

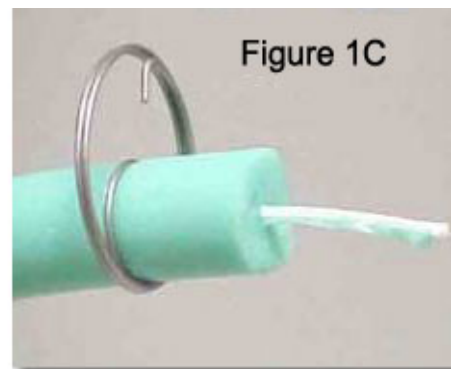
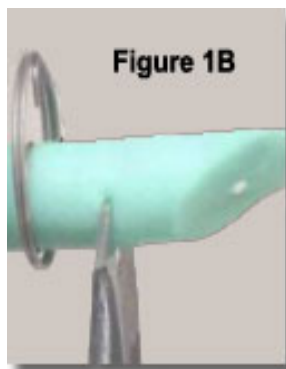
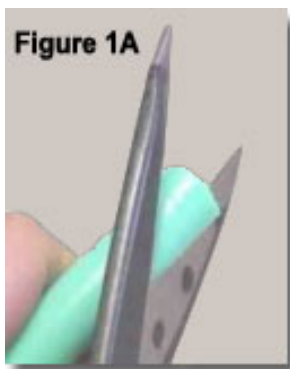
How To Install IceLoc:

Directions also online at www.iceloc.com choose "How To"

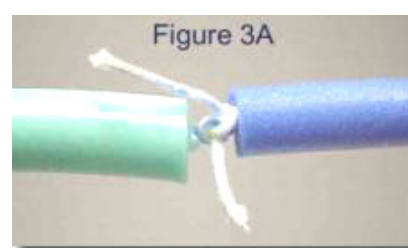
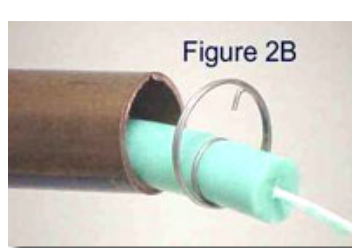
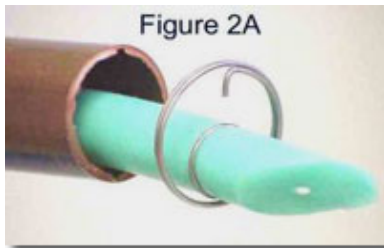
Do not be alarmed by the size of the Ice-loc core compared to the size of the pipe. Core gets smaller inside the pipe, when there is water pressure compressing the core.

1. To begin the installation process, snip the ends of the silicone sponge at a sharp angle. Please see Figure 1A.
2. Next, slide stainless steel clip onto sponge. **Crimp capture ring on clip a little tighter with your pliers to secure clip on core. This will help prevent rubber core from sliding through the clip when water pressure is applied.**
3. If this is a splice or transition point, after the clip is attached, snip the sponge straight about a few centimeter back, enough to make a secure knot, from initial angle cut. Take care not to cut internal twine. Only remove some silicone surrounding twine. The purpose this is to expose the twine inside the sponge for creating splices or core size transitions. Please see Figure 1B and 1C. A retaining clip is applied at this opening of the pipe.

The sharp angle cut on the ends of each run is to pierce the water for a much better flow (see Fig. 1A and 2A)



4. After the silicone sponge is prepared, the next step is to insert the sponge into your potable water pipes. Insert sponge into pipe and secure to inside of pipe with clip. Silicone sponge should protrude from pipe. Please see Figure 2A and 2B.



5. If you need to extend sponge for longer pipe, tie the twine exposed as per instruction #3, from each core to one another with a good knot as you pull both cores together. See Figure 3A

6. For maximum protection ICE-LOC® should be inserted to the full length of pipe that is exposed to cold temperatures.

Determine ICE-LOC® Sizing Needs

Prior to installing ICE-LOC®, determine what size of silicone sponge will be needed for your project

- 5/8 in. core (Lt. Green) - for 1 in. pipe
- 1/2 in. core (Blue) - for 3/4 in. pipe
- 1/4 in. core (Pink) - for 1/2 in. pipe

Larger Sizes

A good alternative for pipe larger than 1" is to use at least two green cores for 1.5 inch pipe and at least four green cores for 2 inch pipes. The relationship of ICE-LOC® core to pipe size, is **not** linear from smaller pipe diameters to large pipe diameters. **Example:** change of area/volume from 1 inch pipe to 2 inch pipe is a factor of **4x**. **Remember**, Reminder! ICE-LOC® core gets much smaller under city water pressures as with single core installation. Core volume to pipe volume for the larger pipes still approximates the same ratios as it is for the smaller pipes.

