

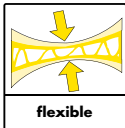
Polyinject Rubber

Three-component, water-expanding hydrogel

For injection applications for extreme fine cracks which hardens to form a High quality rubber-like, flexible product

CHARACTERISTICS

- ▶ Flexible
- ▶ Extreme low viscosity
- ▶ Can be used for injection hoses



DESCRIPTION

Polyinject Rubber is a three-component, waterexpanding hydrogel on acrylate or methacrylate basis that hardens to a rubber-like, flexible product. Polyinject Rubber can be applied in the case of grout curtains, brickwork injection, horizontal barriers, injection hose grouting and ground stabilization. Polyinject Rubber has an extremely low blending viscosity that is almost equivalent to the viscosity of water. This allows the use of Polyinject Rubber for injection applications for extreme fine cracks and massive walls with thicknesses above 50cm. In cured state Polyinject Rubber has a sound chemical resistance against many acids, bases, solvents and fuels etc. Due to its high-quality material basis (see resistance list). During reaction and in a cured state Polyinject Rubber emits no toxic substances into the groundwater. Product elements that are not built in during the reaction process (monomers, intermediates) are rapidly and completely biodegradable. Differing pot lives can be defined (see table pot life), adapted to the application and environmental temperature, by varying the amount of B component (40 g to 1000 g based on 20 kg A1 components).

APPLICATION INSTRUCTIONS

Surface preparation

The surface must be stable and free of separating substances. Insufficiently firm layers and concrete slurry must be removed. For this purpose the surface may be prepared by suitable mechanical processes such as e.g. shot blasting, milling or any other suitable mechanical means. Blow the cracks and treated surface with oil free air to ensure complete removal of all dust and loose particles. In the presence of running water the flow must be stopped using Polyinject Stop which produces a rapid setting water-stopping foam. When the water is stopped the cracks are re-injected with Polyinject Rubber.



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Work preparation

Polyinject Rubber is applied as injection resin using injection packers and 2-C pumps equipped with a flushing unit. The injection packers may be fixed into holes drilled directly into the crack or drilled diagonally from concrete adjacent to the crack or by the fixing of injection nipples. For further assistance and instructions regarding the packer fixing and design please refer to our method Statement.

Mixing

Polyinject Rubber consists of 3 components. The all container is poured completely into the A1 container and mixed for approx. 3 minutes. The B component is filled in the desired amount into a container equivalent to the A1 component and filled with clean tap water up to the same mass as A1 + A11, then it is mixed again for 3 minutes. The A and B components prepared in this way are ready for use and are processed 1 : 1 with a 2-component injection pump equipped with a flushing unit. The use of the injection pumps that feature forced conveyance of 1:1 (A to B component) is recommended in order to prevent mixing errors. The A1 component activated with All can be used for approx. 24 hours (depending on temperature). Using the activated A1 component is not recommended after this period. The ready-for-use B component remains stable for approx. 5 hours (depending on

temperature). The required potlife can be defined depending on the amount of B component (salt) and the temperature. The amount of component B should never be below 40 g (based on 20 kg of A1 component) to assure a reliable reaction. Likewise should the amount of component B not exceed 1000 g (based on 20 kg of A1 component) to avoid degradation of the product properties. The amount of component B shall never exceed 300 g (based on 20 kg of A1 component) in case of crack injection on reinforced concrete. Never mix the A1+A11 mixture together with B component.

Injection

Polyinject Rubber can be injected with a 2 component injection pump equipped with a flushing unit.

CLEANING

Residues of Polyinject Rubber can be removed with water from tools, equipment and mixers immediately after use. Hardened material can only be removed mechanically. We do recommend the use of clean potable water for stainless steel pumps as cleaning agent.

STORAGE & SHELF LIFE

Store all material between 10 and 25°C in a cool, covered dry place. Do not expose the containers to direct sunlight and keep away from all sources of heat. In tropical climatic conditions, the product has to be stored in an air-conditioned environment and protected from high humidity. The shelf life of the product is 12 months in unopened condition if stored as per the recommendations. Exposure to high temperature and humidity will result in considerable deterioration of the product and reduce its shelf life.

