



Designation: D1998 – 21

Standard Specification for Polyethylene Upright Storage Tanks¹

This standard is issued under the fixed designation D1998; 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 flat-bottom, upright, cylindrical tanks molded in one-piece seamless construction by rotational molding. The tanks are molded from polyethylene for above ground, vertical installation and are capable of containing aggressive chemicals at atmospheric pressure. Included are requirements for materials, properties, design, construction, dimensions, tolerances, workmanship and appearance. Tank capacities are from 1900 L (500 gal) up.

1.2 This specification covers the design of stationery vessels for use at atmospheric pressure intended for use with liquids heated below their flash points and continuous service temperatures below 66°C (150°F) for Type I tanks and below 60°C (140°F) for Type II tanks.

1.2.1 NFPA Standards 30 and NFPA 31 shall be consulted for installations that are subject to the requirements of these standards.

1.3 For service requirements beyond the scope of this specification (1.2), such as externally imposed mechanical forces, internal pressure or vacuum, higher temperature service, etc., other relevant sources of standards, for example, local and state building codes, NFPA, ASME, ARM, etc., shall be consulted.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

NOTE 1—ISO 13341:2005+A1:2011 and ISO 13575:2012 are similar, but not equivalent to this standard.

1.5 The following precautionary caveat pertains only to the test methods portion, Section 11, 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

¹ This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.19 on Film, Sheeting, and Molded Products (Section D20.15.01).

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1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- D618 Practice for Conditioning Plastics for Testing
- D883 Terminology Relating to Plastics
- D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics
- D2837 Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products
- D3892 Practice for Packaging/Packing of Plastics
- D4703 Practice for Compression Molding Thermoplastic Materials into Test Specimens, Plaques, or Sheets
- E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method
- F412 Terminology Relating to Plastic Piping Systems

2.2 OSHA Standard:

- 29 CFR 1910.106 Occupational Safety and Health Administration, Flammable and Combustible Liquids³

2.3 ANSI Standard:

- B-16.5 Pipe Flanges and Flanged Fittings⁴

2.4 NFPA Standards:

- 30 Flammable and Combustible Liquid Code⁵
- 31 Installation of Oil Burning Equipment⁵

2.5 ISO Standards:⁶

- ISO 13341:2005+A1:2011 Static Thermoplastic Tanks for the Above Ground Storage of Chemicals – Blow Moulded

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.

³ Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Washington, DC 20210.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁵ Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, <http://www.nfpa.org>.

⁶ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

*A Summary of Changes section appears at the end of this standard