

Polywater®

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INSTRUCTIONS FOR USE

POLYWATER ZIPSEAL DUCT SEALANT (ZIP-25)



POLYWATER ZIPSEAL DUCT SEALANT

ZipSeal seals ducts with excellent pressure-blocking in challenging environments. It adheres to metal, concrete, and plastic surfaces. ZipSeal holds up to 30 feet (9 m) of water head. This semi-permanent seal is reenterable and chemically resistant.

INSTALLATION

Installation temperature:

35°F to 95°F (4°C to 35°C)

In-service temperature:

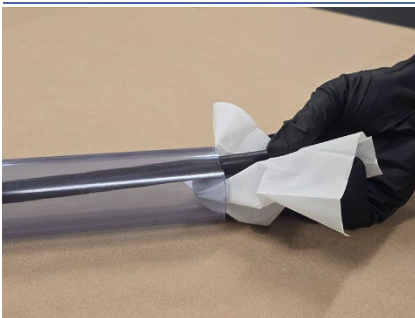
-20°F to 200°F (-30°C to 95°C) continuous

-40°F to 250°F (-40°C to 120°C) peak

- Application quantity is measured in marks on the side of the cartridge.
- Deploy slowly, about 5 seconds per mark.
- Spread out injections for the best foam coverage.
- If gaps are present after application, foam can be applied to fill gaps.
- If reusing a syringe, be sure to replace the cap immediately after application.

SAFETY

- Wear eye protection.
- Use protective gloves and protect bare skin.

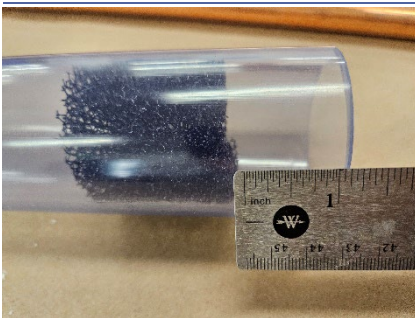


Clean duct or opening with a solvent wipe

1. Remove any loose debris or rust from the duct/opening and clean all surfaces. If using a solvent cleaner, confirm the solvent has dried before application of ZipSeal.

For best results, sand or abrade all surfaces to increase adhesion of ZipSeal.

Note: Steel type conduit must be sanded and cleaned.



Push mesh into the conduit or opening, separating wires

2. Reference Table 1 for length of mesh strip required. (See Step A below for vertical application usage.) Tear off the required length and insert 1" (25 mm) past the duct/opening. Weave mesh strip between wires to create as much separation as possible.

TABLE 1

Duct Size, Inches (mm)	Approximate Quantity Liquid ZipSeal	Approximate Length of Mesh Strip Needed
3/4" (20 mm) and below	1 full mark	1" (25 mm) or less
1" (25 mm)	2 full marks	1" (25 mm)
1 1/4" (32 mm)	2 full marks	2" (50 mm)
1 1/2" (38 mm)	3 full marks	4" (100 mm)
2" (50 mm)	5 full marks	6" (150 mm)



Gap

- Depending on the cable/pipe and duct/opening sizes there may or may not be a small gap at the top of the conduit or opening. This is normal and ZipSeal will continue to expand and seal.



Attach the static mixer

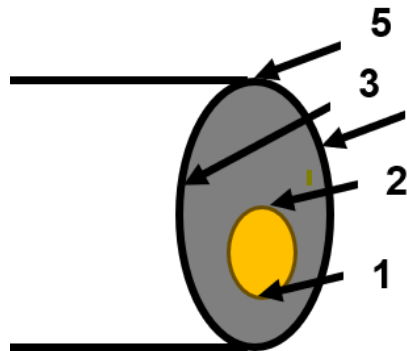
- Remove and save the syringe plug. Screw on the static mixer, holding the syringe upright.



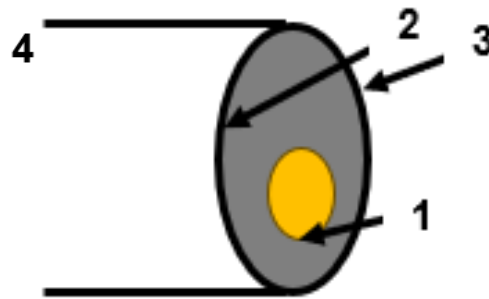
Marks on the side of syringe

- Refer to the diagrams of approximate injection points based on different sized ducts. Inject a full mark at each injection point. **The golden rules to follow for application are:**

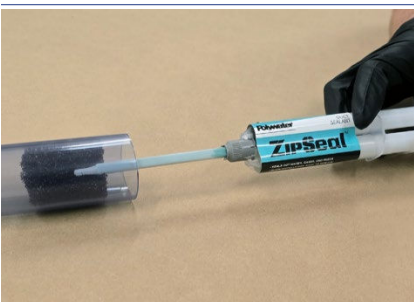
- Apply slowly, taking about 5 seconds per mark
- Apply ZipSeal from the bottom of the conduit/opening to the top, around wires/inner pipes and around the conduit/opening edges.
- The more you disperse ZipSeal injections, the better



2" (50mm) Mark Applications



1½" (38 mm) and below General Mark Applications



Apply ZipSeal into the conduit or opening or opening

- Insert the static mixer approximately 1" (25 mm) into the mesh strip and inject foam following the tips in step 5. Do not start counting marks until ZipSeal exits the mixing nozzle tip. Be sure to use an entire mark for each injection.



