



Designation: D 6479 – 00

Standard Test Method for Determining the Edgecomb Resistance of Woven Fabrics Used in Inflatable Restraints¹

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1. Scope

1.1 This test method covers the procedures for determining the resistance to edgecombing of a woven fabric used in inflatable restraints.

1.2 Procedures and apparatus other than those stated in this standard may be used by agreement of purchaser and supplier with the specific deviations from the standard practice acknowledged in the report.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not exact equivalents; therefore, each system must be used independent of the other.

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.*

2. Referenced Documents

2.1 ASTM Standards:

D 76 Specification for Tensile Testing Machines for Textiles²

D 123 Terminology Relating to Textiles²

D 1776 Practice for Conditioning Textiles for Testing²

D 2904 Practice for Interlaboratory Testing of a Textile Test Method that Produces Normally Distributed Data²

D 2906 Practice for Statements on Precision and Bias for Textiles²

D 5035 Test Method for Breaking Force and Elongation of Textile Fabrics (Raveled Strip)³

D 5822 (Test Method for Determining Seam Strength in Inflatable Restraint Cushion)³

E 691 Practice for Conducting an Interlaboratory Study to Determine The Precision of a Test Method²

3. Terminology

3.1 Definitions:

3.1.1 *edgecombing, n—for inflatable restraints*, the separation

of yarns from their normal orthogonal configuration in a woven fabric due to seam stress or similar action near the edge of a cut part

3.1.2 *inflatable restraint, n*—a vehicular safety device designed to cushion an occupant or equipment during collision; airbag.

3.1.3 *seam slippage, n—in sewn fabrics*, the displacement of the fabric yarn parallel and adjacent to the stitch line

3.1.4 *yarn slippage, n—in sewn fabrics*, the displacement of one or more yarns from the original position, causing differences in alignment, spacing, or both.

3.2 For definitions of other textile terms used in this test method, refer to Terminology D 123.

4. Summary of Test Method

4.1 One end of a test specimen is clamped within one jaw of a CRE tensile testing machine and a special fixture pierces a row of equally spaced needle holes through the opposite end of the specimen. In accordance with Test Method D 5035, a tensile force is applied to the specimen until rupture occurs. The measurement of the force required to cause rupture is the measurement of edgecomb resistance.

5. Significance and Use

5.1 A measurement of a fabric's edgecomb resistance indicates the relative tendency of a fabric to pull apart under seam stress or similar action. The related concepts of yarn slippage and seam slippage are limited to sewn seams, whereas the measurement of edgecomb resistance is made at the edge of a cut part in the absence of a sewn seam. The absence of a sewn seam in this test method eliminates the effect that a particular stitch might have on the tendency of a yarn to slip near an edge of a cut part

5.2 This test method is useful for material design evaluations in such applications as airbags in which seam stress is a major concern.

5.3 This method may be used as a complement to Test Method D 5822.

6. Apparatus

6.1 *Tensile Testing Machine*—A constant-rate-of-extension (CRE) type, that is designed for the tensile forces anticipated, that is operated at a rate of 200 ± 10 mm/min (8 ± 0.5 in./min), that has a force range selected such that the anticipated break

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² Annual Book of ASTM Standards, Vol 07.01.

³ Annual Book of ASTM Standards, Vol 07.02.