



**Strength** and **Durability** for **Life**

GUIDELINES

# Installation Guide for Ductile Iron Pipe

Last Revised:  
May 2015

## ANSI/AWWA C105/A21.5 Installation Methods



### Method A

In this method, which is preferred by most utilities and contractors, one length of polyethylene tube, overlapped at the joints, is used for each length of pipe.



### Method B

A polyethylene tube is used for the barrel of the pipe and separate pieces of polyethylene tube or sheet for the joints. *Note: Method B is not recommended for bolted-type joints unless an additional layer of polyethylene is provided over the joint area as in Methods A and C.*



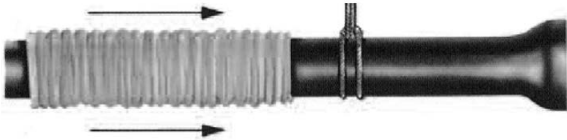
### **Method C**

Each section of pipe is completely wrapped with a flat polyethylene sheet.

### **Method A: Step-by-step Installation Guide**

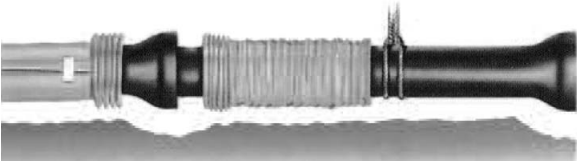
Although ANSI/AWWA C105/A21.5 includes three different methods of installing polyethylene sleeving, most utilities and contractors prefer to use some form of Method A. Two popular forms are explained in detail below.

### **Method A: Normal Dry Trench Conditions**



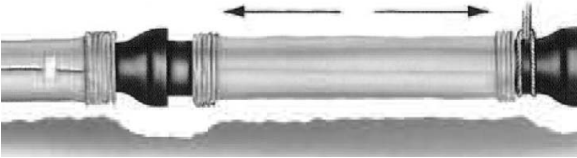
#### **Step 1.**

Cut a section of polyethylene tube approximately 2-feet longer than the pipe section. Remove all lumps of clay, mud, cinders, or other material that might have accumulated on the pipe surface during storage. Slip the polyethylene tube around the pipe, starting at the spigot end. Bunch the tube accordion fashion on the end of the pipe. Pull back the overhanging end of the tube until it clears the pipe end.



### Step 2.

Dig a shallow bell hole in the trench bottom at the joint location to facilitate installation of the polyethylene tube. Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe.



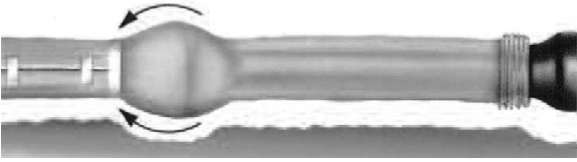
### Step 3.

Move the cable to the bell end of the pipe and lift the pipe slightly to provide enough clearance to easily slide the tube. Spread the tube over the entire barrel of the pipe. *Note: Make sure that no dirt or other bedding material becomes trapped between the wrap and the pipe.*



### Step 4.

Make the overlap of the polyethylene tube by pulling back the bunched polyethylene from the preceding length of pipe and securing it in place. *Note: The polyethylene may be secured in place by using tape or plastic tie straps.*



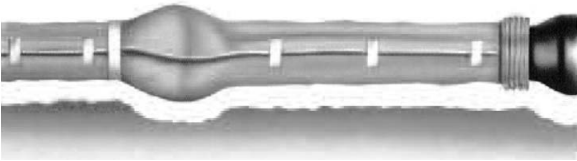
### Step 5.

Overlap the secured tube end with the tube end of the new pipe section. Secure the new tube end in place.



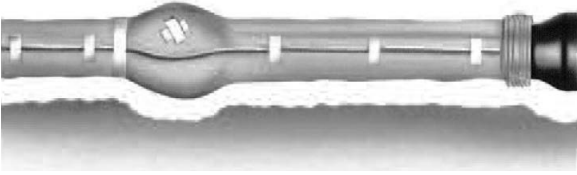
### Step 6.

