



Installation Guide for PVC Foam Core Drain, Waste and Vent Pipe

This installation guide has been developed by North American Pipe Corporation for use as a field installation guide. General information regarding the correct installation of PVC foam core drain, waste, and vent pipe is included.

For more detailed technical information, refer to *ASTM F891 Standard Specification for Coextruded Poly(Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core*. This installation guide outlines design and construction practices.

The statements contained in this installation guide are those of North American Pipe Corporation and are not warranties, nor are they intended to be warranties.

RECEIVING

When a load of pipe arrives at a job site, it is your responsibility to check it thoroughly. If possible, inspect each piece for damage. Check quantities against the shipping list. Note missing or damaged items on bill of lading. Set aside any damaged items and notify the shipper.

UNLOADING

It is also your responsibility to unload the shipment. **DO IT WITH REASONABLE CARE.** Careless unloading can result in damaged product or personal injury.

Use a fork-lift or front-end loader with fork attachment, if available. Ensure the fork attachment is long enough to support the bundles. When unloading by hand, remove one piece at a time, and block the shipment to keep pipe from rolling off the truck.

STORAGE

If you can unload the shipment in unit packages, the pipe will be easier to store. Stack it on reasonably level ground. If you unload one piece at a time, place the pipe bevel to bell. Never stack over eight feet in height. Don't stack the pipe next to heat sources such as boilers, steam lines, electrical equipment or engine exhausts.

HANDLING

DO NOT DROP THE PIPE. String pipe close to the trench with the bell ends pointing in the direction of work progress to save extra effort. Be particularly careful in very cold weather.

ASSEMBLY

Using a fine-tooth hand or power saw to cut the pipe square with its axis. A miter box is recommended to make sure that the cuts are square. A rotary cutter specifically designed for use with plastic pipe may be used if its use does not raise a burr or ridge at the cut edge. Remove any burrs or ridges that might have developed during the cutting process.

The solvent-cement joint is designed as interference fit joint. Dry fit the joint by inserting the dry spigot into the bell. Typically this interference develops when the spigot is inserted to about 1/3 to 2/3 of the socket depth. If the pipe is at the minimum tolerance and the socket is at the maximum tolerance it is possible that the spigot will inset fully into the socket the fit should be snug. Select a different fitting or pipe if the fit is wobbly.

Make sure that the mating surfaces are clean by removing any moisture, oil, dirt, or other foreign material.

BEFORE APPLICATION

Confirm that the available primer and solvent-cement are compatible and intended for use with the material to be joined.

For PVC foam Core products use solvent cement that meets the requirements of *ASTM DD2564 Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems*. Also for foam core PVC products primers may be used to clean, soften, and dissolve the joint surfaces prior to application of the solvent cement. The primer for foam core should meet the requirements of *ASTM 656 Standard Specification for Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings*.

Keep the primer and cement containers closed when not in use. The cement should be discarded if there is an appreciable change in the viscosity.



Bonding of a typical solvent-cement joint develops in two ways. The section with the interference fit the pipe and socket fuses together. In the looser fit section the cement bonds the surfaces. The cement softens the joint surfaces so that fusion or bonding can take place. (PVC Primer is used to aid in the softening process and improves the bonding and fusion.)

It is important to important consider the atmospheric conditions when applying the cement. With high humidity it is important to apply the cement quickly to minimize condensation of moisture on the cement surface. Surface temperatures should be kept below 110 degrees F to prevent the solvent-cement from drying before the joint can be assembled.

The assembly of sizes six inch and larger requires two people to apply primer and solvent cement and assemble in a prompt manner. A mechanical forcing device may also be required to insert the spigot and hold it in place.

APPLICATION OF PRIMER AND CEMENT

To apply the primer and cement use a natural or nylon brush with a width that is approximately 1/2 the diameter of the pipe. A dauber, again approximately 1/2 the pipe diameter in width may be used for pipe sizes 2 inch and smaller.

Apply a moderate and even coating of cement to the inside of the fitting socket. Excessive solvent cement may become an obstruction in the pipe and prevent satisfactory joining. Quickly apply a heavy coat of solvent cement to the outside of the pipe. At this stage in the assembly time is very important. If the solvent-cement starts to harden quickly apply another light coat. Forcefully insert the spigot into the bell until the spigot bottoms out, turning the pipe or the fitting 1/4 turn during the process. Hold the spigot in place for approximately one minute. This process should be performed in about 20 seconds. Take care not to disturb the joint and to allow the joint to set for the period of time recommended by the cement manufacturer. To avoid push-out hold the joint together until the cement starts to set.

A properly made joint will develop a bead of cement around its entire perimeter. It is important to wipe away any excess cement. In like manner

do not apply cement in the bell to pipe transition area of pipe bells, particularly with pipe wall thicknesses of 1/8 inch or less.

Any gaps between the bell and the spigot generally indicate a defective assembly that is due to insufficient cement or the use of light bodied cements when standard or heavy bodied cements should have been used. This is particularly true with large diameter joints.

UNDERGROUND INSTALLATION

For underground installations install the pipe in accordance with the provisions of the Plumbing Code having jurisdiction. Aggregate size should be kept to a maximum of 1/2 inch for angular and 3/4 inch for rounded particles. Consult ASTM Practice D2321 for more detailed information.

SUPPORTS AND SPACING

Support the pipe at intervals of at least four feet. Hangers or support straps should not compress, cut, or distort the pipe in any way. Use supports that allow free movement of the pipe to accommodate changes in length due to temperature variations. Support vertical piping at intervals or 10 feet or less.

COLD WEATHER NOTES

Primers and cements do not penetrate and soften the PVC as quickly in cold weather (below freezing) as in warm weather. Verify the softening by testing a scrap piece. Apply primer to a scrap piece and wait for a few minutes. Scrape the primed surface with a knife edge. A properly softened pipe surface will be removed during scraping.

Do not warm the cement and primer with open flame or electric heaters and attempt to prefabricate as much of the system in a heated area. Remove all ice, snow, or other moisture before applying the primer. It will take longer for the solvents to evaporate in cold temperatures so allow for a longer than normal cure time.



CHECKLIST – Don't Forget!

- Take all sensible precautions necessary to protect workers and materials.
- Cut the pipe square and remove any burrs.
- Dry fit the joint.
- Apply the cement to the bell and then to the spigot before the primer has dried.
- Twist the pipe a quarter turn as it you insert the spigot completely into the bell.
- Hold the joint together until the cement begins to set.
- Allow the joint to cure completely before handling and pressure testing.
- Refer to *ASTM F891 Standard Specification for Coextruded Poly(Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core* for detailed design installation recommendations.
- Large diameters require two people.
- Keep primer and cement away from all sources of ignition
- Warm temperatures and low humidity accelerate curing times.
- Cold weather and high humidity slow the curing process.