

## NordicACR Flex DW

### Three Component (3C) Expanding Acrylate resin

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General Building Inspectorate Approval for curtain grouting  
General Building Inspectorate Approval for crack injection  
CE-marking RUBBERTITE in accordance with EN 1504-5  
CE-marking RUBBERTITE / POLINIT in accordance with EN 1504-5  
General Building Authority Test Certificate with VPRESS  
General Building Authority Test Certificate with ECOPRES

### Product Description:

A three-component, water-expanding hydrogel on acrylate or methacrylate basis that hardens to a rubber-like, flexible product. It is characterised by the extremely low blending viscosity that is almost equivalent to the viscosity of water, creating a series of renovation procedures possible that cannot be accomplished with other injection materials of a higher viscosity.

- Grouting of curtains,
- Repairs in brickwork and cement-based structures
- Forming of horizontal barriers
- Ground stabilisation

When combined with an additional admixture, the system increases its ductile characteristics and reduces the tendency of potential shrinkage:

- Cracks In concrete structures
- Swelling fitted filling of cracks
- Sealing injection hoses in grouting works
- Ventilation systems

## 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 stone, humidity, pressure and other factors.

### Reaction and Mechanical Data:

Temperature 23 °C	Data	Test Standard
String Gel Time /Pot Life (min:s)	Approx. 5:00 min	DIN EN 14022
Final Curing Time (min:s)	Approx. 10:00 min	
Processing Temperature	5 -40 °C	Substrate Temperature
Viscosity of mixture at 20 °C	Approx. 2.5mPas	DIN EN ISO 3219

### Material Data:

	Component A		Standard
	A1	A2	
Spec. Density at 20 °C	Approx. 1.06 g/cm <sup>3</sup>	Approx. 0.93 g/cm <sup>3</sup>	DIN EN ISO 3675
Bulk Density at 20 °C	Approx. 5.0 mPas <sup>3</sup>	Approx. 3.5 mPas <sup>3</sup>	DIN EN ISO 2555
	Component B		
Spec. Density at 20 °C	Approx. 2.59 g/cm <sup>3</sup>		
Bulk Density at 20 °C	Approx. 3.50 g/cm <sup>3</sup>		

### Mechanical Data:

Water absorption	Approx. 20%	DIN EN ISO 62
Elongation at break	Approx. 290%	DIN EN ISO 527
E-modulus	Approx. 0.13 MPa	DIN EN ISO 527
Tensile Strength	Approx. 0.08 MPa	DIN EN ISO 527

## Properties After Curing:

Consistency	Rubber Like
Colour	White
Chemical Resistance Classification:	DIN EN ISO 175
+ resistant (no or little effect)	
+/- Limited resistance (moderate effect)	
- not resistant (serious effect)	

Chemical Compound	Classification	Remarks
Acetone	+	
Ammoniac solution 32%	-	resistant for 72 h
Petrol	+	
Brackish water	+	
2-Butymethacrylate	+/-	loss of elasticity by forming of xerogel
Butylmethacrylate	+	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 SO42- 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

## Composition and properties:

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

## Application:

### 1. 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 BII 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.

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. 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 ADMIXTURE improving ductile characteristics is used instead of water for mixing the B component.

To ensure that component BII (hardener salt) is completely dissolved in ADMIXTURE the following procedure is recommended:

- i. The BII container is half-filled with tap water, then shaken until the BII salt is completely dissolved. This salt solution is filled into ADMIXTURE and is mixed homogenously.
- ii. 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 2 component injection pump.
- iii. The AI component activated with AII can be used for approx. 12 hours (depending on temperature).
- iv. Using the activated AI component is not recommended after this period.
- v. The ready-for-use B component (BII salt solution + ADMIXTURE) remains stable for approx. 5 hours (depending on temperature).

## **Recommendation:**

We recommend that before processing, the product should be stored for at least 12 h at a minimum temperature of 15 °C to achieve best performance. Read safety data sheet before using products.