Take up the slack in the tube along the barrel of the pipe to make a snug, but not tight, fit. Fold excess polyethylene back over the top of the pipe.



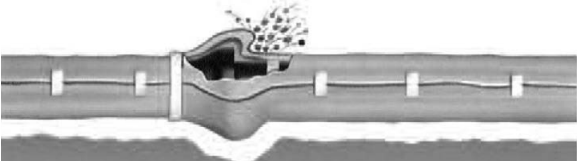
### Step 7.

Secure the fold at several locations along the pipe barrel (approximately every 3-feet).



### Step 8.

Repair all small rips, tears, or other tube damage with adhesive tape. If the polyethylene is badly damaged, repair the damaged area with a sheet of polyethylene and seal the edges of the repair with adhesive tape.



### Step 9.

Carefully backfill the trench according to the procedures in AWWA C600 Standard. To prevent damage during backfilling, allow adequate slack in the tube at the joint. Backfill should be free of cinders, rocks, boulders, nails, sticks, or other materials that might damage the polyethylene. Avoid damaging the polyethylene when using tamping devices.

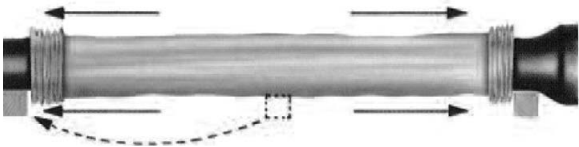
## Alternate Method A: Wet Trench Conditions

In wet, sloppy trench conditions, the pipe should be completely covered by the polyethylene tube before it is lowered into the trench. This alternate method is illustrated below.



### Step 1.

Cut the polyethylene tube to a length approximately 2-feet longer than that of the pipe section. Slip the tube over the pipe.



### Step 2.

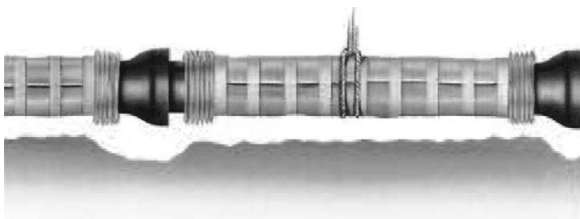
Spread the tube over the entire barrel of the pipe, pushing back both ends of the tube until they clear both pipe ends. Make sure the tube is centered on the pipe to provide a 1-foot overlap at each end.



### Step 3.

Take up slack in the tube to make a snug, but not tight, fit. (See Step 6 above.)

Circumferential wraps of tape should be placed at 2-foot intervals along the barrel of the pipe to minimize the space between the polyethylene and the pipe. Use plastic tie straps or wrap a piece of tape completely around the pipe at each end to seal the polyethylene, leaving ends free to overlap the adjoining sections of pipe.



### Step 4.

Lower pipe into trench and make up pipe joint. Be careful not to damage the polyethylene when handling or jointing the pipe. Complete installation following dry condition Steps 4, 5 (taking care to seal ends of overlap by using plastic tie straps or wrapping tape completely around the pipe at each end), 8, and 9 above.

*Note: When lifting polyethylene-encased pipe, use a fabric-type sling or a suitably padded cable or chain to prevent damage to the polyethylene.*

If you have any problems or questions about installing polyethylene encasement, contact DIPRA or one of its member companies.



**Table 3****Minimum Flattened Polyethylene Tube Widths for Push-on Joint\* Pipe**

Nominal Pipe Size (inches)	Flat Tube Width (inches)	Nominal Pipe Size (inches)	Flat Tube Width (inches)
3	14	20	41
4	14	24	54
6	16	30	67
8	20	36	81
10	24	42	81
12	27	48	95
14	30	54	108
16	34	60	108
18	37	64	121

\*Larger tube widths may be required for other types of joints.

## Installing Pipe with Polyethylene Protection



