Technical Data Sheet
Issue: 17-08-2015

RUBBERTITE

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

Properties:

RUBBERTITE is a three-component, water-expanding hydrogel on acrylate or methacrylate basis that hardens to a rubber-like, flexible product.
RUBBERTITE is especially noted for its extremely low blending viscosity that is almost equivalent to the viscosity of water. This renders a series of renovation procedures possible that cannot be accomplished with injection materials of a higher viscosity.

RUBBERTITE can be applied in the case of grout curtains, brickwork injection, horizontal barriers and ground stabilisation.

RUBBERTITE combined with *POLINIT* is suitable for filling cracks in concrete structures and for injection hose grouting (further information see Technical Data Sheet *POLINIT*).

In cured state *RUBBERTITE* has a good chemical resistance against many acids, bases, solvents and fuels etc. due to its high-quality material basis (see chemical resistance list).

During reaction and in cured state *RUBBERTITE* 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.

RUBBERTITE has a German General Building Inspectorate Approval as an injection product for curtain grouting.

RUBBERTITE in combination with *POLINIT* is CE marked according to EN 1504-5 as a concrete injection product for swelling fitted filling of cracks.

Technical Data:

Substance data of components:

Component AI		
Consistency	liquid	
Colour	transparent	
Odour	ester-like	
Spec. density (20°C)	approx. 1.05 g/cm^3	DIN EN ISO 3675
Dyn. viscosity (20°C)	approx. 5 mPas	DIN EN ISO 3219

Component AII

Consistency	liquid	
Colour	colourless	
Odour	amine-like	
Spec. density (20°C)	approx. 0.94 g/cm^3	DIN EN ISO 3675
Dyn. viscosity (20°C)	approx. 1.5 mPas	DIN EN ISO 3219

Component B

Consistency	solid	
Colour	white	
Odour	odourless	
Spec. density (20°C)	approx. 2.59 g/cm^3	
Bulk density (20°C)	approx. 1.15 g/cm^3	

Mixture of A-and B-component:

Processing temperature *	5 - 40°C	substrate temperature
Viscosity of mixture (20°C)	approx. 2.5 mPas	DIN EN ISO 3219

Reaction data at 20°C:

Pot-life	approx. 5 min	DIN EN 14022
Final curing	approx.10 min	

Properties after curing:

Consistency	rubber-like	
Colour	white	
E-modulus	approx. 0.13 MPa	DIN EN ISO 527-3
Tensile strength	approx. 0.08 MPa	DIN EN ISO 527-3
Elongation at break	approx. 290 %	DIN EN ISO 527-3
Water absorption	approx. 20 %	DIN EN ISO 62

Chemical resistance: DIN EN ISO 175

Classification:

+ resistant (non or little effect)
+/- limited resistant (moderate effect)
- not resistant (serious effect)

Chemical compound	Classification	Remarks
Acetone	+	
Ammoniac solution 32 %	-	resistant for 72 h
Petrol	+	
Brackish water	+	
2-Butoxyethanol	+/-	loss of elasticity by forming of xerogel
Butylmethacrylate	+	minor colour change from white to transparent
Calcium hydroxide solution pH12	+	
Cyclohexanol	+/-	colour change from white to transparent
Diesel fuel	+	
Acetic acid 96 %	+/-	strong swelling
Ethanol	+	
Ethyl acetate	+/-	slight shrinkage
Ethylene glycol	+/-	strong swelling without losing elasticity, colour change from white to transparent-white
n-Hexane	+	
Isobutyl methacrylate	+	
Kerosine, Jet fuel (Jet A1)	+	
Castor oil	+	
Sea water	+	
Methanol	+	
Mineral oil 15W40	+	

Sodium hydroxide solution 5 %	-	strong swelling
Sodium hydroxide solution 10 %	-	strong swelling
Hydrochloric acid 37 %	+	
Sulfuric acid 96 %	-	resistant for 72 h
aqueous solution with pH 3 and SO_4^{2-} content > 4000 mg/l**	+	
Toluene	+	
m-Xylene	+	
o-Xylene	+	

* The declared range of temperature complies with our recommendations. Generally, the product reacts even at very low temperatures (from experience down to approx. -15°C) or distinct higher values than +40°C.
Admittedly, problems might occur, which are not directly related to the properties of the product. At sharp frost the air line of the pump might freeze or even present ice inside the structural element to be sealed can cause difficulties. At temperatures above-average too short reaction times can arise, which prevent an entire and successful filling of the injection area. Beside that it might happen that the activated A-component at very high temperatures starts curing even without addition of the B-component, which results in a blockage of the injection pump.