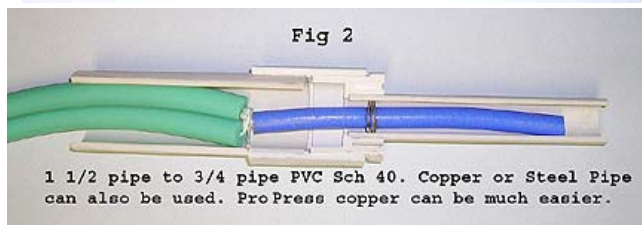
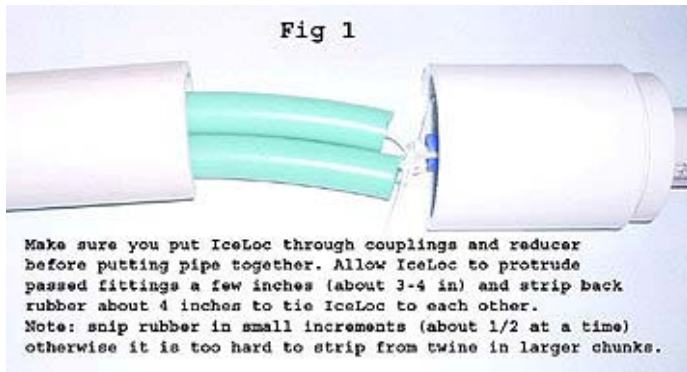
You can pull those cores one at a time or pull the cores together into the larger pipe. There are no clips for larger pipes. Expose the twine at the end of the cores and tie the exposed twines together. Don't forget to have cut the ends leading end of the cores at a sharp angle so water can flow much easier over cores. **See below how to anchor.** Larger diameter pipes almost always reduce to 1 inch or smaller in the final end use.

There are stainless steel spring clips to complement pipe sizes for 1/2 in. pipe, 3/4 in. pipe and 1in. pipe only.

Example: For larger pipes, say 1 1/2, place 2 green ICE-LOC® core into pipe as you would with smaller pipe. At this point, just have the two cores tied together (there is no clip for this larger size). No clip needed the ICE-LOC® core will **not** fold back on itself without a clip in this case.

The larger pipe is usually reduced down in size to say a 3/4 inch pipe (or one inch pipe, green). At that point the single blue core can be tied to the 2 green cores used for the 1 1/2 pipe as shown below. Now a 3/4 inch blue core pipe clip can anchor the whole section. Make sure the single core protrudes into the 1 1/2 pipe so the two cores are set back away from the reduced input to the 3/4 inch pipe so as not to impede flow. You can pull back green cores to take out the slack (see fig 2).

Remember, you can use steel fish tape as used for pulling electrical wire through conduit to get core into a length of pipe.



ICE-LOC® can be used in pipes made of PVC Schedule 40 or better, Type L copper, steel or galvanized pipes. Type M copper can also benefit from ICE-LOC® during freezing conditions, but keep in mind that Type M copper typically has a very thin wall and may not survive many freeze cycles even with IceLoc. If Type M is in place, using ICE-LOC® may help prolong the pipe's lifespan. Some form of protection is better than no protection.

Type M; is typically bought by home owners (economy grade) and not installed by professional plumbers when they are doing the plumbing. Not usually allowed by plumbing code for pipes under pressure.

NOTE:

Not recommended for Pex Pipe (too many non-typical sizes of tubing using ID inserted barbed fittings). Also Not for CPVC pipe as pipe sizes are as with Pex Pipe and pressure rating is low. Not tested, therefore not approved for Fire Suppression Pipes.

Copper Specifications (annealed condition)

- 1/2in. Type M rated 430-psi -- vs. -- 1/2in. Type L rated 625-psi.
- 3/4 in. Type M rated 420-psi -- vs. -- 3/4 in. Type L rated 590-psi.
- 1 in. Type M rated 320-psi -- vs. -- 1 in. Type L rated 510-psi.

Not intended for type M copper.

General Application Questions

1. Can I solder with ICE-LOC®?

The ICE-LOC® silicone sponge can withstand solder temperatures in copper pipes, but only the use of low temperature solder joints. As long as the copper piping isn't exposed to continued heating, ICE-LOC® will hold up just fine. The silicone sponge cannot however withstand applications that require the use of high temperature solders, such as silver solder (not to be confused with low temperature silver solder used to replace leaded solder). These high temperature joints apply to industrial applications. The ICE-LOC® silicone sponge can then be fished through the pipe after the high temperature joints have been made and allowed to cool down. It is a good idea in all situations to tin all pipe pieces first, to avoid unnecessary exposure of core to continued heating.

Remember ICE-LOC® will not protect a copper pipe that had a freeze split and was repaired by soldering. Split can still open where it was repaired. The damaged section must be removed and replaced with new couplings and a new piece of added pipe. This is a repair that must be done by a certified plumber.

2. What if I use a ball valve fitting (plastic valves such as PVC)?

A fitting that retains water, such as a ball valve, when closed, traps a small volume of water and is subjected to high pressures when frozen. ICE-LOC® can't be placed in the valve ball, but the valve can be protected by drilling a small hole (3/16-1/4 in.) through **one side only of the inner ball** before using the valve. This allows ice to expand out of one side of the ball and into the pipe with ICE-LOC®. Pumps and other types of water retaining reservoirs must be drained or prevented from freezing. ICE-LOC® cannot be placed inside a pump.

3. What are additional techniques to install ICE-LOC®?

ICE-LOC® can be applied to a piping system by using a fish tape – commonly used by electricians -to pull electrical wire through a conduit. The tape is first inserted through the pipe and the ICE-LOC® sponge is attached to the end of the steel tape by the center twine. The silicone sponge can then be pulled through the pipe.

Another method that can be used is attaching a piece of wadded up plastic bag material to carpenter's twine and then blowing through with a compressor.

Using a shop vacuum on one end to suck the twine through the pipe is an additional technique. then tie twine to Ice-Loc and pull it through.