



Standard Specification for Contact Molded “Fiberglass” (Glass Fiber Reinforced Thermosetting Resin) Ducts¹

This standard is issued under the fixed designation D3982; 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 ducts fabricated by contact molding intended for use in handling corrosive fumes and process gases. Special attention is given to equipment that operates at temperatures over 180°F (82.2°C) with regard to strength and corrosion resistance.

1.2 The material of construction shall be “fiberglass” consisting of a polyester, vinyl ester, or other qualified resin-matrix systems with fiber reinforcement in accordance with Specification **C582**.

1.3 This specification is not intended to cover selection of resins and reinforcements for specific chemical environments.

1.4 This specification covers ducts up to a design pressure of ± 5 psig (34.5 Pa).

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *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.*

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

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 Thermo-

setting Plastic (RTP) Laminates for Corrosion-Resistant Equipment

D883 Terminology Relating to Plastics

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

F412 Terminology Relating to Plastic Piping Systems

F436 Specification for Hardened Steel Washers

2.2 NFPA Standard:

NFPA 91 Installation of Blower and Exhaust Systems for Duct, Stack and Vapor Removal or Conveying³

3. Terminology

3.1 Definitions:

3.1.1 The definitions used in this specification are in accordance with definitions in Terminologies **D883** and **F412**, unless otherwise specified.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *calculated thickness*—this description is in accordance with the standard laminate composition tables for Types I and II in Specification **C582**.

3.2.2 *contact molding*—includes the “hand layup” and the “spray up” methods of manufacture.

3.2.3 *flange cant*—the angle that an entire branch is off from being perpendicular to the main run centerline (see **Fig. 1**).

3.2.4 *flange flatness*—maximum deviation, (see **Fig. 2**) from the actual flange face not including warpage or perpendicularity.

3.2.5 *flange offset*—the amount that an entire branch is off the main run centerline (see **Fig. 3**).

3.2.6 *flange perpendicularity*—maximum angle that the plane (see **Fig. 2**) of the flange inside diameter makes with the perpendicular plane to the duct’s centerline.

3.2.7 *flange warpage*—the amount that a flange outside diameter pulls back from the plane of the inside diameter during the cure of the material (see **Fig. 2**).

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