



Standard Test Method for Apparent Horizontal Shear Strength of Pultruded Reinforced Plastic Rods By the Short-Beam Method¹

This standard is issued under the fixed designation D 4475; 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 test method covers the determination of the apparent horizontal shear strength of fiber reinforced plastic rods. The specimen is a short beam in the form of lengths of pultruded rods. This test method is applicable to all types of parallel-fiber-reinforced plastic rod samples.

1.2 This test method is primarily used for quality control and specification purposes (see 4.1).

1.3 The values stated in SI units are to be regarded as the 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 and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no similar or equivalent ISO standard.

2. Referenced Documents

2.1 *ASTM Standards:*

D 618 Practice for Conditioning Plastics for Testing²

E 4 Practices for Force Verification of Testing Machines³

E 691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method⁴

3. Summary of Test Method

3.1 The horizontal-shear test specimen is center-loaded as shown in Fig. 1. The ends of the specimens rest on two supports that allow the specimen to bend, the load being applied by means of a loading nose at midpoint along the support span, as shown in Fig. 2.

3.2 The specimen is deflected until a shear failure occurs at the midplane of the horizontally supported rod.

4. Significance and Use

4.1 Apparent shear strength determined by this test method is useful for quality control and specification purposes. It is



FIG. 1 Test Assembly

also applicable to research and development programs concerned with interlaminar-shear strength. The apparent shear

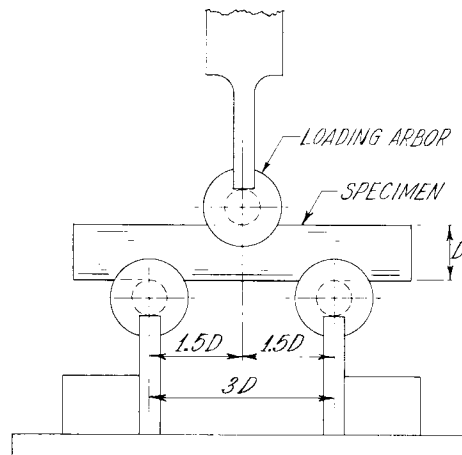


FIG. 2 Span Configuration for 3D Span. Span. May Also Be 4D, 5D, or 6D, as Required to Achieve Shear Mode of Failure

¹ This test method is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.18 on Reinforced Thermosetting Plastics.

Current edition approved Nov. 10, 1996. Published May 1997. Originally published as D 4475 – 85. Last previous edition D 4475 – 85 (1990).

² *Annual Book of ASTM Standards*, Vol 08.01.

³ *Annual Book of ASTM Standards*, Vol 03.01.

⁴ *Annual Book of ASTM Standards*, Vol 14.02.