



### **Small Diameter TECTITE Installation and Specifications Manual**

TECTITE fittings are a heat free method for joining Copper, CPVC, and PEX tube. TECTITE provides a clean and easy joining method designed to save time and money on installations. Installing a joint with TECTITE is simple, requiring no extra materials beyond the TECTITE fitting for Copper and CPVC tubing installations, and a TECTITE fitting plus a tube liner for PEX installations. The use of solder, flux, and heat, or special pressing tools is eliminated. This lowers costs, reduces labor time, and allows a clean and efficient installation process. TECTITE is a re-moveable and re-useable fitting system that provides the ultimate flexibility in plumbing system assembly.

#### **Warranty**

TECTITE fittings carry a 50-year warranty against manufacturing defects. Contact an EPC representative for details. All warranties are subject to following good installation practices as outlined in this installation manual.

#### **Materials and Material Compatibility**

TECTITE fittings are designed and manufactured to strict specifications and quality systems. TECTITE fittings are manufactured from Copper or Copper Alloys and utilize EPDM o-ring seals, Nylon and Acetal plastic components, and a 316 Stainless Steel retaining ring. An ANSI/NSF 61 listed silicone grease is used to lubricate TECTITE fittings.

TECTITE fittings are designed for use with ASTM B88 hard drawn and annealed Copper tube, Type K, L, or M, in the 1/4" through 1" size range; CPVC water tube per ASTM D2846/2846M-99, and PEX water tube that meets the requirements of ASTM F876, F877 using a tube liner as designed by EPC.

All TECTITE fittings are designed to operate at temperatures from 0° to 250° F at a maximum working pressure of 200 psi, with various liquids, and gasses.

TECTITE fittings must not come into contact with household cleaning products, paints, greases, flux, mineral oils, adhesives, ammonia, nitrates, or other solvent base materials that may be used during or after installation.

The exterior surface of TECTITE fittings should not be painted.

The use of proprietary chemicals to flush pipes during plumbing system startup should be reviewed with an EPC representative.

#### **Installation**

The TECTITE joining system is designed with easy installation in mind. Basic joining and removal procedures are identical for every type and size of TECTITE fitting with only minor variations due to the type of tube material being installed. The following instructions address the assembly procedures by tube material type.





### TECTITE Fitting Assembly for Copper and CPVC Tube

Copper water tube per ASTM B88, Types K, L, & M, both hard drawn and annealed, may be used with TECTITE fittings. In addition, CPVC water tube per ASTM D2846/2846M-99 may be used with TECTITE fittings (see page 1 for a list of compatible materials).

Step 1 – Cut the tube with a tube cutter. The cut should be perpendicular to the centerline of the tube.

Step 2 – Remove burrs by chamfering the tube at the inside and outside diameters..

Step 3 – Mark the tube exterior at the depth shown. The tube insertion depth is the same whether the tube material is Copper, CPVC, or PEX.

<u>Tube Size</u>	<u>Insertion Depth</u>
1/4	15/16"
3/8	15/16"
1/2	15/16"
3/4	1-1/8"
1	1-5/16"

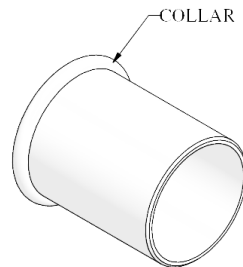
Step 4 – Holding the fitting tightly, insert the tube straight into the fitting with a twisting motion until the depth mark on the tube outside diameter is aligned with the end of the fitting. If the mark and the end of the fitting are not aligned, then continue to push the tube to the full insertion depth.

**Note - Inserting a properly chamfered tube straight into the TECTITE fitting cup will produce a leak free joint, reduces insertion force, prevents o-ring damage, and insures the tube is easily inserted to the correct insertion depth. Inserting the tube at an angle and pulling it into proper alignment is poor assembly practice and may result in a leaking joint.**

### TECTITE Fitting Assembly for PEX Tube

TECTITE fittings are designed to join PEX water tube that meets the requirements of ASTM F876, F877. In order to make an effective joint, a tube liner is required, see Figure 1. Tube liners have been specifically designed by EPC for use with the TECTITE fitting product line; do not substitute any other manufacturer's tube liner. Liners are available in 1/4" through 1" sizes.





**Figure 1**  
**Typical TECTITE Tube Liner**

Follow steps 1 through 3 as described in the written description above.

Once the tube outside diameter is marked at the proper depth, the tube liner is then inserted into the end of the tube. The liner must be pushed into the tube until the liner collar is set firmly against the end of the PEX tube.

With the tube liner in place, complete step 4 above, insert the tube into the TECTITE fitting. Verify that the depth mark on the outside of the PEX tube aligns with the end of the TECTITE fitting. If the mark and the end of the fitting are not aligned, then insert the PEX tube to the full insertion depth.

