

P·P·E·F

plastic piping education foundation

INSTALLING PE PIPE AND TUBING IN A TRENCH

PPFA

The Plastic Pipe and Fittings Association



Polyethylene



Disclaimer

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Polyethylene

This presentation has been designed to provide a brief, comprehensive guide to the installation of polyethylene water service pipe and tubing in a trench. If you have questions regarding the information in this video, please consult the PPFA website, www.ppfahome.org. Additionally, please feel free to consult PPFA member companies who have direct links to the PPFA website.



Polyethylene

In order to perform properly and provide years of reliable service, PE water service pipe or tubing installed in a trench must be properly routed and bedded. Trench bottoms should provide stable and uniform support to the pipe over its entire length. And, the trench must be free of lumps, rocks and other construction debris which could damage the pipe or cause localized overstressing.





Polyethylene

Pipe may be installed in a wide range of native soils. The pipe embedment materials should be stable, sufficiently granular to be easily worked under the sides and bottom of the pipe to achieve uniform support and readily compactable to the soil densities specified by contract documents or other applicable requirements.





Polyethylene

Embedment materials should be free of refuse, organic material or frozen solids. The particle size of the material in contact with the pipe should not exceed 1/2 inch, and the particles should not have sharp surfaces that may easily abrade the pipe.





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Before installing the pipe or tubing, determine the frost line. A minimum of 18 inches of cover is recommended to protect the pipe or tubing from activities such as digging and anticipated vehicular traffic.





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During installation, it is important to lay the pipe with moderate slack, or snaking, to accommodate any contraction resulting from cooling prior to backfill. The slack also provides for active soil friction development once the pipe is buried and placed in service.





Polyethylene

To reduce tension stresses due to thermal contraction, the pipe or tubing should be allowed to cool in the trench before backfilling. To minimize the development of pullout stresses at rigid connections, such as service tees and meters, pipe should be trimmed to the required length and connected to rigidly held fittings only after it has cooled substantially close to the trench temperature.

**UNCONSTRAINED PE
PIPE OR TUBING WILL
CONTRACT ABOUT ONE
INCH IN LENGTH PER
100 FEET OF PIPE FOR
EACH 10-DEGREE F
TEMPERATURE DROP**



Polyethylene

Initial backfill should satisfy requirements for embedment materials as described earlier. The initial backfill should cover the pipe or tubing by at least 4 inches. However, if pressure testing is to be conducted, leave the fittings exposed until after pressure testing is satisfactorily completed.





Polyethylene

The final backfill may consist of any material acceptable to the governing authority. However, any large rocks, stones, frozen clods and other debris greater than 3 inches in diameter shall be removed. Backfill should be placed and spread in uniform layers and compacted to the minimum density as specified by contract documents or by the appropriate government jurisdiction.





Polyethylene

Properly installing PE pipe and tubing in a trench will help ensure the long-term performance of this high-quality water service product.



Polyethylene

If you have questions on this or other plastic piping, please contact PPFA or a PPFA member company.

To view a list of PPFA members, please consult the PPFA website at www.ppfahome.org

PPFA



The Plastic Pipe and Fittings Association – PPFA – is a trade association representing manufacturers of plastic plumbing pipe and fittings through support of modern standards, codes and other regulations.

P.P.E.F

plastic piping education foundation



PPEF is an educational organization whose mission is to provide educational materials on the proper selection and use of plastic piping products.