

TECHNICAL DATA SHEET

2-component solvent-free polyurethane based injection system. Reacts in a rigid foam in combination with water and a rigid seal in absence of water.

Designed for stopping water under pressure.



I. Applications

TEKINJECT PU 2C HARD is an injection system used for sealing extremely large water intrusions. A fast and strong reaction guarantees sealing against under extremely high flows and high pressure (> 104 bar) in concrete, rocks and dams.

II. Properties

- TEKINJECT PU 2C HARD is a 2-component, polyurethane based injection system that will always react:
 - with water => hard foam
 - without water => hard seal
- Good chemical resistance against many acids, bases, solvents, and fuels (check chemical resistance list)
- No shrinkage after curing
- Free expansion: up to 18 times
- Non-toxic: does not contain solvents.
- Non-flammable.
- Excellent adhesion to mineral building materials such as concrete, cement and brick.
- Various accelerators can guarantee a perfect sealing in different application conditions:
 - TEKINJECT PU 2C ACCELERATOR: Faster reaction
 - TEKINJECT PU 2C ACCELERATOR THIX: More thixotropic reaction
 - TEKINJECT PU 2C ACCELERATOR FOAM: More foaming capabilities

III. Technical Data

- Typical values:

TEKINJECT PU 2C HARD – comp A:

Color	Honey
Viscosity (20°C)	290 mPa.s
Density (20°C)	Ca 1,025 g/cm ³
Storage temperature	Between 10 °C and 30 °C

TEKINJECT PU 2C HARD – comp B

Color	Dark Brown
Viscosity (20°C)	200 mPa.s
Density (20°C)	Ca 1,24 g/cm ³
Storage temperature	Between 10 °C and 30 °C

TEKINJECT PU 2C HARD –Mixture:

Color	Brown
Viscosity (20°C)	110 mPa.s
Density (20°C)	1,09 g/cm ³
Min. application temp	5 °C (lower is possible with adapted techniques)
Expansion Volume	Up to 18 times in volume
Adhesive strength after 15'	2,1 MPa
Tensile strength	42 MPa
Compressive Strength	70 MPa
E-modulus	3000 MPa
Shore Hardness	D 80

- Reaction times:

	With Water	Without water
20°C	Start: 50 sec End: 2 min 20 sec	Start: 25 sec End: 40 sec
Foaming	Up to 18 times in volume	Up to 1-2 times in volume

IV. Processing

1. Resin preparation

This resin can be injected with a 2-component pump. Depending on the selected procedure (check 3. Injection below), a mixture needs to be created or the 2 components are used separately.

Depending on the ambient and structure temperature, the reaction times will vary. The higher the temperature, the quicker the reaction time.

Secondly the amount of water present in the structure will also influence the reaction time of the mixture. For quicker reaction times or special application conditions, we recommend using the TEKINJECT PU 2C ACCELERATORS.

2. Substrate preparation

Check the quality of the substrate, injection means increased pressure on the substrate, so the substrate needs to be of sufficient strength.

Determine the packers according to the injection technique, substrate dimensions and type of pump. According to the selected packer and injection technique, the holes in the substrate need to be drilled. Tighten the packers well to make sure the injected pressure is distributed.

The distance and pattern of the packers/bore holes depend on the substrate structure and the injection technique. Please consult your TEKINJECT contact person for more information or the specific application manuals of the injection techniques.

3. Injection

Inject the resin by means of a 2-component pump. The components TEKINJECT PU 2C HARD - A and TEKINJECT PU 2C HARD – B need to be injected in a volume ratio of 1:1.

The selected injection pressure is as low as possible. Start at the lowest point and increase until you see the resin flowing. Injection with low pressure ensures a deep penetration of the resin and complete sealing of the structure.

Start injecting at the lowest point in case of a vertical application and at the widest point for a horizontal application. Open the valve of the gun, hold the pressure, and inject until the resin appears in the next packer. Stop pumping and proceed to the next packers. To make sure the material is penetrated in the full structure, opening and closing the valve and letting the material flow, can be advised. Continue the process until the whole structure is sealed.

4. Cleaning

If the components are liquid, the pump can be cleaned with TEKINJECT PU CLEANER. Hence, we recommend, every time there is a stop of more than 5 minutes, and at the end of the injection works to flush the pumps with TEKINJECT PU CLEANER, which is a cleaner with high flash point.

Hardened material needs to be cleaned with PU dissolver.

Packers can be removed, and the boreholes can be sealed with a fast-setting mortar.

For more details see the application manual of the TEKINJECT PU 2C HARD.

V. Packaging

TEKINJECT PU 2C – A component: 21,3 kg plastic jerry can
213 metal drums
1065 kg IBC

TEKINJECT PU 2C – B component: 25 kg plastic jerry can
250 metal drums
1250 kg IBC

VI. Shelf life

24 months after production date in the original, unopened and undamaged packaging, according to the storage instructions of each component (see technical data of this sheet). If the following recommendations are not followed, the shelf life of the material cannot be guaranteed.

VII. Precautions and Safety Recommendations

- Wear safety and protection materials when handling this material (glasses, gloves, protective clothing).
- In the event of contact with the eyes: rinse thoroughly with clean water and consult a doctor.
- In the event of skin contact: rinse with water thoroughly.
- Mix residues of the TEKINJECT PU 2C FLEX with sand and dispose of in accordance with local regulations.
- The resin can react with water or atmospheric humidity to form CO₂ gas. This can build up pressure in a closed package or container that has already been opened.
- Consult the Material Data Safety Sheet for more information on health and safety regulations.

VIII. Company Details

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