

**5-component, highly elastic, low viscous acrylic injection resin with excellent physical properties. Ideal for water sealing underground structures, such as tunnels.**

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#### APPLICATIONS

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- Curtain injections around tunnel segments, drainpipes, porous concrete structures, etc.
- Injection of structures that require strong physical properties of the acrylic gel due to fluctuations in groundwater levels, concrete settling, expansion joints, etc.

#### PROPERTIES

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- The initiator is dissolved in a strengthening polymer blend instead of water. As a result, the acrylic gel has greatly improved physical properties compared to standard acrylic injection resins, such as superior tear strength.
- Low viscosity
- Good general chemical resistance
- Excellent adhesion on mineral building materials such as concrete, cement and brick
- Reacts into an elastic, durable gel
- Does not contain acrylamide, methacrylamide, formaldehyde or solvents
- Non-flammable
- Outstanding water retention capacity: when the injected cracks, fissures and voids dry out due to temperature or ground water level fluctuations, the gel will not crack
- The cured gel has excellent durability in wet-dry cycles

**PACKAGING**

RESIN	ADDITIVE	CATALYST	INITIATOR	STRENGTHENER
24.910 KG	0.09 KG	2.50 KG	0.625 KG	23.7 KG

**MIXING RATIO**

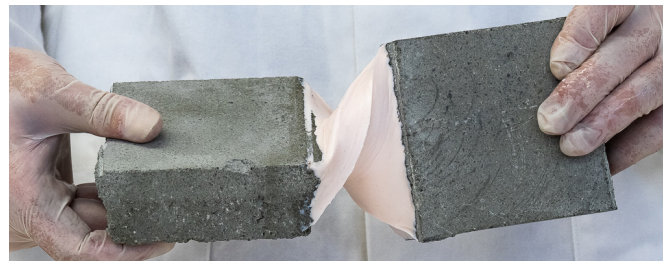
	SOLUTION 1	SOLUTION 2
<b>1:1</b>	PC® 509 Rubber Acryl Resin with PC® 509 Rubber Acryl Additive and PC® 509 Rubber Acryl Catalyst	PC® 509 Rubber Acryl Initiator with PC® 509 Rubber Strengthener

**TECHNICAL DATA**

	RESIN	ADDITIVE	CATALYST	INITIATOR	STRENGTHENER	MIXTURE
<b>Appearance</b>	Purple-pink liquid	Clear transparent liquid	Pale yellow liquid	White powder	White liquid	Whitish pink
<b>Viscosity (20 °C)</b>	18 mPas	5 mPas	7 mPas		25 mPas	20 mPas
<b>Density</b>	1.173 g/cm <sup>3</sup>	0.931 g/cm <sup>3</sup>	1.04 g/cm <sup>3</sup>		1.019 g/cm <sup>3</sup>	± 1.09 g/cm <sup>3</sup>
<b>PH</b>	5 - 6	10 - 11	11 - 12		7 - 8	
<b>Solid matter content</b>	42% - 48%				40% - 43%	40% - 50%
<b>Fully miscible with water</b>	Yes	Yes	Yes	Soluble	Yes	
<b>Corrosiveness</b>						Non-corrosive
<b>Pot Life</b>						Adjustable and dependent on the amount of Initiator

**CURED ACRYLATE AT 20 °C**

<b>Tensile Strength</b>	< 0.5 MPa
<b>Elongation</b>	> 250%
<b>Bond strength</b>	No adhesive failure between the concrete and the cured acrylate grout
<b>Shrinkage</b>	< 15 mass%



### PROCESSING

### 1 PREPARATION

The PC® 509 Rubber Acryl components are supplied ready to use. Create 2 mixtures in separate plastic buckets. Prepare only as much as will be used the same day.



**Solution 1:** PC® 509 Rubber Acryl Resin mixed with PC® 509 Rubber Acryl Catalyst and PC® 509 Rubber Acryl Additive

**Solution 2:** PC® 509 Rubber Acryl Initiator mixed with PC® 509 Rubber Acryl Strengthener

Attention:

When mixing the resin, always use a wooden or stainless steel spatula.

- The reaction time depends on the temperature of the material, the building structure and the possible amount of water present. Higher temperature will speed up the reaction time and lower temperature will slow it down.
- We advise to make an on-site trial, before injection, to observe and define the reaction time.
- To change the reaction time, only adapt the quantity of the PC® 509 Rubber Acryl Initiator. The quantity of the other components stays the same. Contact your TRADECC representative for longer reaction times.
- Use a two-component (manual, electric or pneumatic) stainless steel pump.
- Verify that pump and equipment are clean and that no residues from previous injection works are left.
- The two mixtures are inserted separately in the pump, but are mixed homogeneously in a volume ratio of 1:1 in the mixing head of the pump before being injected through the pump nozzle.
- Determine the type and dimensions of the packers according to the pump type, slab thickness and type of injection. Remove all items that can obscure the crack so the crack is clearly visible and the drilling patterns for the injection holes can be determined.
- Check the quality of the concrete, as injection implicates pressure.

