MS-J-FS H/V-A-06.25

Method Statement

Joint sealing on mineral and metal surfaces with KÖSTER Joint Sealant FS-H/FS-V

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KÖSTER
Waterproofing Systems

1 General information

1.1 Scope

This method statement is intended for use by developers, contractors and applicators as a general guideline for the application of the joint sealant system KÖSTER Joint Sealantl FS H/V.
While this document describes the tools, equipment, materials and step by step process for preparing and installing the joint sealant, it must be used and referred to, in combination with all other relevant technical information available for the product and its components.

1.2 Manufacturer

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KÖSTER
Waterproofing Systems

1.3 Definitions

Backing rod:
A backing rod likely refers to a backer rod, which is a cylindrical foam material used in construction and sealing applications such as KÖSTER Round cord.

Polysulphide:
Polysulphides are a group of chemical compounds containing chains of sulphur atoms. The properties of the cured polysulphide compounds are: good weathering stability, high resistance to fuels and many other chemicals, low gas permeability, especially noble gases and a certain degree of relaxation in the case of bonds or seals under mechanical stress.

Elasticity:
This is the ability of a material to deform under an external force and return to its original shape when this influence is removed.

Construction joint:
A construction joint is formed when new concrete is poured against already set concrete. This joint is intentionally placed to divide and facilitate the construction process. Construction joints are typically found in large foundation slabs, wall/floor connections and columns, among others.

Cold joint:
Is a weak point that forms in concrete or masonry construction when a previous layer of material has begun to set before the next layer is poured or placed. This can results in a lack of proper bonding between the two layers.

Movement joint:
Is a designed gap or space in a structure or material that allows for controlled movement due to various factors like thermal expansion and contraction, shrinkage, or settlement.

Settlement joint:
Is a type of movement joint designed to allow independent vertical movement between two adjacent sections of a structure. It is typically used to accommodate differential settlement caused by uneven loads, soil conditions, or structural characteristics.

Positive side waterproofing:
Positive Side Waterproofing means that the waterproofing layer is applied to the side of the construction element which is in direct contact to the water.

2 System description

2.1 System features

Elastic, stable joint sealant based on polysulphide. When cured, KÖSTER Joint Filler FS-V/FS-H is a rubber-elastic sealant with good weather resistance and high mechanical strength, good resistance to water, seawater, salt solutions, petrol and mineral oils, rot and root resistant and very good resilience.

KÖSTER Joint Filler FS-V or FS-H is a permanently elastic sealant in civil engineering, crack sealing in basements, sealing of building foundations, joints and sewage treatment and silo plants, garages, tunnels, roads, bridges, parking decks, airfields and other traffic routes, etc.

KÖSTER Joint Filler FS-H is suitable for filling horizontal joints. KÖSTER FS -V is also used for vertical joints.

2.2 Characteristics/Advantages

- A permanently elastic sealant in civil engineering
- Crack sealing in basements
- Sealing of building foundations
- Joints and sewage treatment and silo plants, garages, tunnels, roads, bridges, parking decks, airfields and other traffic routes, etc.

2.3 Main products and components

J 231
KÖSTER Joint Sealant FS-V black
Formstable joint sealant with excellent resistance against mechanical stresses and a high resistance against water, sea water, salt solutions, petroleum and mineral oils. It is rot and root resistant. The rubber-elastic material based on polysulfides is 2-component, elastic and stable.

See online

J 232
KÖSTER Joint Sealant FS-H black
Self leveling joint sealant with excellent resistance against mechanical stresses and a high resistance against water, sea water, salt solutions, petroleum and mineral oils. It is rot and root resistant. The rubbery-elastic material based on polysulfides is 2-component, elastic and pourable.

See online

J 233
KÖSTER Joint Sealant FS-V grey
Formstable joint sealant with excellent resistance against mechanical stresses and a high resistance against water, sea water, salt solutions, petroleum, and mineral oils. It is rot and root resistant. The rubber-elastic material based on polysulfides is 2-component, elastic and stable.

See online

J 234
KÖSTER Joint Sealant FS-H grey
Self Levelling joint sealant with excellent resistance against mechanical stresses and a high resistance against water, sea water, salt solutions, petroleum and mineral oils. It is rot and root resistant. The rubbery-elastic material based on polysulfides is 2-component, elastic, and pourable.

See online

J 139 200
KÖSTER FS Primer 2C
KÖSTER FS Primer 2K is a fast-drying, colorless, solvent-free, 2-component adhesion promoter and consolidator for joint edges for subsequent processing with KÖSTER Joint Filler FS-H and FS-V.

