cleaner



Single Paddle Mixer



Air compressor

4.2.1 KÖSTER Gel pump

Pneumatic pump made of stainless steel for the application of KÖSTER Injection Gel G4 & S4. Mixing ratio 1: 1

Capacity: Max. 10 liters. per minute. Working pressure: 15 - 220 bar.



Technical data of the machine

Technical Data	KÖSTER Acrylic Gel Pump
Maximum pressure	220 bar
Transmission Ratio	25 : 1
Maximum inlet pressure	8 bars
Material hose length	10 m
Max. material hose length	50 m
Max. delivery rate	10 l/min.
Output per piston cycle (double stroke)	85 ml
Mixing and output ratio A : B	1 : 1
Weight	45 kg

Air compressor requirements

Optimal air output	> 450 l/min.
Joint injection	> 375 l/min.

Important consideration when using the pump

Working with high pressure requires extra security measures. Do not change the machine's design or function. Check all connections before use.

Storing the pump

In winter the cylinders must be filled with oil if the pump is exposed to frost even for one night. This keeps residual rinsing water from freezing and damaging the seals.

4.3 Cleaning

Clean the pump immediately after use with clean water. For this, the three intake hoses are placed in the three clean buckets. The buckets are filled with clean water and pumped through the machine, and the pump is rinsed for approximately 30 seconds. > 250 l/min. Wear safety gloves and goggles when using. Observe all governmental, state, and local safety regulations when processing the material. The protective caps on the

uptake hoses should always be used when the pump is not in use. Do not contaminate the uptake screens with sand. Please consult the KÖSTER Acrylic Gel Pump manual for further instructions concerning setup, functioning, troubleshooting, and cleaning of the pump. A video for a QuickStart with the pump is also available online.

5 Environmental, health and safety

5.1 Personal Protection Equipment (PPE)

The following is a short overview of Personal Protective Equipment and serves only as a guideline. Contractors and Employers are responsible for meeting the occu-

pational safety guidelines in their countries, states, and localities.



Eye protection

Employers must be sure that their employees wear appropriate eye and face protection and that the selected form of protection is appropriate to the work being performed and properly fits each worker exposed to the hazard.

Head protection

Employers must ensure that their employees wear head protection if any of the following apply: Objects might fall from above and strike them on the head; they might bump their heads against fixed objects, such as exposed pipes or beams; or there is a possibility of accidental head contact with electrical hazards.

Foot and Leg Protection

Employees who face possible foot or leg injuries from falling or rolling objects or from crushing or penetrating materials should wear protective footwear.

Hand Protection

When selecting gloves to protect against exposure hazards, always check with the manufacturer or review the manufacturer's product literature to determine the gloves' effectiveness against specific workplace chemicals and conditions. Gloves commonly used are: Coated fabric gloves and Chemical - and Liquid - Resistant Gloves.

Hearing protection

Suitable hearing protection must be provided for the job environment.

5.2 Material safety & First Aid

Every KÖSTER product is labeled with specific information and symbols as to the related dangers. Please consult the respective Material Safety Data Sheet for specifics.

Description of first aid measures

Component A1

First aider: Pay attention to self-protection!

After inhalation: Provide fresh air.

After contact with skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse.

After contact with eyes: Rinse with water with the eyelids open for sufficient length of time, then consult an ophthalmologist immediately.

After ingestion: Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water.

Component A2

First aider: Pay attention to self-protection!

After inhalation: Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

After contact with skin: Wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes: Rinse with water with the eyelids open for sufficient length of time, then consult an ophthalmologist immediately.

After ingestion: Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. Medical treatment necessary.

5.3 Waste disposal

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

You can access the Material Safety Data Sheets by scanning the QR code on the packaging.

Component B

General information: Move victim out of danger zone.

First aider: Pay attention to self-protection!

After inhalation: Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

After contact with skin: After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion: Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Medical treatment necessary.

Component B+:

First aider: Pay attention to self-protection! If unconscious but breathing normally, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Due to its pH value, irritation of the skin and eyes cannot be ruled out.

After inhalation: If inhaled remove person to fresh air and keep comfortable for breathing. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin: Wash immediately with plenty of water. Change contaminated clothing. In case of skin irritation, seek medical treatment.

After contact with eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion: Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Call a physician in any case!

Contaminated packaging

Completely emptied packages can be recycled.

6 Fields of application for KÖSTER Injection Gel S4 and S4/B+

6.1 An example of joint sealing in tunnel construction



- | | |
|------------------------------------|----------------------------|
| 1. Gel pump: | KÖSTER Acrylic Gel Pump |
| 2. Special rubber sealing profiles | |
| 3. Injection needle | |
| 4. Joint sealant | KÖSTER Injection Gel S4/B+ |
| 5. Joint protection | KÖSTER MS Joint Sealant |

Injection Process:

Tunnel construction presents complex challenges for waterproofing systems. Despite adherence to the highest application standards, unexpected conditions or extraordinary events can lead to water ingress. Such leaks typically occur at the joints between tubbing segments and, if left untreated, may compromise the structural integrity of the tunnel.

