



Standard Specification for Polymer Concrete Pipe¹

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1. Scope

1.1 This specification covers polymer concrete pipe, 6 in. (150 mm) through 144 in. (3 660 mm), intended for use in gravity-flow systems for conveying sanitary sewage, storm water, and industrial wastes.

NOTE 1—There is no similar or equivalent ISO standard.

1.2 Although this specification is suited primarily for pipe to be installed by direct burial and pipe jacking, it may be used to the extent applicable for other installations such as sliplining and rehabilitation of existing pipelines.

NOTE 2—Unlike reinforced thermosetting resin pipes, polymer concrete pipe is designed and installed using rigid pipe design theory and practices.

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

1.4 The following safety hazards caveat pertains only to the test methods portion, Section 8, of this specification. *This standard may involve hazardous materials, operations, and equipment. 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 requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- A 276 Specification for Stainless Steel Bars and Shapes²
- C 33 Specification for Concrete Aggregates³
- C 117 Test Method for Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing⁴
- C 125 Terminology Relating to Concrete and Concrete Aggregates⁴
- C 136 Test Method for Sieve Analysis of Fine and Coarse Aggregates⁴

¹ This specification is under the jurisdiction of ASTM Committee D20 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 01.03.

³ Annual Book of ASTM Standards, Vol 04.02.

⁴ Annual Book of ASTM Standards, Vol 04.05.

C 579 Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing and Polymer Concretes⁴

D 648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position⁵

D 883 Terminology Relating to Plastics⁵

D 1600 Terminology for Abbreviated Terms Relating to Plastics⁵

D 2584 Test Method for Ignition Loss of Cured Reinforced Resins⁶

D 3567 Practice for Determining Dimensions of “Fiberglass” (Glass-Fiber-Reinforced-Thermosetting-Resin) Pipe and Fittings⁷

D 3681 Test Method for Chemical Resistance of “Fiberglass” (Glass-Fiber-Reinforced-Thermosetting-Resin) Pipe in a Deflected Condition⁷

D 3892 Practice for Packaging/Packing of Plastics⁶

D 4161 Specification for “Fiberglass” (Glass-Fiber-Reinforced-Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals⁷

F 412 Terminology Relating to Plastic Piping Systems⁷

F 477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe⁷

3. Terminology

3.1 *Definitions*—Unless otherwise indicated, definitions are in accordance with Terminologies C 125, D 883, and F 412, and abbreviations are in accordance with Terminology D 1600.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *aggregate, n*—a granular material, such as sand, gravel, or crushed stone, in accordance with the requirements of Specification C 33 except that the requirements for gradation shall not apply.

3.2.2 *pipe jacking, n*—a system of directly installing pipes behind a shield machine by hydraulic jacking from a drive shaft, such that the pipes form a continuous string in the ground.

3.2.3 *polymer concrete, n*—a composite material that consists essentially of a thermosetting resin within which are embedded particles or fragments of aggregate.

⁵ Annual Book of ASTM Standards, Vol 08.01.

⁶ Annual Book of ASTM Standards, Vol 08.02.

⁷ Annual Book of ASTM Standards, Vol 08.04.