Consumption: approx. 150 - 250 g/m², corresponding to 10 - 20 g/running meter of joint

See online

2.4 Associated products

KÖSTER Universal Cleaner

See online

KÖSTER Backing rod

Duct tape

2.5 Associated literature

- Technical Data Sheet Joint Sealant FS-H (black)
- Technical Data Sheet Joint Sealant FS-H (grey)
- Technical Data Sheet Joint Sealant FS-V (grey)
- Technical Data Sheet Joint Sealant FS-V (black)
- System Brochure Waterproofing of Construction Joints
- Product Declaration of Performance Joint Sealant FS-V (black)

3 Tools, equipment, and cleaning

3.1 Tools

KÖSTER Cleaning Brush

KÖSTER Spatula (width 20 mm and 50 mm)

KÖSTER Honing spatula

KÖSTER Glättmittel

3.2 Equipment

KÖSTER Backing rod

Trowel

Masking tape

3.3 Cleaning

Clean tools and any residues with a cloth or paper towels, oily residue can be removed with KÖSTER Universal Cleaner.

4 Environmental, health and safety

4.1 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 occupational 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.

4.2 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.

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:
After contact with eyes: Rinse immediately carefully and thoroughly with eye-bath or water.

After ingestion:
Rinse mouth immediately and drink 1 glass of water. Do NOT induce vomiting.

4.3 Waste disposal

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

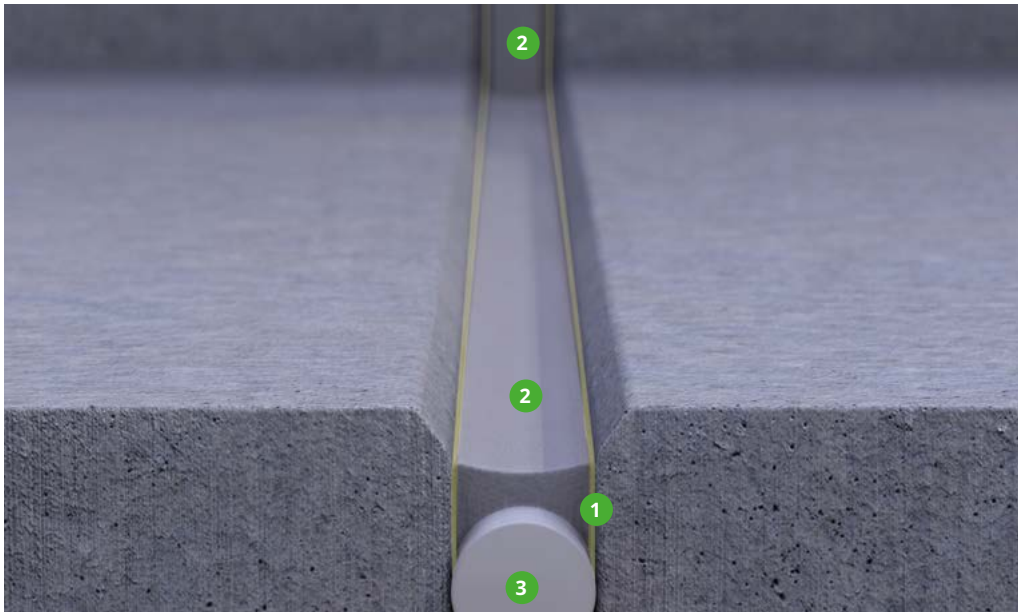
Contaminated packaging
Wash with plenty of water. Completely emptied packages can be recycled.

5 Fields of application

5.1 General fields of application

Movement joints must be waterproofed durably, elastically, form stable, and UV resistant. A joint waterproofing must allow for movement in the construction without causing damage to the construction itself. Movement joints up to a width of 35 mm can be waterproofed with KÖSTER Joint Sealant FS. For wider joints such as expansion and dilation joints KÖSTER Joint Tapes are used.

5.2 Example: Sealing a permanently elastic component joint



1 Primer
KÖSTER FS Primer 2C

2 Vertical Joints
KÖSTER Joint Sealant FS-V

3 Horizontal Joints
KÖSTER Joint Sealant FS-H

Installation Process

A commonly used method for waterproofing joints is to fill them with an elastic material. KÖSTER Joint Sealant FS is a rubbery-elastic sealing compound with high chemical resistance and is therefore the ideal material to waterproof horizontal joints in heavy construction, in foundations, waste water treatment plants, garages, tunnels, etc.

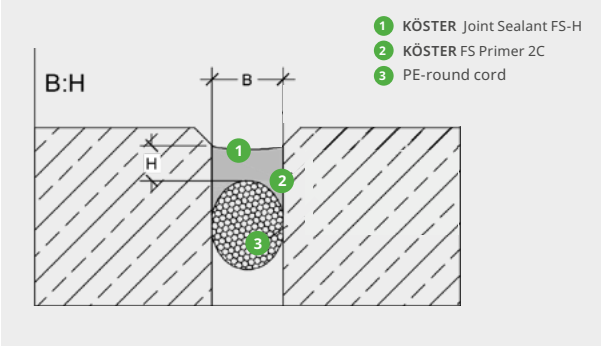
KÖSTER Joint Sealant FS is available in the colors grey and black and in the variant's "H" and "V".

