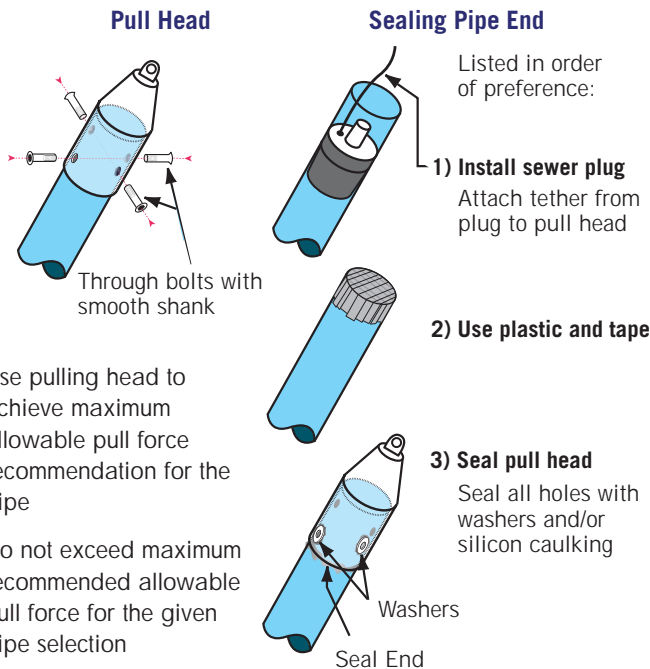


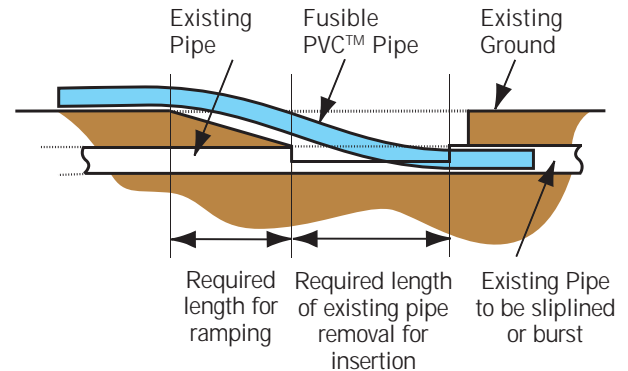
# INSTALLATION PROCEDURES

## 1) Pulling Head Installation and Pipe End Sealing



- Use pulling head to achieve maximum allowable pull force recommendation for the pipe
- Do not exceed maximum recommended allowable pull force for the given pipe selection

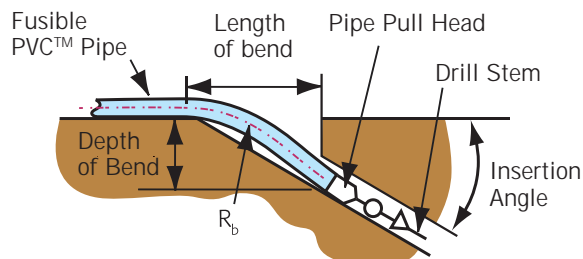
## 2) 'S' Curve - Slip Line or Pipe Burst Insertion



CONTACT YOUR IPEX REPRESENTATIVE TO:

- Determine 'S' curve length from depth of host pipe and size of Fusible Brute™ and Fusible Series™ pipe.
- Determine required length of pipe removal, pit and tail ditch from 'S' curve dimension

