



Injection Hose KIT

AVANTI
Technical Manual

Description

Avanti International's Injection Hose Kit is a preventative chemical grout injection system for the permanent sealing of cold and construction joints in concrete and voids between slurry walls and slabs. The tubing is designed to keep the concrete out of the grout delivery system during the pour of a new wall, but allow Avanti International's chemical grout to be injected at any time after the pour cures and settles. When the low viscosity chemical grout is injected through the hose system under low pressure, the fibers of the outer membrane of the hose act like a valve to allow the injection grout to penetrate voids or cracks formed in the joint. The grout then expands creating a watertight flexible compression seal with mechanical locks and adhesive bonds that will withstand wet/dry cycles.

Application



Injection Hose Kit

Create a watertight seal in cold and construction joints, in joints between slurry walls and slabs, or in any situation requiring a preinstalled injection system using the injection hose with Avanti International grout at any point after the concrete cures. This system may be added in addition to other water stop measures as a compliment or backup, or as the

primary prevention method.

The engineer or applicator should be consulted to determine the number of kits and specific parts necessary for each job. Quantities will depend upon the length of the various runs and number of planned injection points.

Advantages

- Avanti's Injection Hose Kit comes with everything needed for easy installation.
- Adapt Injection Hose Kit on site to the exact length of the construction joint (length of a single run should not exceed 25 feet).
- No special equipment required.
- Injection can be performed at any time after the pour cures and settles.
- Once injected with Avanti grout the pressure of dispersion remains equal over the entire length of the tube.
- Low viscosity grout is injected under low pressure.
- Injection Hose Kit installation doesn't disrupt other building activities.
- No risk of damaging concrete during installation or injection.
- Avanti's Injection Hose Kit creates a permanent seal after injection.
- If there is no leak, injection is not required.
- Form costs are greatly reduced, compared to PVC water stops.

Installation Instructions

1. When pouring the concrete, create a level strip approximately 3/4" wide in the area that will form the joint. This will allow Avanti's injection hose to lay flat and make direct contact with the joint over its entire length.
2. Install the hose onto hardened concrete during formwork installation. If step 1 was not completed accurately, and the installation is on a rough surface, the gap between the hose and the surface should be filled with mastic. Cut the hose to the required length. The length of a single run should not exceed 25 feet.

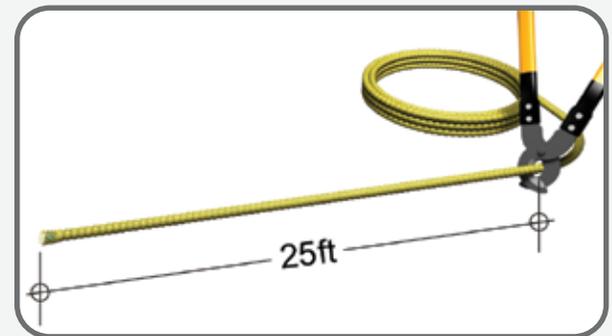


Figure 1

3. Smooth the ends of the cut hose by twisting any loose strings or fragments around the exterior.
4. Slide a blue trumpet over the hose end and screw until the stop mark inside the trumpet has been reached. Test to ensure the connection is solid.

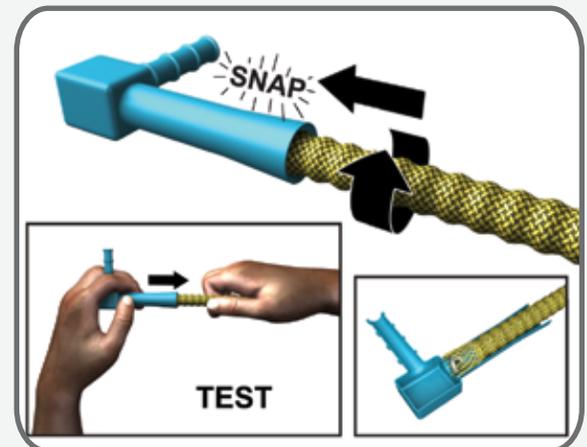


Figure 2

Installation Instructions continued.

- Attach the injection hose to the concrete with the anchoring clips between the inner and outer reinforcing bars. Nail the anchoring clips down with steel nails no more than 12 inches apart. The injection hose can also be attached directly to the reinforcement bars with steel wire.

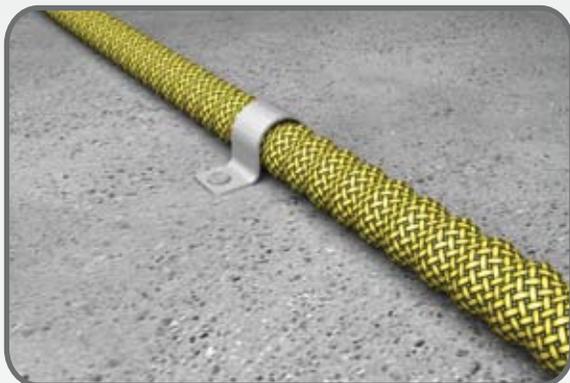


Figure 3

- The flexible yellow PVC hose will attach to the trumpet at one end while the other end will protrude from the concrete at easily accessible places planned as future injection sites. Cut the PVC to a length sufficient to reach the planned injection point and connect one end to the open end of the blue trumpet.

