



Standard Practice for Installation of Machine Spiral Wound Poly (Vinyl Chloride) (PVC) Liner Pipe for Rehabilitation of Existing Sewers and Conduits¹

This standard is issued under the fixed designation F 1741; 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.

1. Scope

1.1 This practice describes the procedures for the rehabilitation of sewer lines and conduits by the insertion of a machine-made field-fabricated spiral wound liner pipe into an existing pipeline. For existing pipelines 6 to 48 in., after insertion, the spiral wound liner pipe is expanded until it presses against the interior surface of the existing pipeline. Alternatively, for existing pipelines 6 to 108 in. in diameter, the spiral wound liner pipe is inserted as a fixed diameter into the existing pipeline and is not expanded, and the annular space between the spiral wound liner pipe and the existing pipe is grouted. This rehabilitation process can be used in a variety of gravity applications such as sanitary sewers, storm sewers, culverts, and process piping.

1.2 The values in parentheses are provided for information purposes 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.*

1.3.1 Particular attention is drawn to those safety regulations and requirements involving entering into and working in confined spaces.

2. Referenced Documents

2.1 ASTM Standards:

- C 39/C 39M Test Method for Compressive Strength of Cylindrical Concrete Specimens²
- D 883 Terminology Relating to Plastics³
- D 1600 Terminology for Abbreviated Terms Relating to Plastics³
- D 1784 Specification for Rigid Poly (Vinyl Chloride)

(PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds³

F 412 Terminology Relating To Plastic Piping Systems⁴

F 1417 Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air⁴

F 1697 Specification for Poly (Vinyl Chloride) (PVC) Profile Strip for Machine Spiral Wound Liner Pipe Rehabilitation of Existing Sewers and Conduit⁴

2.2 NASSCO Standard:

Recommended Specifications for Sewer Collection System Rehabilitation⁵

2.3 Uni-Bell Standard:

UNI-B-5-89 Recommended Practice for the Installation of PVC Sewer Pipe⁶

3. Terminology

3.1 *General*—Definitions are in accordance with Terminologies D 883 and F 412. Abbreviations are in accordance with Terminology D 1600, unless otherwise indicated.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *extruded PVC profile strip*—a product available in various widths, consisting of a smooth inside surface and a ribbed outer surface with mechanically locked male and female edges which are self interlocking, or separate locking strips which serve the same purpose (Table 1 and Fig. 1).

3.2.2 *insertion point*—an existing manhole, existing access shaft, or excavated pit that serves as the point where a winding machine field fabricates the spiral wound liner pipe and simultaneously inserts the spiral wound liner pipe into the existing pipeline.

3.2.3 *production run*—a continuous extrusion of a given profile type.

3.2.4 *spiral wound liner pipe*—a product field fabricated from extruded PVC profile strip to a round shape (see Fig. 2).

3.2.5 *termination point*—an existing manhole, existing access shaft, or an excavated pit that serves as the point of exit of the spiral wound liner pipe from the existing pipe.

¹ This practice is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.67 on Trenchless Plastic Pipeline Technology.

Current edition approved Sept. 10, 2002. Published February 2003. Originally published as F 1741–96. Last previous edition E1741–02.

² *Annual Book of ASTM Standards*, Vol 04.02.

³ *Annual Book of ASTM Standards*, Vol 08.01.

⁴ *Annual Book of ASTM Standards*, Vol 08.04.

⁵ Available from NASSCO, 140 Circle Drive, Suite 103, Maitland, FL 32751.

⁶ Available from Uni-Bell, 2655 Villa Creek Drive, Suite 155, Dallas TX 75234.