



Standard Specification for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pressure Pipe Fittings¹

This standard is issued under the fixed designation D 5685; 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 “fiberglass” (glass-fiber-reinforced thermosetting-resin) fittings for use with filament wound or centrifugally cast fiberglass pipe, or both, in sizes 1 in. through 16 in. for pipe manufactured to Specification D 2996 or D 2997, or both.

1.2 The following safety hazard caveat pertains only to the test method portion, Section 8, of this specification:

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.*

NOTE 1—The term “fiberglass pipe” as described in Section 3 of this specification applies to both reinforced thermosetting resin pipe (RTRP) and reinforced plastic mortar pipe (RPMP).

NOTE 2—There is no similar or equivalent ISO standard.

2. Referenced Documents

2.1 ASTM Standards:

- D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing²
- D 883 Terminology Relating to Plastics²
- D 1598 Test Method for Time-To-Failure of Plastic Pipe Under Constant Internal Pressure³
- D 1599 Test Method for Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings³
- D 1600 Terminology for Abbreviated Terms Relating to Plastics²
- D 1898 Practice for Sampling of Plastics²
- D 2143 Test Method for Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe³
- D 2992 Practice for Obtaining Hydrostatic or Pressure Design Basis for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings³
- D 2996 Specification for Filament Wound “Fiberglass” (Glass-Fiber-Reinforced-Thermosetting Resin) Pipe³
- D 2997 Specification for Centrifugally Cast “Fiberglass”

(Glass-Fiber-Reinforced-Thermosetting Resin) Pipe³

D 3567 Practice for Determining Dimensions of Reinforced Thermosetting Resin Pipe (RTRP) and Fittings³

D 4024 Specification for Reinforced Thermosetting Resin (RTR) Flanges³

F 412 Terminology Relating to Plastic Piping Systems³

F 477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe³

2.2 ANSI Standard:

B16.5 Steel Pipe Flanges, Flanged Valves and Fittings⁴

2.3 API Standard:

15LR Low Pressure Fiberglass Line Pipe⁵

3. Terminology

3.1 Definitions:

3.1.1 *General*—Definitions are in accordance with Terminology D 883 or F 412. Abbreviations are in accordance with Terminology D 1600, unless otherwise indicated. The abbreviation for fiberglass pipe is RTRP and the abbreviation for fiberglass fittings is RTRF.

3.1.2 *“fiberglass” pipe*—tubular product containing glass fiber reinforcements embedded in or surrounded by cured thermosetting resin. The composite structure may contain aggregate, granular or platelet fillers, thixotropic agents, pigments, or dyes. Thermoplastic or thermosetting liners or coatings may be included.

3.1.3 *reinforced thermosetting resin pipe*—fiberglass pipe without aggregate (RTRP).

3.1.4 *reinforced plastic mortar pipe*—fiberglass pipe with aggregate (RPMP).

3.1.5 *reinforced thermosetting resin fitting*—fiberglass fitting without aggregate (RTRF).

3.1.6 *reinforced plastic mortar fitting*—fiberglass fitting with aggregate (RPMF).

4. Classification

4.1 This specification covers fiberglass fittings defined by type (method of manufacture), grade (general type of resin), class (configuration of joining system), and pressure rating.

4.2 Types:

⁴ Available from American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.

⁵ Available from American Petroleum Institute, 1220 L St., NW, Washington, DC 20005.

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

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² Annual Book of ASTM Standards, Vol 08.01.

³ Annual Book of ASTM Standards, Vol 08.04.