



Standard Practice for Insertion of Flexible Polyethylene Pipe Into Existing Sewers¹

This standard is issued under the fixed designation F 585; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This practice describes design and selection considerations and installation procedures for the construction of new sanitary and storm sewers by the insertion of polyethylene pipe through existing pipe and along the previously existing line and grade. The procedures are designed to minimize traffic disruption, surface damage, and restoration, with little or no interruption of service.

NOTE 1—See CGSB 41-GP-25M.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- D 543 Test Method for Resistance of Plastics to Chemical Reagents²
- D 1600 Terminology for Abbreviated Terms Relating to Plastics²
- D 2657 Practice for Heat-Joining of Polyolefin Pipe and Fittings³
- D 3350 Specification for Polyethylene Plastics Pipe and Fittings Materials³
- F 412 Terminology Relating to Plastic Piping Systems³
- F 714 Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter³
- F 894 Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe³

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² Annual Book of ASTM Standards, Vol 08.01.

³ Annual Book of ASTM Standards, Vol 08.04.

3. Terminology

3.1 Definitions—Definitions are in accordance with Terminology F 412, unless otherwise specified.

4. Significance and Use

4.1 The procedures described can be used in conjunction with the manufacturer's specific recommendations to install polyethylene pipe using the insertion method. The procedures are intended as an aid to and not in replacement of the design and review of the project engineer.

5. Design and Selection Considerations

5.1 General Guidelines:

5.1.1 If the original sewer piping is structurally deteriorated due to offset at the joints or rupture and collapse of the pipe walls, measures should be taken to determine its condition in detail, prior to the selection of pipe size and installation procedure.

5.1.2 Protrusions of lateral or service piping into the old sewer, root growths, sedimentation, or mineral deposits, or any combination of these four, may restrict the access for inserting the polyethylene piping. The presence of obstructions must be determined (see 6.3).

5.1.3 The clearance between the liner pipe and the original pipe should be sufficient to ensure that no interference occurs during insertion. For pipes made in accordance with Specification F 714, in general, the liner pipe outside diameter should be no larger than 10 % smaller than the original sewer. For pipes manufactured in accordance with Specification F 894, in general, the liner pipe outside diameter should be no larger than 2 in. smaller than the original sewer.

5.1.4 Insertion shafts should be kept to a minimum and should coincide with the areas in which problems have been detected in the existing sewer (see Section 7).

5.1.5 Pipe may be preassigned by the heat fusion technique in accordance with Practice D 2657.

5.1.6 Pipe may also be assembled at the time of insertion using mechanical connections or heat fusion.