** Concrete-attacking water in accordance with DIN 4030, Part 1, Table 4

Processing:

1. In case of curtain grouting, brickwork injection, horizontal barrier and ground stabilisation:

The AII container is emptied completely into the AI container and mixed for approx. 3 minutes.

The B component is filled into a container equivalent to the AI component and filled with 20 litre of tap water, 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 (parts by volume) by means of an 2K injection pump.

Indicated injection pumps: *BOOSTER 10 A*
MINIBOOSTER 5U

The AI component activated with AII can be used for approx. 12 hours (depending on temperature). Using the activated AI component is not recommended after this period.

The ready-for-use B component remains stable for approx. 5 hours (depending on temperature).

2. In case of crack injection and injection hose grouting:

The AII container is emptied completely into the AI container and mixed for approx. 3 minutes.

In case of crack injection and injection hose grouting *POLINIT* is used instead of water for mixing the B component.

To ensure that component B (hardener salt) is completely dissolved in *POLINIT* the following procedure is recommended:
The B container is half-filled with tap water, then shaken until the B salt is completely dissolved. This salt solution is filled into *POLINIT* and is mixed homogenously.

The A and B components prepared in this way are ready for use and are processed 1 : 1 (parts by volume) by means of an 2K injection pump.

Indicated injection pumps: *BOOSTER 10 A*
MINIBOOSTER 5U

The AI component activated with AII can be used for approx. 12 hours (depending on temperature). Using the activated AI component is not recommended after this period.

The ready-for-use B component (B salt solution + *POLINIT*) remains stable for approx. 5 hours (depending on temperature).

Safety information:

RUBBERTITE component AI, AII and B is classified as hazardous according to Regulation (EC) 1272/2008 (CLP).

It is therefore necessary, before beginning processing, to become familiar with the precautions and safety advice as indicated in the material safety data sheet.

Packaging:

Component AI	20 kg plastic canister
Component AII	1 kg plastic bottle
Component B	0,3 kg plastic can
POLINIT	20 kg plastic canister

Bigger packaging on request.

Storage:

Shelf life at least 12 month in original packaging when stored in dry conditions between 15-25°C, protected from heat, frost and direct sunlight.

After the expiration the use of the product is generally not recommended, unless an approval has been provided by TPH. This approval can only be obtained by the quality assurance department of TPH releasing the material after verification of main properties being within specification.

Disposal:

Small quantities of cured product residues can be disposed of as normal domestic waste. Dispose of not cured product components must be effected in accordance with the corresponding local regulations. For further information please refer to the material safety data sheets.

Test certificates:

Microbiological test for sterility, LADR Geesthacht 1999

Compatibility test for waterstops in contact with *RUBBERTITE* acrylate gel; MFPA Leipzig 1999

Corrosion resistance test of reinforcing steel to *RUBBERTITE* acrylate gel; MFPA Leipzig 1999

Determination of resistance of acrylate gels *RUBBERTITE* and *VARIOTITE* to different fluids; MFPA Leipzig 1999

Application technology test of injection product *RUBBERTITE* for horizontal barrier to reduce the capillary water transport in brickwork; MFPA Leipzig 2000

Examination of the thermal conductivity and water vapour permeability of brickwork that had been saturated with *RUBBERTITE*; MFPA Leipzig 2000

Examination of the low-inflammability of *RUBBERTITE* acrylate gel in compliance with DIN 4102; MFPA Leipzig 2002

Resistance tests of *RUBBERTITE* acrylate gel; MFPA Leipzig 2002

Application technology test of injection product *RUBBERTITE* / *POLINIT* (for crack injection in reinforced concrete structures); MFPA Leipzig 2004