**Note - Inserting a properly chamfered tube straight into the TECTITE fitting cup will produce a leak free joint, reduces insertion force, prevents o-ring damage, and insures the tube is easily inserted to the correct insertion depth. Inserting the tube at an angle and pulling it into proper alignment is poor assembly practice and may result in a leaking joint.**

### Guide to Tube Removal From TECTITE fittings

The TECTITE joining system has been designed with easy, efficient removal or disconnection in mind.





**The following removal procedure is used for the 1/4" thru 1" TECTITE fittings and all compatible tube materials.**

1. Select the correct size removal tool for the job. Place the removal tool around the tube next to the fitting assembly. The flat side of the tool should be placed in contact with the fitting.



**Figure 2**  
**TECTITE Removal Tool**

2. Push the removal tool toward the fitting firmly until the grab ring is compressed. With the removal tool firmly held in place, use a twisting, and pulling motion to remove the tube from the fitting. Release the removal tool after the tube is removed.
3. If the tube is to be re-used, check the tube for score marks, and any other defects such as dirt, or chips. If any defects exist, the tube must be repaired as needed to meet the installation requirements detailed previously in this installation manual.
4. Check the internal parts of the fitting. The grab ring, protection ring, and o-ring must be in the housing and aligned with the fitting opening. If all of the parts are in good condition, and aligned, then the fitting is ready to be assembled with a properly prepared pipe or tube.
  - a. If the tube material is PEX the PEX liner might stay in the fitting after tube removal. If this occurs the liner must not be removed as damage to the grab ring may result. The PEX liner can be reused in this situation with PEX tube **only**. Copper or CPVC shall not be used with a fitting that has had a PEX liner forcibly removed.
5. TECTITE Removal Tools are available from EPC to fit 1/4" thru 1" nominal sizes.





## General Installation Guidelines

### Health and Safety Warning!

- **Do not insert anything into the TECTITE grab ring mechanism other than water tube, it may not release! This warning includes human body parts and is critical to your health and personal safety. Seek emergency medical service if you become entangled in the grab ring mechanism.**

To ensure that the fittings stay clean, and the o-ring is protected from damage, never remove the fitting from its package until immediately prior installation.

Heat should not be applied to TECTITE fittings, either directly or indirectly.

TECTITE fittings should not be installed in soldered or brazed piping systems until after the components have been allowed to cool. The plumbing system should be cool to the touch at the time of installation.

### **CAUTION, BE PATIENT, BURN HAZARD!**

Soldering or brazing should not be done within 12" of a TECTITE fitting.

DO NOT USE ANY ADDITIONAL LUBRICANTS, OR SEALING COMPOUNDS WITH TECTITE FITTINGS. Clean water may be used as a lubricant, when permitted by local plumbing codes.

EPC recommends the use of a good quality tube cutter with a sharp wheel. This will create a tube end that is ideal for chamfering. A consistent chamfer width, free of burrs, is required to produce a proper TECTITE fitting to tube joint. Failure to do so voids any and all warranties.

EPC does not recommend the use of a saw to cut tube. If you do use a saw, select a fine toothed blade. Take care to ensure that the tube end is cut square, de-burred, and then carefully chamfered per installation instructions at the ID and OD of the tube.

Failure to chamfer the tube end at the inside diameter creates a situation that generates flow turbulence in plumbing systems. Turbulence, in turn, creates flow noise and the possibility for corrosion of the TECTITE fitting, plumbing tube, or both. Failure to chamfer the tube end at the inside diameter voids any and all warranties.

Wipe the tube end to remove all dirt and debris. This prevents damage to the o-ring when inserting the tube.

TECTITE fittings may be removed and re-used with tube ends prepared as described in this installation manual.





TECTITE fittings may be closely spaced without affecting joint performance provided tube insertion depth requirements are met.

TECTITE fittings are intended to be used with tube that is free of paint or other foreign matter, heavy scratches, or dents on the exterior surface. Joints made using tube exhibiting these problems voids any and all warranties. These conditions create leak paths.

### **Installation Do's and Don'ts Summary**

#### **Do's:**

- Do use tube that has a clean and undamaged exterior surface.
- Do cut the tube square (perpendicular) to the tube centerline.
- Do chamfer the tube OD and ID so that a smooth surface and a consistent chamfer width are achieved.
- Do inspect for and repair any sharp edges on the tube end after chamfering.
- Do insert the tube straight into the fitting opening.
- Do rotate the tube during insertion.
- Do use a TECTITE tube liner with PEX tube.
- Do support tube assemblies, TECTITE fittings will rotate.

#### **Don'ts:**

- Don't make a crooked tube cut.
- Don't forget to chamfer tube ID and OD.
- Don't solder or braze within 12" of a TECTITE fitting.
- Don't lubricate with anything but clean water (check local plumbing codes).
- Don't insert the tube at an angle (This is poor assembly practice and may dislodge, cut, or nip the o-ring).
- Don't try to repair a TECTITE fitting.
- **Do not insert anything into the TECTITE grab ring mechanism other than water tube, it may not release! This warning includes human body parts and is critical to your health and personal safety. Seek emergency medical service if you become entangled in the grab ring mechanism.**

