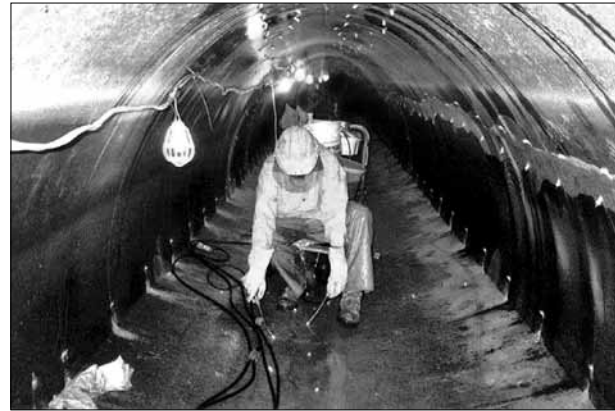


Hydrophobic Polyurethane Grout



Product description

Azo-Grout™ 458 is a hydrophobic polyurethane that forms a semi-rigid foam when reacted with water, providing a watertight seal in underground soil and rock tunnels. When cured in a free-rise situation, Azo-Grout 458 will expand 15 times its original volume and yield into a 6-pound per cubic foot (pcf) foam. Use with Azo-Cat™ 26 to accelerate the reaction time.



Application range

Underground repair

- Mines
- Tunnels
- Subways

Table 1: Physical properties of uncured materials

	Azo-Grout™ 458	Azo-Cat™ 26	Measurement	Test method
Color	pale yellow	clear		visual
Specific gravity	1.112	0.93-0.95		ASTM D891
Viscosity at 77°F (25°C)	450-550	40-60	centipoise	ASTM D2196
Storage stability	12	12	months	
pH	not established	not established		
Toxicity	see SDS	see SDS		
Hazard class	not regulated	corrosive liquid		
Solids	100	100	percent	
Corrosiveness	non-corrosive	corrosive		
Flash point	390 (199)	302 (150)	Fahrenheit (Celsius)	

Table 2: Physical properties of cured materials

	Value	Measurement	Test method
Free-rise density	5 ± 1 (0.080 ± 0.016)	lbs/ft³ (g/cc)	
Tensile strength	80 ± 20	psi	ASTM D638
Elongation	50 ± 10	percent	ASTM D638
Shrinkage by weight	0	percent	in-house
Shrinkage by volume	0	percent	in-house
Toxicity	non-toxic		

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Site preparation

When injecting into concrete cracks and joints, prepare the work site by drilling holes at approximately 45 degree angles to intersect the application site at about half the depth of the concrete thickness. Holes are typically drilled on opposing sides of the fissure in an alternating pattern. The spacing is dependent on the crack size. Flush drill waste from the hole prior to installing the packers.

In situations when stabilizing soil and water cut-off in mines and tunnels are the objectives, simply drill holes through the outside perimeter walls of the tunnel. Each individual situation requires thorough evaluation on how to best add structure to the soil and rock.

Grout preparation

Perform a pre-blend of the Azo-Grout 458 using on-site water to ensure the desired gel time meets the requirements for the application. Azo-Cat™ 26 can be added to the Azo-Grout 458 prior to mixing with water to accelerate the reaction time. The recommended procedure for a reactivity check of the Azo-Grout 458 / Azo-Cat 26 system is:

100 parts by weight of Azo-Grout™ 458
 x parts by weight of Azo-Cat™ 26
 5 parts by weight of water

- Add the Azo-Cat™ 26 to the Azo-Grout™ 458 and homogenize.
- Add the water and mix thoroughly.
- Using the start time as the time mixing begins after the addition of the water:

1. Determine the cream time: the time in which the material just begins to foam.
2. Determine the tack-free time: the time in which the surface of the material is no longer tacky.



Note: Depending on the scope of the project, it may be advisable to consult a manufacturer's representative during installation.

Table 3: Effect of Azo-Cat™ 26 on gel time

Azo-Cat™ 26 level	Cream time	Gel time	Product
2%	38 seconds	152 seconds	flexible foam
4%	29 seconds	69 seconds	flexible foam
8%	18 seconds	35 seconds	flexible foam
12%	15 seconds	25 seconds	flexible foam
16%	9 seconds	20 seconds	flexible foam

Application method

Premix the amount of catalyst needed for the desired gel time. Start with a quantity of material that can be used in a reasonable amount of time. Inject Azo-Grout 458 using a single-component injection pump.

Flush the pump and all mechanical components of all residual grout with Azo-Purge MP2™ when injection is finished.

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Precautions

This material is intended to be used by trained professionals with the proper equipment. The following safety measures are recommended:

- Wear protective gloves, clothing, goggles, hearing protection for noise reduction and hard hats for falling debris.
- Do not eat, drink or smoke while in active contact with these materials.
- Avoid skin contact.
- Wash hands thoroughly with soap and cool water. Never wash the skin with a solvent.
- Anyone experiencing difficulty breathing when working with these materials or showing an allergic reaction should seek fresh air immediately and consult a physician if symptoms persist.

Material storage

Open containers of material should be used quickly to avoid moisture contamination. If a container needs to be resealed, it should be blanketed with nitrogen or dry air [less than -40°F (-40°C) dew point] to minimize water exposure. Refer to the safety data sheets (SDS) for further information regarding these materials. All spills of Azo-Grout 458 should be cleaned up by absorbing the grout into an inert material and then transferring the mixture to an open top drum. Do not seal the waste drums for 24 hours to allow the Azo-Grout 458 to react completely. Dispose of waste material in accordance with state and local regulations.

Packaging

Azo-Grout 458 is available in 5-gallon pails at 45 pounds and 55-gallon drums at 463 pounds.

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