



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.

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 1—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.*

NOTE 2—There is no known ISO equivalent to this standard.

2. Referenced Documents

2.1 ASTM Standards:²

- A276 Specification for Stainless Steel Bars and Shapes
- C33 Specification for Concrete Aggregates
- C117 Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
- C125 Terminology Relating to Concrete and Concrete Aggregates

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 For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

- C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates
- C579 Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
- D648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
- D883 Terminology Relating to Plastics
- D1600 Terminology for Abbreviated Terms Relating to Plastics
- D2584 Test Method for Ignition Loss of Cured Reinforced Resins
- D3567 Practice for Determining Dimensions of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings
- D3681 Test Method for Chemical Resistance of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition
- D3892 Practice for Packaging/Packing of Plastics
- D4161 Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals
- F412 Terminology Relating to Plastic Piping Systems
- F477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

3. Terminology

3.1 *Definitions*—Unless otherwise indicated, definitions are in accordance with Terminologies C125, D883, and F412, and abbreviations are in accordance with Terminology D1600.

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 to the requirements of Specification C33 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.