

InjectProECO-Polygel

Hydrophilic, flexible polyurethane grout for stopping active water leaks

CSI Div. 03 + 33

03 64 00 Injection Grouting
33 01 30 Operation and Maintenance of Sewer Utilities
33 01 30.81 Manhole Rehabilitation
33 05 61 Concrete Manholes

Product Description:

InjectProECO-Polygel is a hydrophilic polyurethane injection grout designed to react with added water to produce a resilient foam or expansive gel. It is ideal for sealing joints in precast concrete manholes.

Typical Applications:

- Manholes
- Concrete sewer pipes
- Concrete lined tunnels
- Concrete dams

Advantages:

- Effective in stopping high flow active leaks
- Flexible
- Gel or foam consistency determined by water to grout ratio
- Can be injected as resin only in heavy water flows

Installation Procedures:

Refer to the current Aquafin Chemical Grout Handbook and please contact Aquafin Technical Department or your local Aquafin Representative for detailed grouting instructions. Refer to ICRI 340.1-2006 - Guideline for Selecting Grouts to Control Leakage in Concrete Structures.

InjectProECO-Polygel is typically injected with a two-component pump with water as the second component. In active leaks with heavy water flows, Polygel can be injected as resin only. Polygel only needs water to achieve the final foam or gel, to control the reaction speed and to flush, the machine.

• Heavy water leakages

Because of the high reactivity in combination with water, InjectProECO-Polygel is used for shutting off heavy water leakages (up to 5 m³ per minute). The ratio to be used is 1:1 or pure resin.

• Expansion joints

InjectProECO-Polygel can be used in expansion joints because of the foaming capability and good flexibility of the end product as well as a good adhesion to the aggregate. The ratio to be used: InjectProECO-Polygel to water 1:1 to 1:3.

• Gel membrane/screen injection

Because of the low viscosity of the water/polymer mixture, it can be used as a liquid but solidifying gel membrane applied to the positive side of a concrete structure from the negative side; ratio to be used InjectProECO-Polygel to water 1:7 or 1:8. The gel mixture will fill the voids from the aggregates (like sand etc.) behind the wall to avoid that water will come into the wall construction. The procedure is drilling through the wall and pumping the Polygel water mixture via packers.

Physical Properties	InjectProECO-Polygel
Color:	Light Brown
Specific Gravity (ASTM D891):	1.09 - 1.12 g/cc
Viscosity @ 77°F (25°C) (ASTM D2196):	725 - 1025 cps
Percent Solids:	100%
Flash Point (Pensky-Martens EPA 1010):	>200°F (>93°C)
Corrosiveness:	Non-corrosive
Shelf Life:	12 months (1 year)
All data are average values obtained under laboratory conditions. Actual results obtained in the field may vary.	

• Masonry walls/screen injection

Because of the low viscosity in combination with a relatively long pot life the Polygel can be used in masonry walls as a vertical barrier to fill the voids/joints in masonry walls to avoid that water comes through the voids to the surface of the wall. Ratio to be used Polygel to water 1:7 or 1:8. The procedure is drilling holes to 80 % of the wall thickness or until 5 cm from the back of the wall and pumping the Polygel-water mixture via packers in the wall.

• Oakum technique

Because of the reactivity with water the Polygel can be used for the activated oakum technique where oakum or any other kind of carrier material is soaked in pure Polygel. The oakum and the Polygel are applied into any void where small water leakages can be a problem (pipe outlet through walls etc.).

Packaging:

InjectProECO-Polygel: 5 gallon pails

Storage & Shelf Life:

- **Storage:** Product is highly moisture sensitive. Store in unopened, original, undamaged, tightly sealed containers in a dry, enclosed area at temperatures between 40°F - 85°F (5°C to 30°C).
- **Shelf Life:** 12 months when stored properly

Limitations:

- Temperature significantly affects viscosity. Protect material from excessive heating and cooling prior to grouting to avoid affecting viscosity.
- If using water baths to cool or heat pails avoid splashes to prevent water coming in direct contact with resin - this will activate the reaction.
- Do not warm material or packaging above 85°F (30°C).
- Do not reseal containers of contaminated materials as it can create pressure.

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General Information:

All details in particular to the suggestions for the processing and use of the product is based on our present knowledge and experiences at the time of printing. Depending on specific applications, in particular regarding substrates, processing and environmental conditions may affect final results.

Note:

Proper application is the sole responsibility of the user. Applicators are expected to follow ICRI and ACI guidelines as well as other applicable industry standards. Aquafin personnel or representatives are not site inspectors or construction project managers and therefore do not approve surface preparation, mixing, or application of Aquafin products. Site visits by Aquafin personnel or representatives are solely for the purpose of making technical recommendations, not for providing supervision or quality control.

Safety:

Refer to SDS. Avoid contact with skin and eyes. Wear rubber gloves, protective clothing, and safety goggles during mixing and application. **KEEP OUT OF REACH OF CHILDREN.**

LIMITED WARRANTY: AQUAFIN, INC. warrants this product for a period of one year from the date of installation to be manufactured free of defects and to be consistent with its technical properties as stated in our current Technical Data Sheet. This product must be used as directed and within its stated shelf life. AQUAFIN INC. will replace or at our discretion refund the purchase price of any product, excluding cost of labor, which is proven to be defective. Our product recommendations are based on industry standards and testing procedures. It is the buyer's obligation to test the suitability of the product for an intended use prior to using it. We do not guarantee compatibility of Aquafin products with other brands. For this reason, we strongly recommend application of a sample area at the jobsite to help determine suitability with other products. We assume no warranties written, expressed or implied as to any specific methods of application or use of the product. AQUAFIN INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. AQUAFIN, INC. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay. Any claim for a defective product must be filed within 30 days of discovery of a problem, and must be submitted with written proof of purchase.

For Professional Use Only.

Viscosities Based on Temperature:

Temperature (Fahrenheit)	Temperature (Celsius)	Viscosity (Centipoise)
55°F	12°C	1,500 cps
77°F	25°C	875 cps
85°F	30°C	750 cps

Note: Actual results in the field may vary from results above. Warmer temperatures will decrease the reaction time; cooler temperatures will increase the reaction time.

Reaction Times:

Grout:Water Ratio	Gel Time (Seconds)	End Product	Tensile Strength (ASTM D638)	Elongation (ASTM D638)	Die-C Tear (ASTM D624)
1:1	110 sec	Resilient foam	431 psi	462 %	49 pli
1:3	100 sec	Resilient foam	261 psi	1,140 %	51.7 pli
1:5	90 sec	Expansive gel	>163 psi	>1,250 %	43.1 pli
1:8	100 sec	Expansive gel	>145 psi	>1,250 %	43.3 pli

Note: Actual results in the field may vary from results above.