Standard Specification for

Polyethylene (PE) Liner Pipe, 300- to 1600-mm Diameter, Based on Controlled Outside Diameter

AASHTO Designation: M 326-18

Technical Subcommittee: 4b, Flexible and Metallic Pipe

Release: Group 2 (June)

AASHTO

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1. SCOPE

1.1. This specification covers the requirements and methods of tests for outside diameter dimension controlled polyethylene liner pipe (PE liner pipe), jointing, and fittings for use in pipe relining and culvert rehabilitation for industrial wastes, sanitary sewer, and surface and subsurface drainage applications.

1.1.1. Nominal sizes of 300 to 1600 mm are included.

1.1.2. Materials, workmanship, dimensions, pipe stiffness, joining systems, and form of markings are specified.

1.2. This specification is intended for rehabilitation of industrial waste, sanitary sewer, and surface and subsurface drainage applications by the insertion of PE liner pipe through existing pipe. PE liner pipe is designed to minimize traffic disruption and subsurface damage, and rehabilitate existing sewers and culverts with little or no interruption in service or traffic.

Note 1—When polyethylene pipe is to be used in locations where the ends may be exposed, consideration should be given to protection of the exposed portions due to combustibility of the polyethylene and the effects of prolonged exposure to ultraviolet radiation.

1.3. For the PE liner pipe to perform properly, the annular space between existing and PE liner pipe must be filled. This specification does not include methods to fill the annular space between the existing pipe and the PE liner pipe, insertion techniques, and termination techniques. Construction and installation procedures are described in ASTM F585.

1.4. *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*:

- D618, Standard Practice for Conditioning Plastics for Testing
- D883, Standard Terminology Relating to Plastics

- D2122, Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
- D2412, Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
- D3212, Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
- D3350, Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
- F412, Standard Terminology Relating to Plastic Piping Systems
- F477, Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- F585, Standard Guide for Insertion of Flexible Polyethylene Pipe Into Existing Sewers
- F714, Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter
- F1473, Standard Test Method for Notch Tensile Test to Measure the Resistance to Slow Crack Growth of Polyethylene Pipes and Resins
- F2620, Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings

3. TERMINOLOGY

3.1. The terminology used in this standard is in accordance with the definitions given in ASTM D883 and ASTM F412 unless otherwise specified.

3.2. *crack*—any break or split that extends through the wall.

3.3. *crease*—a visible irrecoverable indentation.

3.4. *buckling*—during pipe flattening testing, any decrease or downward deviation in the pipe load-deflection test curve shall be considered a buckling point.

3.5. *delamination*— the occurrence of any separation in the pipe wall visible to the eye.

3.6. *polyethylene (PE) plastics*—plastics based on polymers made with ethylene as essentially the sole monomer (ASTM D883).

3.7. *reworked plastic*—a plastic from a processor's own production that has been reground, pelletized, or solvated after having been previously processed by molding, extrusion, etc. (ASTM D883).

3.8. *virgin polyethylene material*—PE plastic material in the form of pellets, granules, powder, floc, or liquid that has not been subject to use or processing other than required for initial manufacture.

4. CLASSIFICATION

4.1. The PE liner pipe covered by this specification is classified by the Standard Dimension Ratio (SDR) system. The relationship between SDR, outside diameter, and minimum wall thickness is as follows:

$$SDR = \frac{D_o}{t} \qquad (1)$$

where:

SDR = Standard Dimension Ratio;

D_o = Average Outside Diameter, mm; and

t = minimum wall thickness, mm.