HEALTH & SAFETY

As with all construction chemical products caution should be always be exercised whilst usage. Protective clothing such as gloves and goggles should be worn. Treat any splashes to the skin or eyes with fresh water immediately and seek medical advice. Should any of the product be accidentally swallowed do not induce vomiting, but call for medical assistance immediately. Ensure that the container is available for medical attendant to examine any relevant instructions and contents details. For any further information please refer to the material Safety Datasheet.

POT LIFE

A reaction time of 4 to 6 minutes should be defined in the case of grout curtains and ground stabilization to achieve optimal saturation of the ground. It has been proved in extensive tests that faster reaction times have a negative effect as no uniform gel curtain or rather uniform distribution of the injection material can be achieved. The reaction time must be at least 10 min to achieve optimal distribution of the acrylate gel in the case of crack injections, brickwork injections,

subsequent horizontal barriers and injection hose grouting. Injection must be carried out in low pressure operation (low pump pressure, utilisation of low-pressure connector) with slow conveyance of the material. In the case of crack injections, crack widths down to a minimum of 0.05 mm can be filled due to the low viscosity of the product.

| | | | | | |
|------|-------|-------|-------|-------|-------|
| 25°C | 08:50 | 05:10 | 04:15 | 03:25 | 01:50 |
| 20°C | 11:00 | 06:30 | 04:50 | 04:00 | 02:45 |
| 15°C | 15:00 | 07:40 | 05:50 | 04:25 | 03:30 |
| 10°C | 20:30 | 09:40 | 07:15 | 05:30 | 03:50 |
| 5°C | 41:45 | 13:20 | 09:50 | 06:40 | 05:00 |
| | 40g | 150g | 300g | 600g | 1000g |

Variation of the B-component with different temperatures (with reference to 20 kg A1 comp.)

TECHNICAL SPECIFICATION

| PROPERTIES | VALUES | | |
|--------------------------------|--------------------------------|--------------------------------|-------------------------------|
| | A1 component | All component | B component |
| Consistency | Liquid | Liquid | Solid |
| Color | Transparent | Colorless | White |
| Spec. weight (20°C) | Approx. 1.05 g/cm ³ | Approx. 0.93 g/cm ³ | Approx. 1.1 g/cm ³ |
| Dynamic viscosity (20°C) | 4.7 - 5.3 mPas | 1.4 - 1.6 mPas | 1.0 mPas (B salt solution) |
| Packaging | A1 28kg, A1 1 kg, B 1kg | | |
| Mixture of A and B components: | | | |
| Procession temperature | * 5 - 40°C | | |
| Dynamic viscosity | 2.46 - 2.66 mPas | | |
| Pot-life | 2 to 30 minutes | | |
| Final curing | 10 to 40 minutes | | |
| Properties after curing | | | |
| Consistence | Rubber-elastic | | |
| Color | White | | |
| Rel. elongation at break | 165 % | | |
| Expanding rate | 20 Vol. % | | |

All values given are subject to 5-10% tolerance

Apart from the information given here it is also important to observe the relevant guidelines and regulations of various organisations and trade associations as well as the respective standards. The aforementioned characteristics are based on practical experience and applied testing. Warranted properties and possible uses which go beyond those warranted in this information sheet require our written confirmation. All data given was obtained at an ambient and material temperature of +23°C and 50 % relative air humidity at laboratory conditions unless specified otherwise. Please note that under other climatic conditions hardening can be accelerated or delayed.

The information contained herein, particularly recommendations for the handling and use of our products, is based on our professional experience. As materials and conditions may vary with each intended application, and thus are beyond our sphere of influence, we strongly recommend that in each case sufficient tests are conducted to check the suitability of our products for their intended use. Legal liability cannot be accepted on the basis of the contents of this data sheet or any verbal advice given, unless there is a case of wilful misconduct or gross negligence on our part. This technical data sheet supersedes all previous editions relevant to this product.