



Designation: D4385 – 19

Standard Practice for Classifying Visual Defects in Thermosetting Reinforced Plastic Pultruded Products¹

This standard is issued under the fixed designation D4385; 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 practice covers acceptance criteria for visual acceptance of thermosetting reinforced plastic pultruded rods, bars, shapes, and sheets.

1.2 This practice presents definitions of possible defects to serve as a guide for contracts, drawings, product specifications, and final inspection.

1.3 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.

1.4 *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.

1.5 *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

D883 Terminology Relating to Plastics

D3917 Specification for Dimensional Tolerance of Thermosetting Glass-Reinforced Plastic Pultruded Shapes

¹ This practice is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.18 on Reinforced Thermosetting Plastics.

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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. Terminology

3.1 *Definitions*—The definitions in this practice are in accordance with Terminology D883.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *connection areas*—areas associated with a pultruded member that form a connection in some form or fashion that will not be visible after fabrication.

3.2.2 *fiber blooming*—exposed reinforcements on the surface of a profile as a result of veil slippage or lack of resin. Such defects will cause the exposed fiber to “bloom” when exposed to ultraviolet light.

3.2.3 *internal layer*—refers to individual layers of unidirectional or transverse reinforcements in the form of roving/tows, continuous filament, woven or stitched mats formed and laminated via the pultrusion process to produce a specific thickness of or as part of a pultruded profile. A stitched or woven mat is made up of individual layers of roving woven or stitched together to form a single mat

3.2.4 *mat discoloration*—a discoloration (typically yellowing) of the reinforcing mats caused by binder migration. The discoloration can cause visual streaks on the surface of the pultrusion.

3.2.5 *test requirement*—minimum design, characteristic or specified values as dictated and or specified by codes, standards, industry, end customers, the manufacturer or the Engineer of Record.

4. Acceptance Criteria

4.1 The method and frequency of inspection shall be the responsibility of the pultruder as deemed necessary to maintain compliance to this specification, unless the purchaser and seller agree on other terms.

4.2 *Dimensions and Tolerances*—Refer to specifications in accordance with product drawing or in accordance with Specification D3917.

4.3 *Allowable Defects*—Defects that by nature, number, or frequency of occurrence do not affect the serviceability of the product. Allowable defects shall be fully described as to the type, size, number, extent allowed, and spacing. Defects in

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