KÖSTER Joint Sealant FS-H is a self-leveling material for sealing horizontal joints, KÖSTER Joint Sealant FS-V is a stiffer material for vertical joints.

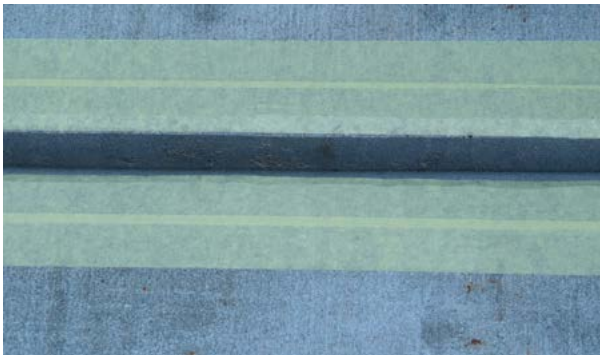
Preparing the joint to be sealed

The joint flanks are beveled before the application of the Joint Sealant. The bevel must be at least 10 mm wide and at a 45° angle.

To avoid damage to the Joint Sealant caused by movement in multiple directions, the Joint Sealant should only bond to two joint flanks. For this reason a backing is installed for example with quartz sand or a foam PE backing rod. This eliminates the possibility of adhesion to three flanks.



The Joint Sealant should be installed so that the ratio of joint height: width corresponds to the norm requirement. A detailed table is provided in the Technical Data Sheet.



The sides of the joint are taped to achieve a clean and orderly application.

6 Application/Installation instructions

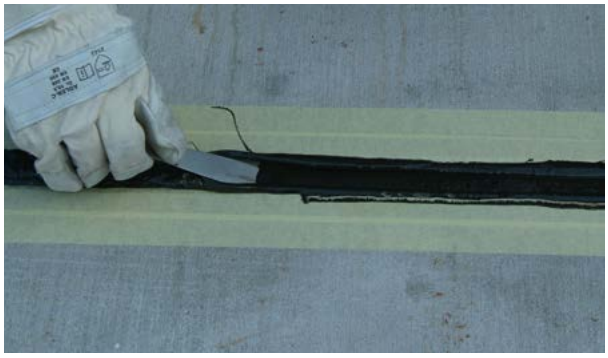
6.1 Preparing KÖSTER Joint Sealant FS H/FS V

Mix both components thoroughly using a slow speed mixer until a homogeneous consistency is reached, (at least 3 minutes). The joint is filled at the earliest 4 hours after priming with a caulking gun, (smoothing) trowel, spatula or straight edge. Observe the DIN 18540.

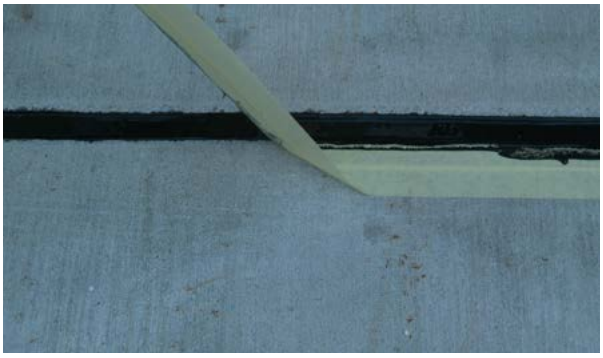
6.2 Applying KÖSTER Joint Sealant FS-H and/or FS-V

Substrates must be primed with KÖSTER FS Primer 2C

After a waiting time of approx. 4 hours, subsequent work can be carried out with KÖSTER Joint Sealant FS-H and/or FS-V.



The Joint Sealant is smoothed, for example with a rounded spatula.



The tape should be removed before the Joint Sealant has hardened.

KÖSTER Joint Sealant FS in its cured state.

7 Consumption rates

Approx. 1.6 kg/l void

- Consumption quantities in joint widths:

Joint width (mm)	10	15	20	25	30	35
Joint thickness (mm)	8	10	12	15	18	20
Deviation allowed (mm)	± 2	± 2	± 2	± 3	± 3	± 4
Distance of joints allowed (m)	2-4	2-6	4-7	5-8	6-9	7-10
Consumption (kg/m)	0,13	0,24	0,38	0,60	0,72	1.12

8 General notes

8.1 Material storage

Store the material dry and frost free. In originally sealed packages it can be stored for a minimum of 12 months.

8.2 Packaging

- 4 kg in combipackage (J 231 004)

9 Certifications

The material was then tested at E100 and E140, (Elongation 100% and 140%) according to DIN EN ISO 8340:2005 No cracks or debonding No adhesion failure No cohesion failure.
Chemical resistance tested with test fuels according to ZTV Fug-StB 01: - Test liquid “Bf”: 70 vol.-% isooctane with 30 vol.-% toluene - Test liquid “Ba”: 100 vol.-% FAM Test liquid DIN 51604-A - Deicing agent “Be”: 70 wt.% propylene glycol, 25 wt.% water, 5 wt.% urea.

10 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 project 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.koster.eu