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Standard Test Method for BURSTING STRENGTH (LOAD) AND ELONGATION OF SEWN SEAMS OF KNIT OR WOVEN STRETCH TEXTILE FABRICS¹

This standard is issued under the fixed designation D 3940; 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 bursting strength and elongation of sewn seams in knit or stretch fabrics. The sewn seams may be obtained from previously fabricated articles such as garments or may be prepared from fabric samples.

1.2 This test method requires a straight seam line, and is not applicable if the seam line is curved.

1.3 Preparation of test specimens from fabric samples requires prior specification of sewing details as agreed upon by the purchaser and seller.

NOTE 1—If the breaking force of the fabric alone is also required, test as directed in Method D 3787.

2. Applicable Documents

2.1 ASTM Standards:

D 76 Specification for Tensile Testing Machines for Textiles²

D 123 Definitions of Terms Relating to Textiles²

D 204 Testing Sewing Threads³

D 1683 Test for Breaking Strength (Load) and Slippage of Yarns of Sewn Seams in Woven Textile Fabrics³

D 1776 Practice for Conditioning Textiles for Testing²

D 3787 Test for Bursting Strength of Knitted Goods: Constant-Rate-of-Traversal (CRT), Ball Burst Test³

D 3823 Practice for Determining Ticket Numbers for Sewing Threads³

2.2 Federal Standards:

Fed. Std. No. 751a Standard for Stitches, Seams, and Stitching⁴

3. Definitions

3.1 *failure, n.*—in sewn fabric seams, fabric or sewing thread rupture or seam-yarn slippage.

3.1.1 *Discussion*—A seam in knit or stretch fabric is considered to have failed when the sewing thread ruptures due to low longitudinal elongation of the seam.

3.2 *seam allowance, n.*—in sewn fabrics, the distance from the edge of a fabric to the parallel stitch line furthest from that edge.

3.3 *seam assembly, n.*—the composite structure obtained when fabric(s) are joined by means of a seam.

3.3.1 *Discussion*—A seam assembly may be described in terms of the fabric orientation, seam direction, seam type, stitch type, seam allowance, sewing thread tex ticket number(s) and type(s), stitch density, and stitch gage.

3.4 *seam type, n.*—in sewn fabrics, an alphanumeric designation relating to the essential characteristics of fabric positioning and rows of stitching in a specified sewn fabric seam.

3.4.1 *Discussion*—seam types are described in Fed. Std. No. 751a.

3.5 *sewn seam, n.*—in sewn fabrics, a juncture of which two or more planar structures such as textile fabrics, are joined by sewing, usually near the edge.

¹ This test method is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.54 on Consumer Product Performance.

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² 1983 Annual Book of ASTM Standards, Vols 07.01 and 07.02.

³ 1983 Annual Book of ASTM Standards, Vol 07.01.

⁴ Available from Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, Pa. 19120.