



Designation: D 5813 – 95

An American National Standard

## Standard Specification for Cured-In-Place Thermosetting Resin Sewer Pipe<sup>1</sup>

This standard is issued under the fixed designation D 5813; 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 specification covers cured-in-place thermosetting resin pipe (CIPP), 4 through 132-in. (100 through 3353-mm) equivalent diameter, for use in gravity flow systems for conveying sanitary sewage, storm water, and certain industrial wastes. This specification is suited for the evaluation and testing of materials used in the rehabilitation of existing pipes by the installation and cure of a resin-impregnated fabric liner.

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

NOTE 1—There are no ISO standards covering the primary subject matter of this specification.

1.3 The following safety hazards caveat pertains only to the test methods portion, Section 8, of this specification: *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 Reagents<sup>2</sup>
- D 638 Test Method for Tensile Properties of Plastics<sup>2</sup>
- D 695 Test Method for Compressive Properties of Rigid Plastics<sup>2</sup>
- D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastic and Electrical Insulating Materials<sup>2</sup>
- D 883 Terminology Relating to Plastics<sup>2</sup>
- D 1600 Terminology for Abbreviated Terms Relating to Plastics<sup>2</sup>
- D 1682 Test Methods for Breaking Load and Elongation of Textile Fabric<sup>3</sup>

D 3039/D3039M Test Method for Tensile Properties of Fiber-Resin Composites<sup>4</sup>

D 3567 Practice for Determining Dimensions of “Fiber-glass” (Glass-Fiber-Thermosetting Resin) Pipe and Fittings<sup>5</sup>

D 3681 Test Method for Chemical Resistance of “Fiber-glass” (Glass-Fiber Reinforced Thermosetting Resin) Pipe in a Deflected Condition<sup>5</sup>

D 4814 Specification for Automotive Spark—Ignition Engine Fuel<sup>6</sup>

F 412 Terminology Relating to Plastic Piping Systems<sup>5</sup>

F 1216 Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube<sup>5</sup>

### 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 *cured-in-place pipe (CIPP)*—hollow cylinder consisting of a fabric with cured (cross-linked) thermoset resin; interior or exterior plastic tube coatings, or both, may be included; this pipe is formed within and takes the shape of an existing conduit.

3.2.2 *delamination*—separation of coating or layers of the CIPP, or both.

3.2.3 *dry spot*—a fabric area of the finished CIPP which is deficient or devoid of resin.

3.2.4 *fabric tube*—a flexible material formed into a tubular shape which during the installation process is saturated with resin and holds the resin in place during the cure.

3.2.5 *fully deteriorated pipe*—the original pipe is not structurally sound and cannot support soil and live loads or is expected to reach this condition over the design life of the rehabilitated pipe.

3.2.6 *lift*—a portion of the CIPP that has pulled away from the existing conduit wall and formed a reverse (inward) curvature of the CIPP relative to the existing conduit.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D-20 on Plastics and is under the direct responsibility of Subcommittee D20.23 on Reinforced Plastic Piping Systems and Chemical Equipment.

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<sup>2</sup> Annual Book of ASTM Standards, Vol 08.01.

<sup>3</sup> Discontinued; see 1991 Annual Book of ASTM Standards, Vol 07.01.

<sup>4</sup> Annual Book of ASTM Standards, Vol 15.03.

<sup>5</sup> Annual Book of ASTM Standards, Vol 08.04.

<sup>6</sup> Annual Book of ASTM Standards, Vol 05.03.