Resistance test of *RUBBERTITE* and *RUBBERTITE* / *POLINIT* to freeze-thaw cycling; MFPA Leipzig 2005

Examination of the leaching behaviour with reversed flow direction of the acrylate gel *RUBBERTITE* (column trial referring to DIBt Guideline "Assessments of the effects of construction products on soil and ground water"); MFPA Leipzig 2007

Examination of the leaching behaviour with reversed flow direction of the acrylate gel *RUBBERTITE* (column trial referring to DIBt Guideline "Assessments of the effects of construction products on soil and ground water") - additional testing -; MFPA Leipzig 2007

Determination of electrical conductivity of the acrylate gels *RUBBERTITE* and *RUBBERTITE*/*POLINIT*; MFPA Leipzig 2008

Examination of corrosion protection of an acrylate gel system for crack injection in reinforced concrete; IBAC Aachen 2008

Expert opinion on the application of acrylate gel *RUBBERTITE* with *POLINIT* as injection product for sealing of reinforced concrete structures; Prof. Dr. Raupach, IBAC Aachen 2008

Determination of performance characteristics of the acrylate gel *RUBBERTITE* as injection product for curtain grouting in the ground; MFPA Leipzig 2008

Screening of standard flammability (building material class B2) according to DIN 4102 part 1, edition May 1998; MFPA Leipzig 2008

General Building Inspectorate Approval "Hydrogel *RUBBERTITE* for curtain grouting"; DIBt Berlin 2008

Suitable test of the *RUBBERTITE* injection gel in compliance with the Directive 804.61.02 of the Deutsche Bahn; MFPA Leipzig 2009

Long-time behaviour of *RUBBERTITE* at tidal zone storage and outplacement inside soil for 10 years; MFPA Leipzig 2009

Drinking water test in accordance with KTW recommendations as of 1977, LADR Geesthacht 2010

Acrylate gel *RUBBERTITE* / *POLINIT* - Evidence of watertightness of injected cracks with cyclic movement; MFPA Leipzig 2011

Test of watertightness of *RUBBERTITE*/*POLINIT* according to DIN EN 14068 at a water pressure of 7 bar; MFPA Leipzig 2011

Swelling behaviour of the acrylate gel *RUBBERTITE + POLINIT TX* in contact with sea water; MFPA Leipzig 2012

Examination of the leaching behaviour of the injection product *RUBBERTITE* in connection with the renewal of the General Building Inspectorate Approval Z-101.29-3; MFPA Leipzig 2013

Testing of acrylate gel *RUBBERTITE + POLINIT* for obtaining a General Building Inspectorate Approval as injection product for filling of cracks in reinforced concrete structures; MFPA Leipzig 2013

Examination of contact behaviour of injection resins based on acrylate to anhydrite; MFPA Leipzig 2014

Long-time behaviour of *RUBBERTITE* at tidal zone storage and outplacement inside soil for approx. 16 years; MFPA Leipzig 2015

RUBBERTITE in combination with *POLINIT* is an concrete injection product for swelling fitted filling of cracks according to EN 1504-5

CE

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GER0513/06

EN 1504-5:2004

Concrete injection product
EN 1504-5: U(S2) W(1)(1/2/3) (5/40)

Watertightness	S2
Viscosity	≤ 60 mPas
Corrosion behaviour	tested, no corrosive effect
Development and ratio of expansion after immersion in water	air drying: approx. -15 % water immersion: approx. +20 %
Sensitivity to water	passed
Sensitivity to wet-dry cycles	passed
Durability (compatibiliy with concrete)	passed
Release of dangerous substances	NPD

Legal notice:

The correct and thus successful application of our products is not subject to our control. A guarantee can be issued for the quality of our products within the framework of our sales and supply conditions, however not for successful processing. All data and specifications in this specification sheet are based on the present state of the art and the right to changes and adaptations for the sake of development remains explicitly reserved. The consumption specifications designated by us can be only average empirical values, where deviations are possible on an individual basis and therefore cannot be excluded by us.

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Waterproofing Systems