Replace static mixer with plug

7. ZipSeal will begin to expand in 10-20 seconds. Take care to prevent movement of wires and disturbing foam during expansion. This can create gaps, which will require injection of additional foam. After all marks are injected, remove the static mixer and replace the syringe plug immediately.



Check ZipSeal Installation

8. ZipSeal will fully expand in approximately 1 minute and will harden in 2 minutes. Inspect the seal for any obvious gaps. These can be filled with additional ZipSeal.

Dispose of any excess material in accordance with local and national regulations.

Storage: ZipSeal is sensitive to sun, water, and heat. To store the ZipSeal syringe up to a month after initial use, place the partially used syringe into the brown pouch and tape it shut. Place the brown pouch in a dry, cool, dark place until ready to use.



Vertical Application

- A. For vertical applications, wrap the mesh tighter to eliminate gaps. Insert the mesh approximately 3" (75 mm) deep into the duct/opening. Apply the appropriate number marks (per Table 1), dispersing injection points evenly. Inject the foam on top of the mesh, allowing for expansion both up and down. Application speed should remain approximately 5 seconds per mark.



Annular space sealing

- B. For annular spaces, insert mesh into the opening. Follow the general instructions above, especially the golden rules from Step 5. ZipSeal will fill approximately 1.25 in³ (20 cm³) per mark. Alternatively, the formula below can be used to calculate the number of marks necessary to fill an annular space:

For imperial (inches): # of marks = $5 * (r_1^2 - r_2^2)$

For metric (centimeters): # of marks = $(r_1^2 - r_2^2)/1.3$

Where: r_2 = inner radius of the outer, larger opening
 r_1 = outer radius of the inner, smaller opening
Always round up the number of marks needed.

ADDITIONAL INSTRUCTION TIPS

CLOGGED/LEAKING CARTRIDGE

If the small orifices in the cartridge tip become clogged, poke through and loosen hard material or crust with a wire. ZipSeal may be used as directed once the clog is cleared. If material is leaking onto the syringe plunger, do not use the syringe.

RE-USE AND CLEAN-UP

Syringe can be reused several weeks after initial use if it was capped with the syringe plug immediately after use. When ready to use, remove syringe plug and check to make sure orifices are clear of any hardened sealant.

Unreacted material may be cleaned from surfaces with a solvent wipe such as Polywater Type HP™ Multipurpose Solvent Cleaner. Part A, amber resin will react with water if surfaces are washed with soap and water solution. Once reacted, material has strong adhesion and may be scraped or cut from surface. For skin contamination, wash thoroughly with soap and water. See SDS for further information.

WATER IN DUCT OR OPENING

ZipSeal can seal an active water leak by using a double-seal installation method. This is accomplished by inserting a tightly wrapped mesh strip 3" (75 mm) into the duct or opening. Inject the required quantity of ZipSeal. This should react and stop the majority of the active leak within a few minutes. Then dry the portion of the duct or opening between the first seal and the mouth of the duct or opening. Follow Steps 1-8 above to make the second, full seal.

REMOVAL

ZipSeal can be removed from duct/opening. Use best practices and comply with NEC or other national electric codes by de-energizing electrical equipment before any seal removal is attempted. Use a long screwdriver to break the bond between the foam and the inside of the duct/opening. Use of a hammer will aid pushing the screwdriver through the foam. Work around the entire duct/opening until the bond has been broken making the cable or pipe easy to remove.

COLD WEATHER USE

ZipSeal can be used in temperatures down to 35°F (4°C). Reaction is slower, but the sealant will completely foam and cure with time. At cold temperatures, ZipSeal becomes slightly viscous and flows through the static mixer at a slower rate. Cure times are as follows:

CARTRIDGE TEMPERATURE	35° F (4° C)	70° F (21° C)
Foaming, Expansion Complete	2 minutes	1 Minute
Hard, Non-sticky Skin Formation	3-4 minutes	2 Minutes

For faster curing times in cold temperatures, keep ZipSeal warm prior to use.

LARGE VOIDS

The seal should be inspected after installation. If voids or holes are discovered, additional ZipSeal may be added at any time. It will bond very well to existing, cured material. Apply ZipSeal into the void(s). Let ZipSeal expand and inspect for voids again.

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