KÖSTER Injection Gel S4, in combination with KÖSTER B+ component, is a specially formulated acrylic gel developed for joint injection applications. It offers exceptional elasticity, enhanced adhesion to joint flanks, and a reduced tendency to dry out when exposed to moving air currents. The gels adjustable reaction time allows for

precise adaptation to on-site conditions.

Injection is carried out using injection needles that pass through a special rubber sealing system placed within the joint. To define the injection area and prevent material loss into the drainage system or behind the joint, a backing rod is installed. Upon completion of the injection process, the rubber sealing system can be removed, and the injected joint is protected with KÖSTER MS Joint Sealant—a highly elastic sealing compound based on advanced MS Polymer technology.

This system ensures durable and efficient remediation of leaking joints in tunnel structures, preventing long-term damage and maintaining structural performance.

6.2 An example of the injection of expansion joints



- | | |
|-------------------------|---|
| 1. Injection packer: | KÖSTER Packer 13 mm x 115 mm CH
KÖSTER Superpacker 10 mm x 115 mm CH |
| 2. Joint waterproofing: | KÖSTER Injection Gel S4/B+ |

Injection Process:

Joint injection offers a fast and minimally invasive solution for repairing compromised waterproofing systems. This method is particularly effective for concealed expansion joints, such as those located above support beams in underground parking structures. In such applications, only a small number of injection packers are typically required. Their placement is carefully planned to avoid penetrating existing water stops—especially internal or external sealing tapes—which must remain intact to preserve the structures waterproofing integrity. For overhead expansion joints, boreholes should ideally be drilled into the upper third of the joint. In contrast, for floor-level expansion joints, the lower third is preferred.

KÖSTER Superpackers are then installed into the prepared boreholes. When dealing with overhead joints, it may be necessary to apply a polymer, cementitious, or mechanical pre-sealing barrier to prevent material loss during injection.

By using the highly elastic acrylic gel KÖSTER Injection Gel S4/B+ for injection, the need for extensive excavation, such as dismantling garages or other structures, is eliminated. Furthermore, the limited number of required packers significantly reduces drilling effort, resulting in considerable time and cost savings.

7 Mixing of components

7.1 Preparing the KÖSTER injection Gel S4/B+

7.1.1 Prepare component A:

The A2 component is added to the A1 component canister. Afterward, both components are thoroughly mixed through rocking/seesawing the canister (mixing time is 3 minutes).



Component A1 + A2

7.1.2 Prepare component B:

Mixing the KÖSTER Injection Gel S4 with KÖSTER B+ is highly recommended for the elastic sealing of dilation joints. The B component is added to the polymer dispersion KÖSTER B+ and mixed through rocking/seesawing the components (mixing time is approx. 3 min.). The use of the polymer dispersion provides a gel with higher flank adhesion, elongation, and less tendency to dry out.



Component B + KÖSTER B+

7.2 KÖSTER recommended mixing ratios for the KÖSTER injection Gel S4 & S4/B+

Standard mixture

Component A (Mixture 1)		Component B (Mixture 2)		Reaction time in seconds at +20 °C
A1	A2	B	water	
20 kg	1 kg	0.4 kg	21 kg	70 sec.
A1	A2	B	B+	
20 kg	1 kg	0.4 kg	18 kg	30 sec.



Slow mixture

Component A (Mixture 1)		Component B (Mixture 2)		Reaction time in seconds at +20 °C
A1	A2	B	water	
20 kg	1 kg	0.05 kg	21 kg	180 sec.
A1	A2	B	B+	
20 kg	1 kg	0.05 kg	18 kg	150 sec.



Note: slower mixtures are not recommended to be adjusted with the amount of salt due to the danger that the reaction does not even start under real conditions due to impurities in the injection area.

Fast mixture

(2.5 containers of the B-salt)

Component A (Mixture 1)		Component B (Mixture 2)		Reaction time in seconds at +20 °C
A1	A2	B	water	
20 kg	1 kg	1 kg	21 kg	30 sec.
A1	A2	B	B+	
20 kg	1 kg	1 kg	18 kg	20 sec.



7.3 KÖSTER Acrylic Gel Pump set up

To prepare the KÖSTER Acrylic Gel Pump for injection, place the mixed component A next to the A side of the pump, and the B component in the green container next to the B side. Also place a clean container near the B1 for flushing the pump. The hose for this pump does not have a transparent hose attached to it. Fill the container with clean water. Insert the suction hose of the A side of the pump into the A-component. Insert the suction hose of the B side of the pump into the B-component. Make sure that the suction fitting rests on the bottom. INTERCHANGING THE HOSES MUST BE AVOIDED! Place

the single suction hose, labeled "S" inside the clean container filled with water. This suction hose is used for rinsing the pump. Before injection begins, open the valves below the two pressure gauges (A & B side) to vent the pump, and remove air entrapment from the intake hoses. Pump material into a clean vessel such as a small cup to test the equipment and verify the actual reaction times. Consult the operating manual and the quick start video of the pump for further instructions.

