



TECHNICAL DATA SHEET

1-component (+CAT), low viscous, solvent free polyurethane based injection system. Reacts in a semi-rigid, closed cell foam in combination with water.

Designed for crack sealing and stopping water under pressure.

I. Applications

NUN X is an extremely versatile injection system that can be used for the injection of very fine cracks, and as well for extremely large water intrusions. Variable reaction time ensures sealing and penetrations in a variable application field:

- Due to its low viscosity, it can be used to seal very fine cracks (from 0,2 mm to several cm)
- Sealing of water under extremely high flows and high pressure (> 104 bar)
- Injection of injectable hoses
- Soil injections and creation of horizontal and vertical barriers

II. Properties

- NUN X is a 1-component (+cat), polyurethane based injection system that needs water to react and reacts into a semi-rigid, hydrophobic grout that reacts in a closed cell structure.
- Good chemical resistance against many acids, bases, solvents, and fuels (check chemical resistance list)
- No shrinkage after curing
- Free expansion: up to 30 times
- Non-toxic: does not contain solvents.
- Non-flammable.
- Excellent adhesion to mineral building materials such as concrete, cement and brick.
- Variable reaction time by adjusting the NUN X CAT.



III. Technical Data

- Typical values:

NUN X:

Color	Brown
Viscosity (20°C)	120 mPa.s
Density (20°C)	1,05 – 1,1 g/cm ³
Flash point	>148 °C
Storage temperature	Between 10 °C and 30 °C

NUN X CAT:

Color	Transparant yellow
Viscosity (20°C)	20 mPa.s
Density (20°C)	1,00 g/cm ³
Flash point	>148 °C
Storage temperature	Between 10 °C and 30 °C

NUN X 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 30 times in volume
Compressive strength (after 6 weeks, reaction with quartz type H32)	11,5 MPa (xpV1)
E-Modulus (after 6 weeks, reaction with quartz type H32)	295 MPa

- Reaction times:

Temperature	2 % CAT		6 % CAT		10 % CAT	
	Start	end	Start	End	Start	End
5 °C	1' 05"	3' 20"	20 "	1' 10"	10"	45"
15 °C	29"	2' 05"	15"	59"	9"	42"
20 °C	25"	1' 42"	14"	53"	10'	40"
25 °C	20"	1' 40"	11"	47"	10"	40"

NUN X reacted with 5 % water (PH 7).



IV. Processing

1. Resin preparation

Create 1 mixture with the NUN X and adequate quantity NUN X CAT.

Depending on the ambient and structure temperature, the reaction times will vary (check 3. Technical data, Reaction times). 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. The reaction time of the mixture can be altered by changing the component NUN X CAT (check 3. Technical data, Reaction times). The more NUN X CAT is added, the quicker the reaction time. We recommend a maximum of 10% NUN X CAT to be added.

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 Karya Yapi contact person for more information or the specific application manuals of the injection techniques.

3. Injection

The NUN X mixture needs to be injected with a 1-component pump.

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 deeper 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 PU CLEANER. Hence, we recommend, every time there is a stop of more than 15 minutes, and at the end of the injection works to flush the pumps with 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 NUN X.

V. Packaging

NUN X: 20 kg plastic jerry can

NUN X CAT: 2 kg plastic bucket

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 NUN X 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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