

NordicPUR 90 DW

Two Component Slow Reacting Polyurethane resin

Product Description:

Slow reacting, two-component injection resin, free of CFCs and halogen. German approval for **applications in drinking water**. For targeted sealing and solidification in water bearing zones:

- Consolidation in wet or water-bearing strata
- Sealing against water inflow from strata dams or shaft walls
- Restoration of wet shafts
- Many other sealing, consolidation and stabilisation applications

General Building Inspectorate Approval for curtain grouting with CE-marking in accordance with EN 1504-5.

Technical properties:

The data below are laboratory data only. They may vary in practice due to thermal exchange between resin and strata, surface properties of the rock, humidity, pressure and other factors.

Reaction Data:

Temperature	23 °C	
String gel time (pot-life)	90 min	ASTM D7487
Foaming factor without water	1	ASTM C1643
Foaming factor in contact with water	1,5 to 3	Times (X) Initial Volume
Final Curing	Approx. 24 hours	

Reaction process can be accelerated by adding catalyst to component A.

Pot-life:

Catalyst quantity	Zero	20 g	50 g	100 g	200 g	400 g	500 g
Pot-life (min)	90	40	12:50	5:24	2:43	1:21	0:58

Pot-life determined at 20 °C without water contact; standard ASTM D7487. Catalyst quantities with reference to 20kg of component A.

For further information on the reaction zone, please see General Inspectorate Approval Z-101.29-19, DIBt Berlin 2014.

Mechanical Data:

Bending Tensile Strength	Approx. 29 N/mm ²	DIN EN 12390-5
Compressive strength	Approx. 74 N/mm ²	DIN EN 12390-3
E-modulus	Approx. 2800 N/mm ²	DIN EN ISO 527

Composition and properties:

Component A is a mixture of various polyols and additives, these react with component B to develop a tough and hard resin foam for sealing, filling and stabilisation.

Component B contains isocyanates and is classified according to Regulation (EC) 1272/2008 (CLP). The mixed resin penetrates the structure to be sealed. The major part of water in there is displaced due to the hydrophobicity and the viscosity of the resin. Traces of water, either by deliberate addition or from the water in the ground, accelerate the reaction and make the resin foam. The foam is tough and thus it is capable of following movements in the ground to some extent.

Application:

The two components are pumped by a dual component pump at the volumetric ratio of 1:1, then mixed thoroughly in a static mixer unit prior to injection into the strata via a packer installed in a previously drilled borehole. In contact with water, the resin then foams up. The following reaction mix displaces then the preceding one. Once the mixture does not meet any more water, it hardens without foaming to form a pore-free material. In case of appropriate conditions, a waterproof seal is achieved in a single operation. Due the very slow reaction time, the components can be mixed in a suitable clean and dry container by means of an effective stirrer and pumped with a one component pump.

Recommendation:

We recommend that before injection, the product should be stored for at least 12 hours at a minimum temperature of 15 °C to achieve the recommended mixing temperature of between 15 °C to 25 °C.

Packaging:

Component A: 20 kg in metal canister

Component B: 24 kg in metal canister

Larger packaging available on request

Storage, shelf life:

The shelf life of the product is at least twelve (12) months from original packaging. The product should be stored in a dry place at temperatures between 15 °C and 25 °C, protected from heat, frost and direct sunlight. Improper storage will shorten the shelf life.

Disposal:

Dispose of uncured product components in accordance with the local regulations. Small quantities of cured product residues may be disposed of as normal domestic waste. Empty cans should be cleared of liquid by punching a hole through the edge of the cover and turning them upside down, until liquid does not flow out any longer.

Test Certificates:

The manufacturer has the following test certificates performed in Germany:

- Examination of the leaching behaviour with reversed flow direction of an injection resin based on polyurethane (column trial referring to DIBt Guideline; "Assessments of the effects of construction products on soil and ground water"); MFPA Leipzig 2013
- Determination of resistance when stored in liquid; MFPA Leipzig 2014
- Determination of identified properties of injection resins based on polyurethane; MFPA Leipzig 2014
- Screening of standard flammability (building material class B2) according to DIN 4102-1:1998-05; MFPA Leipzig 2014
- General Building Inspectorate Approval "PUR-O-STOP FS-L for curtain grouting"; DIBt Berlin 2014
- Examination of the leaching behaviour with reversed flow direction of an injection resin based on polyurethane (column trial referring to DIBt Guideline "Assessments of the effects of construction products on soil and ground water") - supplement (analysis of amines); MFPA Leipzig 2014
- Behaviour of injection resins in contact with anhydrite rock and shell limestone; MFPA Leipzig 2015
- Investigations on ageing processes of the resin, Interim report after 180 days; MFPA Leipzig 2015
- Investigations on ageing processes of the resin; MFPA Leipzig 2017



Disclaimer:

The data in this sheet conform to our best knowledge and experience at the date of printing, which is indicated below. The state of knowledge and experience are evolving constantly. Please pay attention therefore, that you always refer to the current version of this data sheet. The description of the product application in this sheet cannot take the special conditions and circumstances into account emerging from the individual case. Application, use and processing of our product occur outside of our control capabilities. In particular, the processing results are exclusively subject to your own responsibility. No data in this sheet constitute a guarantee in a legal sense. Every time the user is obliged to check the product and auxiliary agents in terms of usefulness for his intended use.

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