## 3) Horizontal Directional Drilling (HDD) Insertion

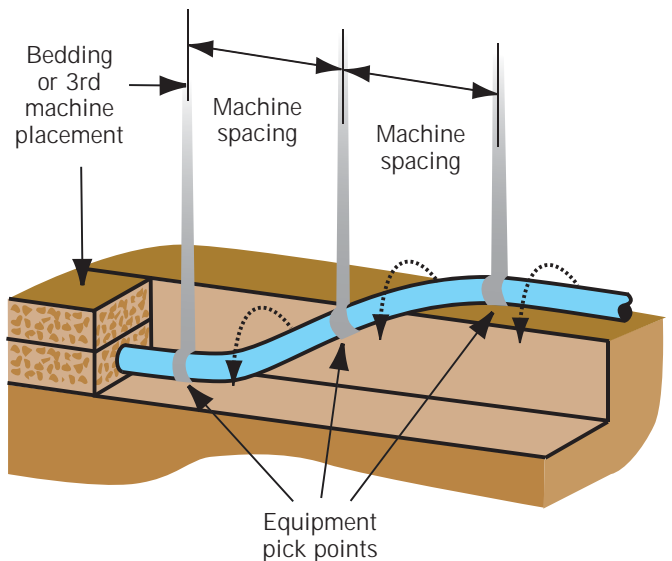


1. Determine insertion angle in degrees.
2. Determine length and depth factors from table, based on insertion angle
3. Consult IPEX literature, website, or representative for the allowable bend radius ( $R_b$ ) to determine the required length of bend, and depth of insertion for your Fusible PVC™ product.
4. Multiply the respective factor times the allowable bend radius ( $R_b$ ) to determine the required length of bend and depth of insertion for your Fusible PVC™ product.

Curve Length and Depth Factor from Insertion Angle

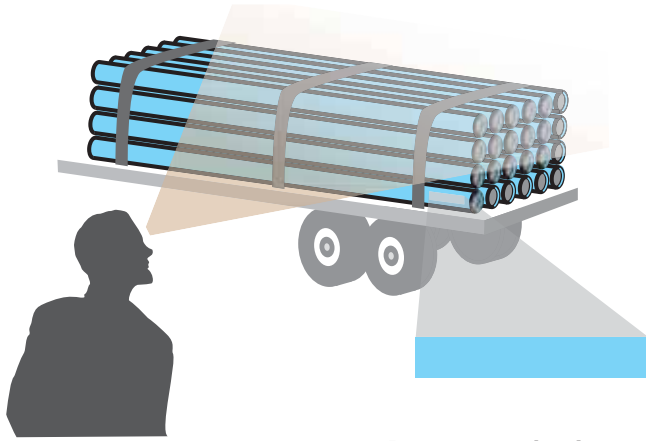
Insertion Angle (°)	Length Factor	Depth Factor
6	0.280	0.022
8	0.276	0.039
10	0.342	0.060
12	0.407	0.086
14	0.469	0.117
16	0.530	0.152

## 4) Direct Bury Installation



1. Determine 'S' curve length from installation offset and your Fusible PVC™ product.
2. Use machines at beginning, middle and end of 'S' curve to lift and place pipe.
3. Or install by utilizing a sloped insertion trench and by pulling pipe into place (See #2 illustration above).

## 1) Inspect Shipment



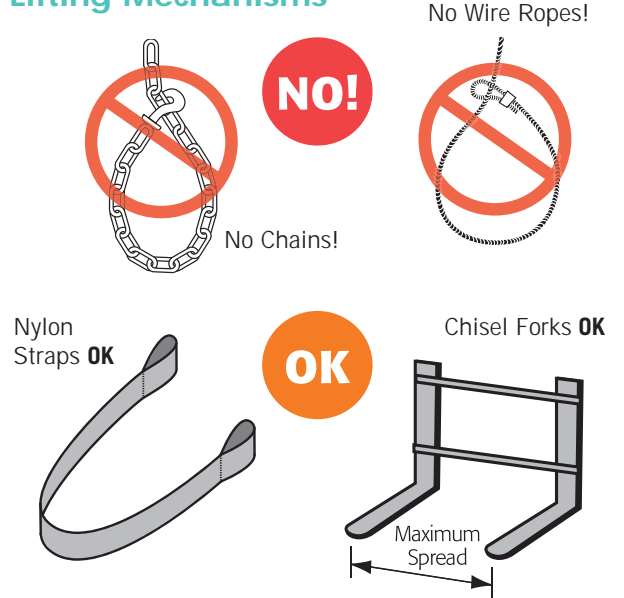
Inspect the pipe shipment prior to unloading for proper pipes size, type and color. Check for pipe damage or any other inconsistencies with the pipe load.