### REACTION TIMES AT 20 °C

SOLUTION 1						SOLUTION 2			Reaction time at 20 °C
Resin		Additive	Catalyst			Initiator	Strengthener		
Kg	Liter	Kg	Liter	Kg	Liter	Kg	Kg	Liter	
24.910	21.236	0.09	0.0967	2.50	2.395	1.18	23.7	23.228	28 sec
24.910	21.236	0.09	0.0967	2.50	2.395	0.948	23.7	23.228	36 sec
24.910	21.236	0.09	0.0967	2.50	2.395	0.711	23.7	23.228	44 sec
24.910	21.236	0.09	0.0967	2.50	2.395	0.592	23.7	23.228	56 sec
24.910	21.236	0.09	0.0967	2.50	2.395	0.474	23.7	23.228	1 min 12 sec
24.910	21.236	0.09	0.0967	2.50	2.395	0.237	23.7	23.228	2 min 12sec

## 2 DRILL HOLES AND PACKERS

- Determine the type and dimensions of the packers according to the pump type, slab thickness and type of injection.
- If a rebar is present, try to locate it and plan the drill pattern in such way that it minimizes the bit during drilling.
- Create a lattice of injection holes above the highest assumed level of groundwater.
- Drill the holes with an angle of approximately 45° or less to the surface, and towards the crack.
- Drill holes through the concrete structure, in the shortest distance, until you reach the space behind the structure.
- Set up a raster of packers.
- Distance of the drilled holes depends on the structure and water pressure present.

## 3 INJECTION ACRYLIC RESIN

- Start pumping, open the valve on the gun and allow the remaining solvent that was inside the pump to pass until the resin appears.
- The injection pressure can vary from low pressure to high pressure method, depending on the structure.
- Holding the pressure line allows the operator to feel the pump pulsations. If a pressure gauge is available, the pressure should be monitored and kept in a range that is just enough to allow a good flow of material.
- Begin the injection from one side to the other and from the bottom up.
- Continue the injection until resin leaks out from the adjacent packers. This is necessary to get an even material distribution.
- Stop pumping, disconnect pressure line and proceed to the next packer.
- Continue the procedure until the area is covered.

## 4 CLEANING

- After the material is cured, packers can be removed.
- The drilled holes can be covered up with a fast setting mortar, PC® Patch'n Plug.
- Clean and flush the pump equipment with water every time there is a stop of more than 15 minutes. Or whenever necessary and at the end of the injection, flush with an extra ¼ litre water.
- Make sure that the pump is well cleaned and only stop when clear water is coming out of the pump.



As the PC® 509 Rubber Acryl Initiator is dissolved in a **strengthening polymer blend** (PC® 509 Rubber Acryl Strengthener) instead of water, the gel has outstanding physical properties: excellent cohesion upon swelling, good stability, high water retention capacity, excellent behaviour through wet-dry cycles, and superior tear strength in comparison to standard acrylate injection resins.

## STORAGE

**Storage:**

In a dry place between + 5 °C and + 25 °C.

**Shelf life:**

6 months after production date in the original, unopened and undamaged packaging. If stored at temperatures higher than 25 °C the shelf life can not be guaranteed.

## PRECAUTIONS AND SAFETY RECOMMENDATIONS

- Protect the products against UV and sunlight.
- Don't use water that contains a lot of minerals for the preparation of solution 2. The minerals can accelerate the gel reaction.
- Wear safety glasses, gloves and protective clothing. Avoid contact with skin and eyes.
- In the event of contact with eyes: rinse thoroughly with clear water and consult a doctor.
- In the event of contact with skin: wash with lots of water and soap. Rinse well afterwards.
- Mix residues of PC®509 Rubber Acryl with sand or sawdust and dispose of in accordance with local regulations.
- Consult the MSDS sheet.

## CE MARKING



0749 / EN 1504 - 5

U(S1) W(1) (1/2/3/4) (5/30)

Concrete injection product for swelling fitted filling of cracks

Watertightness under pressure	EN 14068	≥ 2 x 10 <sup>5</sup> Pa
Workability - Viscosity		≤ 60 mPas
Corrosion behaviour		Deemed to have no corrosive effect
Expansion ratio and evolution by water storage	EN 14498	Volume change after 20 days immersion in water at 21 °C : ± 120 %
Durability Sensitivity to water	EN 14498 A	The expansion reaches a constant level after 20 days
Durability Sensitivity to wet-drying cycles	EN 14498 B	No modification of the expansion ratio*
Durability Compatibility with concrete	EN 12637 - 1	Pass
Dangerous substances		Comply with 5.4

\* Swelling capacity doesn't change after 10 wet-dry cycles. One wet-dry cycle = 1 day drying at 50 °C followed by 6 days of immersion in water at a temperature of 21 °C.