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.

Designation: D4097 – 18

An American National Standard

Standard Specification for Contact-Molded Glass-Fiber-Reinforced Thermoset Resin Corrosion-Resistant Tanks[1]

This standard is issued under the fixed designation D4097; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers cylindrical tanks fabricated by contact molding for above-ground vertical installation, to contain aggressive chemicals at atmospheric pressure, and made of a commercial-grade polyester or vinyl ester, resin. Included are requirements for materials, properties, design, construction, dimensions, tolerances, workmanship, and appearance.

1.2 This specification does not cover the design of vessels intended for pressure above atmospheric or under vacuum conditions, except as classified herein, or vessels intended for use with liquids heated above their flash points.

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

1.4 Special design consideration shall be given to tanks subject to environmental and/or mechanical forces such seismic, wind, ice, agitation, or fluid dynamic forces, to operational service temperatures greater than 180°F (82°C) and to tanks with unsupported bottoms.

1.5 The following safety hazards caveat pertains only to the test method 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.*

NOTE 1—There is no known ISO equivalent to this standard.

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]

C581 Practice for Determining Chemical Resistance of Thermosetting Resins Used in Glass-Fiber-Reinforced Structures Intended for Liquid Service

C582 Specification for Contact-Molded Reinforced Thermosetting Plastic (RTP) Laminates for Corrosion-Resistant Equipment

D618 Practice for Conditioning Plastics for Testing

D638 Test Method for Tensile Properties of Plastics

D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

D883 Terminology Relating to Plastics

D2150 Specification for Woven Roving Glass Fabric for Polyester-Glass Laminates (Withdrawn 1987)[3]

D2583 Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor

D2584 Test Method for Ignition Loss of Cured Reinforced Resins

D2996 Specification for Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe

D2997 Specification for Centrifugally Cast "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe

D3892 Practice for Packaging/Packing of Plastics

D4024 Specification for Machine Made "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Flanges

D5421 Specification for Contact Molded "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Flanges

F412 Terminology Relating to Plastic Piping Systems

[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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

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