## **Packaging:**

Component A1: 20kg in Plastic container  
Component A2: 1kg in Plastic bottle  
Component B: 0.3 kg in Plastic container  
Admixture: 20kg in Plastic container

Larger packaging on request

## **Storage, shelf life:**

The shelf life of the product is six months from date of delivery. The product should be stored in a dry place at temperatures between 15 °C and 25 °C. Improper storage will shorten 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.

## **Testing and Certificates:**

### **Drinking water testing:**

Examination according to TrinkwV 2012 and Coatings Guideline; görtler analytical services gmbH Vaterstetten 2018.

### **Ground water testing:**

Examination of the leaching behaviour with reversed flow direction of the acrylate gel (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 of the injection product RUBBERTITE in connection with the renewal of the General Building Inspectorate Approval Z-101.29-3; MFPA Leipzig 2013.

### **Fire Behaviour testing:**

Fire behaviour test of building products Inflammability at directly flames according to DIN EN ISO 11925, part 2: 2002; MFPA Leipzig 2010. Classification report about fire behaviour according to DIN EN 13501-1:2007; MFPA Leipzig 2010

## Other Testing:

- Microbiological test for sterility, LADR Geesthacht 1999
- Compatibility test for waterstops in contact with acrylate gel; MFPA Leipzig 1999
- Corrosion resistance test of reinforcing steel to acrylate gel; MFPA Leipzig 1999
- Determination of resistance of acrylate gels to different fluids; MFPA Leipzig 1999
- Application technology test of injection product for horizontal barriers 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 acrylate gel; MFPA Leipzig 2000
- Examination of the low-inflammability of acrylate gel in compliance with DIN 4102; MFPA Leipzig 2002
- Application technology test of injection product / Admixture (for crack injection in reinforced concrete structures); MFPA Leipzig 2004
- Resistance test of Product and Product / Admixture to freeze-thaw cycling; MFPA Leipzig 2005
- Determination of electrical conductivity of the acrylate gels and Product/Admixture system; MFPA Leipzig 2008
- Examination of corrosion protection of an acrylate gel system for crack injection in reinforced concrete; IBAC Aachen 2008
- Determination of performance characteristics of the acrylate gel as injection product for curtain grouting in the ground; MFPA Leipzig 2008
- Expert opinion on the application of acrylate gel with Admixture as injection product for sealing of reinforced concrete structures; Prof. Dr. Raupach, IBAC Aachen 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 "for curtain grouting"; DIBt Berlin 2008
- Suitable test of the injection gel in compliance with the Directive 804.61.02 of the Deutsche Bahn; MFPA Leipzig 2009
- Long-time behaviour of products at tidal zone storage and outplacement inside soil for 10 years; MFPA Leipzig 2009
- Determination of the identification properties and performances of Product / Admixture as a polyacrylate gel according to EN 1504-5; MFPA Leipzig 2011
- Test of watertightness of Product / Admixture according to DIN EN 14068 at a water pressure of 7 bar; MFPA Leipzig 2011
- Swelling behaviour of the acrylate gel and admixture in contact with sea water; MFPA Leipzig 2012
- Resistance test of an injection resin based on silicate to freeze-thaw cycling; MFPA Leipzig 2012.
- Testing of acrylate gel / admixture for obtaining a General Building Inspectorate Approval as injection product for filling of cracks in reinforced concrete structures; MFPA Leipzig 2013
- Long-time behaviour of acrylate gels at tidal zone storage and outplacement inside soil for approx. 16 years; MFPA Leipzig 2015
- General Building Authority Test Certificate for the injection hose system VPRESS with injection gel / admixture; MFPA Leipzig 2016
- General Building Authority Test Certificate for the injection hose system ECOPRESS with injection gel / admixture; MFPA Leipzig 2016
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### Other Testing (cont.):

- RUBBERTITE - Examination of the leaching behaviour of an injection resin based on acrylate; MFPA Leipzig 2019
- Behaviour of acrylate gel after outplacement inside soil for nearly 20 years; MFPA Leipzig 2019
- Behaviour of acrylate gel after tidal zone storage for 20 years; MFPA Leipzig 2019
- DIBt report for acrylic gel / admixture concrete injection product; DIBt Berlin 2019

### 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 intentional use.

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