



Designation: D7722 – 22

Standard Terminology Relating to Assembly of Textile Structures¹

This standard is issued under the fixed designation D7722; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This terminology identifies industrial terms related to stitches and seams that are used for the assembly of textile structures.

1.2 Section 3, Terminology, is categorized into two subsections, specific to the two areas of specialization under this document.

1.2.1 Section 3.1 Relating to Seams.

1.2.2 Section 3.2 Relating to Stitches.

1.3 For other terms relating to textiles refer to Terminology D123.

1.4 *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

D123 Terminology Relating to Textiles

D1683/D1683M Test Method for Failure in Sewn Seams of Woven Fabrics

D1908 Test Method for Needle-Related Damage Due to Sewing in Woven Fabrics³

D5034 Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)

D6193 Practice for Stitches and Seams

3. Terminology

3.1 *Definitions Relating to Seams:*

¹ This terminology is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.54 on Subassemblies.

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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³ Withdrawn. The last approved version of this historical standard is referenced on www.astm.org.

critical sewn seam—*as related to assembly of sewn textile structures*, those junctions of textile fabric sections where failure of the seam assembly results in the textile structure being unable to meet the performance requirements for the intended use. (See *seam failure*; *sewn seam strength*).

DISCUSSION—Textile fabrics, which are manufactured at fixed widths and rolled on holders having various lengths, need to be cut into various shapes for assembly and manufacture of end use textile items. The types of end use items can vary from a small bag with drawstring to a large geotextile stabilization project. As such, the fabrics used for the end use projects can have a mass from 2 oz/yd² (67 g/m²) up to 80 oz/yd² (2665 g/m²); and a tensile strength from 3 lbf (13N) up to 1200 lbf (5350 N).

It is anticipated that based on the fabric structure and end use assembly, critical seams be able to achieve seam efficiency that is from 60 % to 80 % of the fabric tensile strength. While a fabric having tensile strength of 13N is anticipated to demonstrate seam efficiency of approximately 10 N, 80 % of the fabric tensile strength; it is anticipated that a fabric having a tensile strength of 5350 N will have a seam efficiency of approximately 3200 N, 60 % of fabric tensile strength.

double-stitched seam-finish, *n*—a finish for the raw edges of a plain seam, in which another row of machine stitching is made through both seam allowances placed together. **D1683/D1683M, D6193**

grin, *v*—*in sewn seams*, to stress a seam so that the individual stitches can be seen.

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.

DISCUSSION—This can also be referred to as needle cuts. **D1908-89**

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*.) **D6193**

seam allowance, *n*—*in sewn fabrics*, the distance from the edge of a fabric to the parallel stitch line furthest from that edge. **D1683/D1683M, D6193**

seam assembly, *n*—the composite structure obtained when fabric(s) are joined by means of a seam. **D1683/D1683M, D6193**

DISCUSSION—A seam assembly may be described in terms of fabric orientation, seam direction, seam type, stitch type, seam allowance, sewing thread tex number(s) and type(s) stitch density, stitch gage, and rows of stitching. **D1683/D1683M**