**Problems? Call**

### Be sure to check:

- Size (diameter)
- Thickness (DR Rating)
- Color
- Length
- Quantity

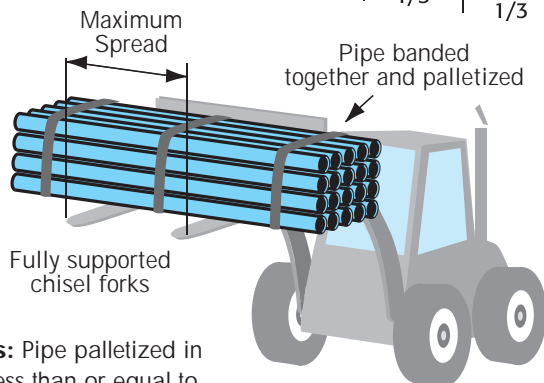
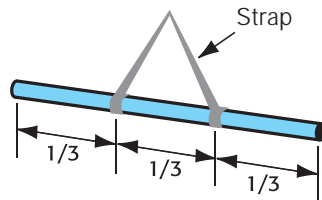
## 2) Lifting Mechanisms



**WARNING** Pipe and pipe bundles may be extremely heavy and possibly unstable. Use caution in handling, loading, unloading and moving. Assure proper handling equipment is used and secured before attempting to move pipe or pipe bundles.

## 3) Moving and Unloading Pipe

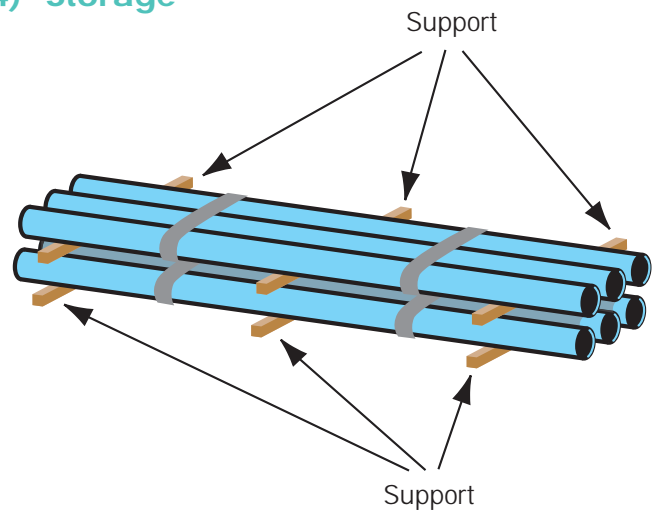
**Straps:** For pipe lengths greater than 40 feet, as well as individual pipe lengths 40 feet and greater.



**Fork Lifts:** Pipe palletized in bundles, less than or equal to 40 feet in length.

**WARNING** Pipe and pipe bundles may be extremely heavy and possibly unstable. Use caution in handling, loading, unloading and moving. Assure proper handling equipment is used and secured before attempting to move pipe or pipe bundles.