8 Injection process KÖSTER Gel S4/B+

8.1 Joint injection

The KÖSTER Injection Gel S4 with the KÖSTER B+ component is a specially designed gel for the injection of joints, providing a higher flank adhesion, enhanced elasticity, and a reduced drying tendency when in contact with moving air such as wind.

The injection of joints represents a fairly quick and minimally invasive way to repair failing waterproofing systems. By injecting the joint, it is not necessary to excavate underground parking garages or other structures. Moreover, since a low number of packers is sufficient in most cases, the drilling effort is reduced, and time and costs are saved. Joint injection must always be adapted to the circumstances. Standardized cases cannot be described coherently due to the large number of different joint structures. In general, the number of packers can often be kept relatively low in the area of joint injection since the gel can spread well within the joint. For overhead work on horizontal joints (e.g. in multi-story car parks), it is required to temporarily block the joint with, e.g. mortar, backing road, foam, etc., to prevent the gel from leaking out of the joint, and then use the KÖSTER Injection Gel S4 with the KÖSTER B+ component added to fill the joint. Finally, the joint is mechanically protected with a joint sealant like KÖSTER MS Joint Sealant, KÖSTER Joint Sealant FS-V/H, or KÖSTER Joint Tape 20/30.

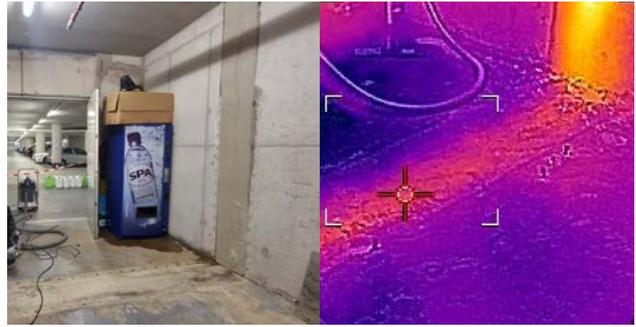
For further information please contact the Technical Department at KÖSTER Headquarters.



9 Quality control

Infrared technique

The reaction of the acrylic gels is an exothermic reaction. Heat is released in a significant amount. The injection progress can be followed by means of a thermal imaging camera, showing the movement of the material inside voids or joints.



10 General notes

10.1 Consumption rate

Depends upon the fields of application and volume of voids filled.

Joint/void injection: Length x Width x Height x (Safety factor: approx. 1.5 – 2)

10.2 Packaging



A1 component:
20 kg jerrycan



A2 component:
1 kg bottle



B component:
0.4 kg bottle



KÖSTER B+:
18 kg jerrycan

10.3 Material storage

- Store the material in a cool and frost-free environment.
- In originally sealed containers, the material can be stored for a minimum of 6 months.
- Protect the material from direct sunlight.

10.4 Important considerations

- Always ensure a source of clean and continuous water or buckets with clean water.
 - Use scaffolding (if the injection area is inaccessible).
 - Use protection systems, if the work is in a public place.
 - Conduct a safety training if the site is in a hazardous classified area (e.g. in tunnels).
 - Work team to help and assist (at least 3 persons for injection – Ports, Pump & Assist).
 - Do not apply the injection in a temperature less than +5 °C.
- Since the activated A-component is a highly reactive mixture, particular care must be taken before placing the suction hoses, ensuring that there are no residues of the starter salt caused by splashes or contact contamination. Premature reactions could be the result.
 - It is recommended to rinse the hose on the A and B sides with the suction caps thoroughly with clear water before each use.

11 Certifications

- Testing report of Insitute für Material Testing Serbia, Br./ No. UIV 128/19, Resistance against pressurized water after storage under normal conditions and after 7d storage in 0,1N NaOH and 0,1N HCl
 - Test report PB 5.1/19-090-1
Elution behavior with 1.0 M% B+
 - Test report PB 5.1/19-090-2
Elution behavior with 0.2 M% B+
 - Test report from IHG Zagreb, Croatia, No. 72530-PS / 002/19, from May 15, 2020, initial test according to EN 1504-5
- General building approval, Z-101.29-52, KÖSTER Injection Gel S4 as Gel curtain injection, valid thru 5th Aug. 2025
 - Hygiene Institute Gelsenkirchen, Drinking Water Hygiene Testing according to DIN EN 12873-1:2014-09 and DIN EN 1420:2016-05; Test Report K-388707-24-PI/st dated 04.06.2024
 - safe.CERT - DW/DE - 500322-2473 (ORG-P3-SEAL), on the drinking water hygienic suitability of KÖSTER Injection Gel S4 for cold (+23 °C) and warm (+60 °C) water, 31.07.2024

12 Declaration of performance

The declaration of performance for the KÖSTER injection Gels can be found under: www.koester.eu

[KÖSTER Injection Gel S4](#) 

13 Legal disclaimer

This method statement reflects general cases with standard parameters. It is not suitable as a step-by-step guide for all and each waterproofing projects as the conditions on site at the moment of the application cannot be foreseen. It is solely the applicator's responsibility to

decide on the actual procedure considering the specific situation on the construction site. In any case, KÖSTER'S Terms of business are valid and can be viewed under www.koester.eu 