



Standard Practice for Stitches and Seams¹

This standard is issued under the fixed designation D 6193; 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 the requirements and characteristics of stitches and seams used in the fabrication of sewn items.

1.2 This practice identifies the category, formation, and general purpose for stitch types and seam types used in the fabrication of sewn items.

1.3 Subsequent to a general discussion of stitches and seams that include schematic indices, this practice is comprised of the following sections that are listed in the order in which they appear:

1.3.1 *Section 5—Classification of Stitch Types* for which drawings are shown in Stitch Figs. 1- 62,

1.3.2 *Section 6—Classification of Seam Types* for which drawings are shown in Seam Figs. 63- 281, and

1.3.3 Annex A1—Seam Assembly Recommendations.

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 123 Terminology Relating to Textiles²

D 204 Test Methods for Sewing Threads²

D 434 Test Method for Resistance to Slippage of Yarns in Woven Fabrics Using a Standard Seam²

D 1683 Test Method for Failure in Sewn Seam of Woven Fabrics²

D 1908 Test Method for Needle Related Damage Due to Sewing in Woven Fabrics²

D 3940 Test Method for Bursting Strength (Load) and Elongation of Sewn Seams of Knit and Woven Stretch Textile Fabrics³

D 4034 Test Method for Resistance to Yarn Slippage at the Sewn Seam in Woven Upholstery Fabrics – Plain, Tufted, or Flocked⁴

3. Terminology

3.1 *Definitions:*

¹ This practice is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.54 on Subassemblies. Current edition approved Nov. 10, 1997. Published March 1998.

² *Annual Book of ASTM Standards*, Vol 07.01.

³ Discontinued; See 1984 *Annual Book of ASTM Standards*, Vol 07.02.

⁴ *Annual Book of ASTM Standards*, Vol 07.02.

TABLE 1 Stitch and Seam Defects

Stitch Defects	Seam Assembly Defects
Loose stitches	Puckers
Poorly formed stitches	Twists
Crowded stitches	Plaits
Tight stitches	Undulations
Crooked stitches	Run-off (raised seams)
Skipped stitches	Raw edges exposed (felled seams)

3.1.1 *needle damage, n—in sewn fabrics*, the partial or complete yarn severance or fiber fusing caused by a needle passing through a fabric during sewing.

3.1.1.1 *Discussion*—This can also be referred to as needle cuts.

3.1.2 *seam, n*—a line where two or more fabrics are joined, usually near the edge. *See also sewn seam, glued seam, stapled seam, thermally bonded seam.*)

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

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

3.1.5 *seam damage, n—in sewn fabrics*, an adverse change in the physical condition of one or more of the components in a seam which would reduce the seam acceptability such as yarn slippage, needle damage, or fabric rupture.

3.1.6 *seam efficiency, n—in sewn fabrics*, the ratio of seam strength to fabric strength.

3.1.6.1 *Discussion*—For some constructions, yarn strength and stitch type can contribute to a higher seam efficiency value.

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

3.1.8 *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.

3.1.9 *sew, v*—to unite or fasten with stitches.

3.1.10 *sewing thread, n*—a flexible, small-diameter yarn or strand, usually treated with a surface coating, lubricant, or both, intended to be used to stitch one or more pieces of material or an object to a material.

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

3.1.12 *stitch, n—in sewing*, the configuration of the interlacing of sewing thread in a specific repeated unit. (See also