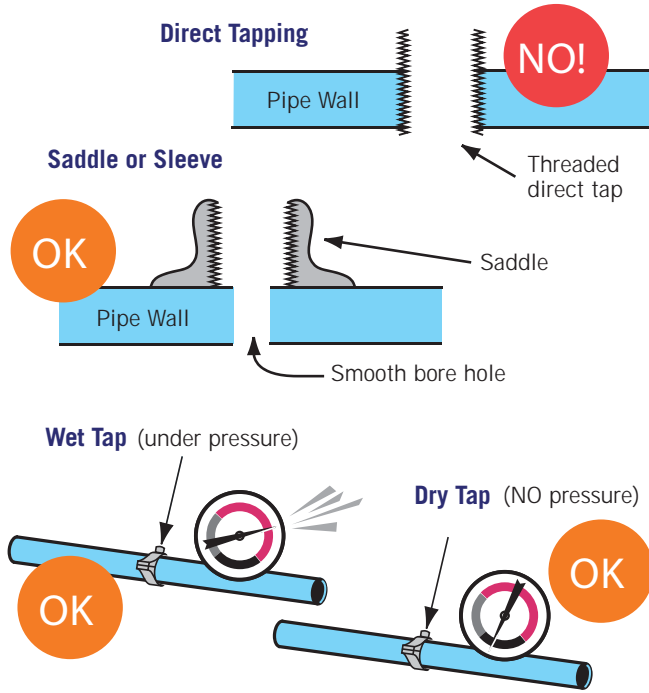
## 4) Storage



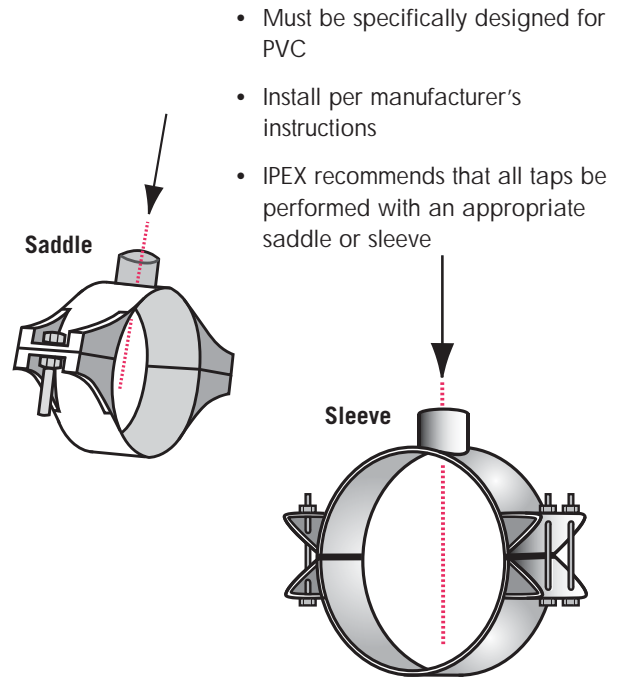
Pipe Diameter (in)	Maximum # of Rows Stacked
8 or less	5
10 to 21	4
24 to 30	3
33 to 48	2

If pipe is to be stored more than one year in direct sunlight, use opaque cover and allow air circulation around pipe to dissipate heat build-up.

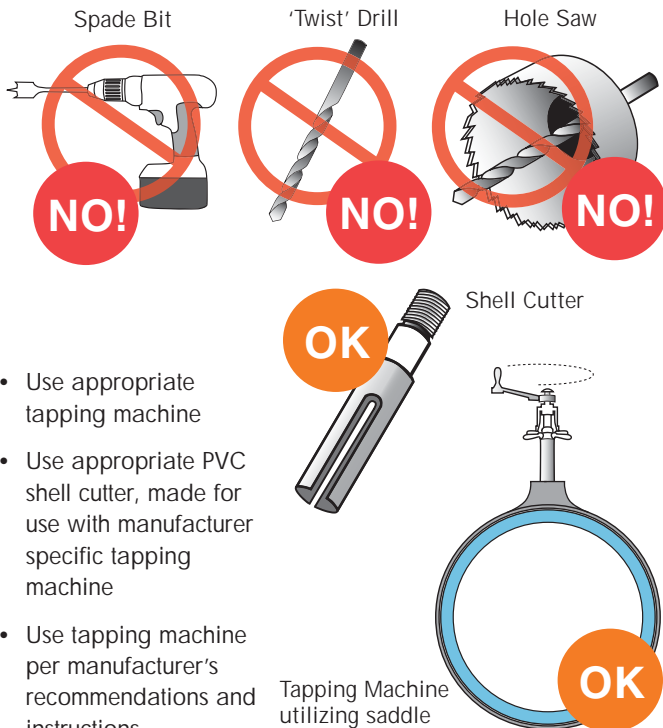
## 1) Tapping Types for Pressure Application



## 2) Saddles and Sleeves



## 3) Equipment



## 4) Sizes Allowed

If a greater size tap is required than is shown below, alternate methods are available to accommodate the required size.