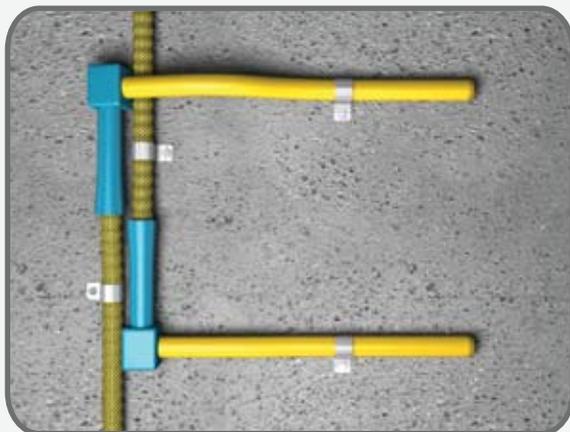


Figure 4

- The PVC hose can be secured with the anchoring clips or attached directly to the reinforcement bars with steel wire.
- The ends of consecutive injection hose runs must have an overlap of approximately 1 1/2" (see Figure 4).

Injection Instructions

- Before injection, consult the Technical Data Sheets and MSDS of the grout.
- Find the open ends of the PVC hose for the run to be grouted. If the PVC at both ends of the run is not readily accessible the run should not be injected and sealing of the joint will require other methods.
- Prepare the grout by adding the catalyst and mixing thoroughly.
- Keep the grout protected from moisture which will trigger a reaction and might cause the resin to harden or foam prematurely within the injection equipment.
- It is highly recommended that separate pumps be used for the water and the grout injection to prevent contamination and blockages. The grout pump should be thoroughly primed using Avanti's AV-208 Technical Grade Acetone to remove moisture from the system before injection.
- The pump should be a single component pump capable of providing low pressure and low volume.
- Insert a 3/8" injection packer in the first length of tube to be injected. Make sure the packer is tightly inserted into the PVC hose. Connect the water pump to the packer and pump until water appears at the opposite end of the run. Crimp the opposite end of the hose run and pressure test to 100 psi.
- Uncrimp the far end of the hose run. Connect the grout pump to the packer and start to slowly pump the grout until it appears at the far end of the run. Close the far end of the run by crimping. Water will be displaced and exit the hose system through the opposite end of the PVC hose. If water is not displaced, the tube might be blocked. In this case, standard crack injection will need to be used for waterproofing the joint (see Avanti's V-PAT manual for crack injection instructions). When all the water has been displaced, grout will appear at the far end of the tube.
- Close the second port by inserting a packer.
- Slowly increase pressure to approximately 250 psi. Hold pressure for three minutes. Stop pumping, disconnect the pump hose, and move onto the next length of hose system. Do not remove the packers from the ports until the resin is fully cured.
- When the injection is finished, flush the pump and hose with Avanti AV-284 Pump Wash or AV-208 Technical Grade Acetone to prevent the possibility of the grout curing in the system. If the job is complete and the pump is to be stored, prime the pump with AV-284 Pump Wash before storage.
- Any products to be disposed should be handled in the manner dictated by local government regulations. Refer to the MSDS for general recommendations. In case of spills and accidents, refer to the MSDS of the product in use. When in doubt, contact Avanti International support at 800.877.2570. Always wear appropriate protective gear. Avanti International recommends that gloves and protective goggles be worn when handling chemical products. See MSDS for further recommendations.

Product Information

Technical Data/Properties

Outside diameter	1/2"
Inside diameter	5/16"
Length	25 linear feet maximum
Weight	~ 4.5 pounds / 25 linear feet
Operating temperature	Up to 70° C
Steel wire tensile strength	~ 1800 N/mm ²
Filter pore diameter	35 um

Appearance

- The light green spiral shaped injection hose is porous over its entire length with an outside diameter of 1/2".
- The reinforced spiral of steel wire inside the injection hose prevents collapse of the tube and blockage of the injection channel.
- A non-woven filtrating membrane filters even the smallest cement particles during the pour, but allows free flow of the resin during injection of the tube.
- An outer synthetic membrane protects the inner membrane. Injection under pressure makes the fibers of the outer membrane act like a valve to allow the injection grout to penetrate well into the voids and honeycombs in the concrete.

Storage

Unlimited in a dry place.

Health and Safety

For full information, consult the appropriate MSDS.

Packaging

Avanti's hose system is supplied in kits (non-assembled) to allow for modification of hose length on the job site.

Kit Includes:

Hose System	100 ft.
Reinforced PVC Tube	10 ft.
Blue Trumpets	10 pieces
Anchoring Clips	100 pieces

Warranty Statement

The data, information, and statements contained herein are believed to be reliable, but are not construed as a warranty or representation for which Avanti International assumes any legal responsibility. Since field conditions vary widely, users must undertake sufficient verification and testing to determine the suitability of any product or process mentioned in this or any other written material from Avanti for their own particular use.

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822 Bay Star Boulevard
Webster, Texas 77598

800 . 877 . 2570
281 . 486 . 5600