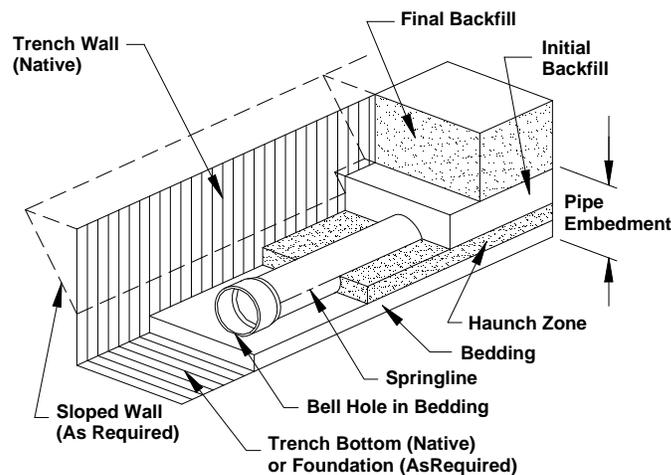




## Installation Instructions for AWWA C-900 and C905

National, Inc. makes every effort to provide its customers with the best quality PVC pipe available. The proper installation of thermoplastic pressure pipe is necessary to ensure a problem free system.

The following is a general overview for underground installation of PVC pressure pipe. Procedures further detailing the installation and testing of PVC pressure pipe systems may be obtained through National. However, local, state or federal code requirements and system design specifications supersede these general installation procedures. The final recommendations for installation and testing are the responsibility of the engineer.



**Trench:** It is important that the trench bottom or bedding provide firm and continuous support for the full length of the pipe. Bell holes at each joint are to be provided to allow for proper joint assembly. A minimum of 4 inches embedment cushion, of granular material grade is necessary in rocky trench conditions.

The trench width should be wide enough to provide sufficient work area for joint assembly and placement of haunching and compaction. The minimum clear width of the trench measured at the horizontal diameter of the pipe is generally specified at least 1 foot greater than the outside diameter of the pipe.

The trench shall be dug to a minimum depth where frost penetration will not adversely affect the transmission of fluids. Sufficient depth allowance above pipe should be provided to minimize the influence of live-load conditions created by overhead traffic.

The depth of cover shall be measured from finished grade or surface to the top of the pipe.

Where a piping system must cross below heavy traffic areas and shallow burial depth is unavoidable it may be necessary to install pipe in casings. In these circumstances casing skids are to be used to prevent pipe and bell damage.

Note: Do not use creosote treated wood for skid material. Do not use petroleum products for skid lubricant as these materials could adversely affect the pipe over an extended period of time.

### **Receiving, Handling & Storage**

It is the carrier's responsibility to deliver the shipment in good condition, and the customers or contractors responsibility to inspect delivery prior to acceptance, and to exercise all precautions during unloading to prevent damage of purchased material.

#### **Receiving:**

- Delivered material should be inspected for damage caused by load shifting in transit and signs of rough treatment.
- Check that correct material and quantities are delivered as identified on shipping documents.
- Do not dispose of any damaged material. The carrier will inform you of proper procedures for reporting damages.
- If discrepancies exist between delivered shipment and your purchase order contact manufacturer or manufacturer's representative.

#### **Handling:**

- A fork truck is preferred when unloading PVC pipe. It is recommended that pipe remains in manufacturer's packaged units.
- Load restraints should be removed and packaged units unloaded from rear forward and upper most unit downward.
- Do not run forks too far under units, as to avoid damage to adjacent units.
- Avoid incidental impact. Severe impact could cause damage, particularly in cold weather.
- Do not handle units with single chains or cables, even if padded.
- Packaged units should be placed or stored on level ground and no higher than 8 feet. Proper support of bottom units should be provided to prevent deformation.



**Storage:**

- Manufacturer's packaging should be maintained until it is necessary to be removed.
- When long-term storage (longer than 1 year) is necessary, avoid exposure to direct sunlight. If this is unavoidable, PVC pipe should be covered with an opaque material. Sufficient air circulation over and around pipe should be provided to prevent heat accumulation.
- PVC pipe should not be stored near heat sources or hot objects, such as, heaters, boilers, steam lines or engine exhaust.
- Stacked unit should be secured, as necessary, to prevent collapse, which may result in pipe damage or personal injury.

**Laying Pipe:** All pipe should be laid in accordance with line and/or grades specified by an engineer's design drawings. Damage to the pipe can be prevented by using the proper tools and equipment during the placement of pipe into trench. Pipe and accessories should never be dropped into trench. It is common practice to lay pipe with bell positioned upstream, to minimize embedment material entering into bell when inserting spigot end of the next length of pipe. When installation is interrupted or stopped at the end of the workday, the pipe ends shall be temporarily sealed.

**Field Cutting:** Hand saws, circular saws or similar equipment may be used for cutting PVC pipe. Pipe cut in the field should have a smooth end and be perpendicular to the length of pipe. The spigot end should be deburred, beveled and depth of entry line be reapplied. The angle of bevel (approximately 15°) should be similar to that which was provided by manufacturer. There are several ways to apply bevel: a power grinder or abrasive disc, a beveling tool available from several equipment manufacturers, and a rasp or file. When mating spigot end of pipe to shallow depth bells, such as, cast-iron fitting or valves, the manufacturers bevel shall be cut off square, deburred with only a slight outer bevel (approximately ¼ inch).