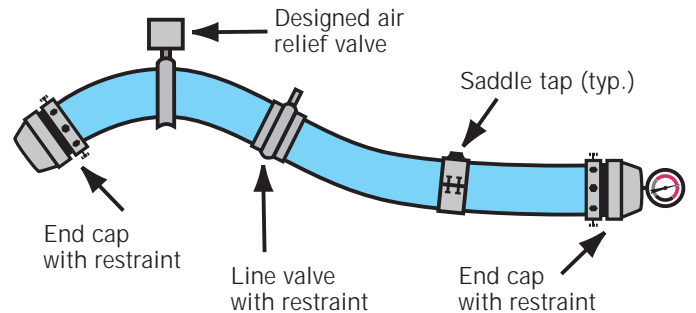
Pipe Size (In)	Recommended Tap Sizes					
	3/4"	1"	1-1/2"	2"	4"	6"
6	•	•				
8	•	•				
10	•	•				
12	•	•				
14	•	•				
16	•	•	•	•		
18	•	•	•	•		
20	•	•	•	•	•	
24	•	•	•	•	•	
30	•	•	•	•	•	•

# HYDROSTATIC PRESSURE TESTING

## 1) Basics for Test

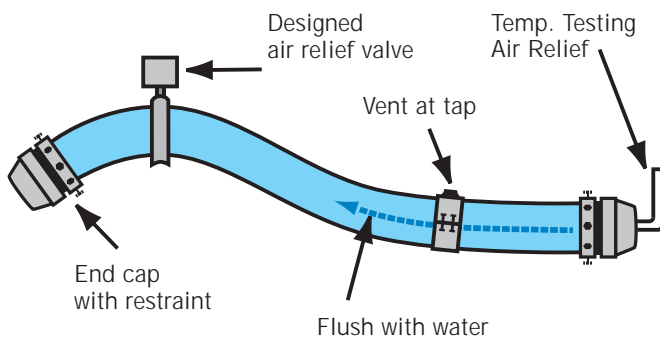
- Determine test pressure and duration from the appropriate standards or specifications
- General industry practice for testing is a one hour test at 150% of the long-term working pressure for the pipeline
- Perform all testing under supervision and adhere to all applicable local standards
- **WARNING** - Pressurized pipelines are attached appurtenances represent a potential safety hazard due to mis-installation, mis-handling or mis-testing of the pipeline
- It is recommended that all pipelines be tested AFTER installation and burial, if applicable
- Testing is to be completed hydrostatically. Removal of air is MANDATORY.
- General guidelines for hydrostatic pressure testing of PVC water piping systems can be found under AWWA C605 Pressure Pipe and Fittings for Water.

## 2) Check Appurtenances



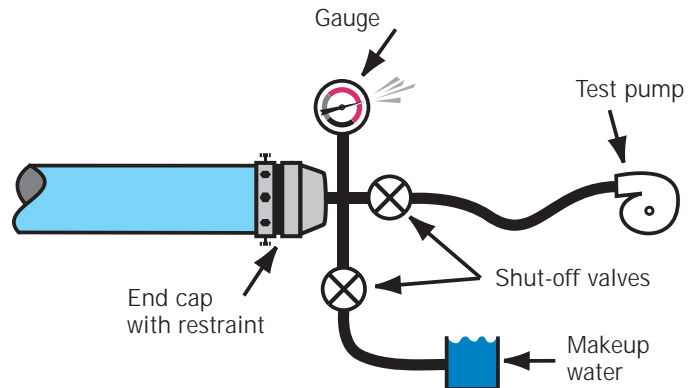
- All restraint devices are installed per manufacturers' recommendations and appropriate torque
- All devices must be rated for test pressure
- Set up test at lowest elevation
- Remove air at the highest elevation(s)

## 3) Purge Air



- Use designed air relief valves, air flushing with water, temporary testing air relief at end caps, or taps in line
- Assure all air is removed prior to test
- Let air settle out of test water before final venting

## 4) Perform Test



- Pressurize line
- Hold for test period
- Fix leaks, if any found
- Retest if necessary