



Standard Specification for Centrifugally Cast “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe¹

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1. Scope

1.1 This specification covers machine-made glass-fiber-reinforced thermosetting-resin pressure pipe manufactured by the centrifugal casting process. Included are a classification system and requirements for materials, mechanical properties, dimensions, performance, test methods, and marking.

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

NOTE 2—Pipe covered by this specification has been found suitable for conveying gases, petroleum products, or corrosive fluids.

1.2 The values given in parentheses are for information only.

NOTE 3—There is no similar or equivalent ISO standard.

1.3 The following precautionary caveat pertains only to the test method portion, Section 7, 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:

- C 33 Specification for Concrete Aggregates²
- D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing³
- D 883 Terminology Relating to Plastics³
- D 1598 Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure⁴
- D 1599 Test Method for Short-Term Hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings⁴
- D 1600 Terminology for Abbreviated Terms Relating to Plastics³
- D 2105 Test Method for Longitudinal Tensile Properties of

“Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Tube⁴

D 2143 Test Method for Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe⁴

D 2310 Classification for Machine-Made “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe⁴

D 2412 Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading⁴

D 2992 Practice for Obtaining Hydrostatic Design or Pressure Design Basis for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings⁴

D 3567 Practice for Determining Dimensions of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings⁴

F 412 Terminology Relating to Plastic Piping Systems⁴

3. Terminology

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

3.2 *Definitions of Terms Specific to This Standard*: Descriptions of Terms Specific to This Standard:

3.2.1 *aggregate, n*—a siliceous sand conforming to the requirements of Specification C 33, except that the requirements for gradation shall not apply.

3.2.2 *centrifugal casting, n*—a manufacturing process used to produce tubular goods by applying resin and reinforcement to the inside of a mold that is rotated and heated, subsequently polymerizing the resin system. The outside diameter (OD) of the finished pipe is fixed by the inside diameter (ID) of the mold tube. The inside diameter of the pipe is determined by the amount of material introduced into the mold.

3.2.3 *fiberglass pipe, n*—a 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.

3.2.4 *liner, n*—the inner portion of the wall at least 0.005 in. (0.13 mm) in thickness, as determined in 7.4 which does not contribute to the strength in the determination of the hydrostatic design basis.

3.2.5 *reinforced plastic mortar pipe (RPMP), n*—a fiberglass pipe with aggregate.

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 Systems and Chemical Equipment.

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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.