



Designation: D 4850 – 02

Standard Terminology Relating to Fabric¹

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1. Scope

1.1 This terminology covers definitions of technical terms used in the industry related to textile fabrics. Terms that are generally understood or adequately defined in other readily available sources are not included. Other terminology standards that have terms related to textile fabrics are shown in 2.1

2. Referenced Documents

2.1 ASTM Standards:

- D 123 Terminology Relating to Textiles²
- D 3990 Terminology Relating to Fabric Defects³
- D 4848 Terminology for Force, Deformation and Related Properties of Fabric³

3. Terminology

3.1 Definitions:

abrasion, *n*—the wearing away of any part of a material by rubbing against another surface. **D 3884, D 3885, D 3886, D 4157, D 4158, D 4685, D 4966**

abrasion cycle, *n*—one complete movement across the surface of a material.

DISCUSSION—The complete movement for an abrasion cycle is dependent on the action of the abrasion machine and the test method used. It may consist of one back-and-forth unidirectional movement or one circular movement, or a combination of both. **D 3885**

air permeability, *n*—the rate of air flow passing perpendicular through a known area under a prescribed air pressure differential between the two surfaces of a material.

DISCUSSION—Air permeability of fabric at a stated pressure differential between two surfaces of the fabric is generally expressed in SI units as $\text{cm}^3/\text{s}/\text{cm}^2$ and in inch-pound units as $\text{ft}^3/\text{min}/\text{ft}^2$ calculated in operating conditions. (See **permeability, porosity.**) **D 737**

air-supported roof, *n*—a fabric roof-system that is properly secured and primarily supported and held in place by air pressure. **D 4851**

architectural-use, *n*—*in the building trade*, a descriptive term for fabrics used in fabric roof-systems or similar industrial applications. (See also **fabric roof-system.**) **D 4851**

bagging, *n*—a very heavy, loosely woven fabric used primarily for bale covering, woven from heavy, tightly twisted roving, or fibrillated continuous filament yarns. **D 4850**

bending length, *n*—(1) *general*—a measure of the interaction between fabric weight and fabric stiffness as shown by the way in which a fabric bends under its own weight. It reflects the stiffness of a fabric when bent in one plane under the force of gravity, and is one component of drape; (2) *specific*—the cube root of the ratio of the flexural rigidity to the weight per unit area. **D 1388**

book fold, *n*—a fabric doubled selvage to selvage, then folded back and forth upon itself in predetermined lengths. (See also **shoe fold.**)

DISCUSSION—When the piece is completed, the fold-edges on each side are folded once more upon themselves so that the fold-edges are inside, forming a compact package as long as one half the width of the fabric. **D 4850**

bow, *n*—a fabric condition resulting when filling yarns or knitted courses are displaced from a line perpendicular to the selvages and form one or more arcs across the width of the fabric. (See also **double bow.**) **D 3882, D 3990**

braided fabric, *n*—a structure produced by interlacing three or more ends of yarns in a manner such that the paths of the yarns are diagonal to the vertical axis of the fabric. **D 4850**

broken end, *n*—*in woven fabrics*, a void in the warp direction due to yarn breakage. **D 3990**

burlap, *n*—a coarse, heavy, plain weave fabric of coarse single jute yarn. **D 4850**

bursting strength, *n*—the force or pressure required to rupture a fabric by distending it with a force, applied at right angles to the plane of the fabric, under specified conditions. **D 3786, D 3787, D 3887**

circular bend, *n*—simultaneous, multidirectional deformation of a fabric in which one face of a flat specimen becomes concave and the other becomes convex. **D 4032**

coated fabric, *n*—a flexible material composed of a fabric and any adherent polymeric material applied to one or both surfaces. (See also **laminated fabric.**) **D 4850, D 4851, D 5446**

color contrast, *n*—*in textiles*, a general term for a visible color

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

³ *Annul Book of ASTM Standards*, Vol 07.02.

difference between two adjacent areas.

DISCUSSION—For the purpose of test methods D3939 and D5362, a color contrast is a visible color difference between a snag and the immediate surrounding area of the fabric that has no defects. Color contrasts often occur when printed fabrics are snagged. **D 5362, D 3939**

corduroy, *n*—a filling cut-pile fabric in which the cut fibers form a surface of wales (rounded cords or ribs) which usually run warpwise. **D 4685, D 4850**

count, *n*—*in woven textiles*, the number of warp yarns (ends) and filling yarns (picks) per unit distance as counted while the fabric is held under zero tension, and is free of folds and wrinkles. **D 3775**

count, *n*—*in knitted fabrics*, the number (counted units) of wale loops and course loops per 25 mm (1 in.). **D 3787**

course, *n*—*in knitted fabrics*, a row of successive loops in the width direction of the fabric. **D 2594**

crease retention, *n*—that property of a fabric which enables it to maintain an inserted crease. **D 4850**

critical defect, *n*—a serious defect that judgment and experience indicate is likely to prevent the usability or proper performance of a product from its intended purpose. **D 5430**

cut, *n*—*as applied to woven fabric*, a length approximately 60 yard in the greige. **D 4850**

cut strip test, *n*—*in fabric testing*, a strip test in which the specimen is cut to the specified testing width. **D 5035**

defect, *n*—*in inspection and grading*, the departure or non-conformance of some characteristic from its intended level or state.

DISCUSSION—In inspection and grading the characteristic is a visual one. **D 5430**

dimensional change, *n*—a generic term for changes in length or width of a specimen subjected to specified conditions.

DISCUSSION—Dimensional change is usually expressed as a percent of the original dimension of the specimen. When a dimension increases it is often referred to as growth. When a dimension decreases it is often referred to as shrinkage. **D 1117, D 2646**

dimensional stability, *n*—the ability of a material to retain its length and width dimensions under specified conditions.

DISCUSSION—The dimensions are length and width and the specified conditions are those of cycled humidity and temperature. **D 6207**

denim, *n*—a durable woven twill fabric, usually of all cotton or a blend of cotton and manufactured fibers, made from a variety of yarn numbers, and in various fabric weights, colors, designs, and finishes. **D 4850**

direction of slippage, *n*—*at the seam*, the line of movement parallel to either the filling or the warp on a woven fabric in which minimum force is required to produce yarn slippage.

DISCUSSION—The fabric may be pulled in both directions in many cases. **D 4034**

distortion, *n*—*in fabrics*, a general term for a visible defect in the texture of a fabric.

DISCUSSION—For the purpose of Test Methods D 3939 and D 5362,

snags are composed of different combinations of protrusions and distortions. A distortion is characterized by a group of fibers, yarn, or a yarn segment that is displaced from its normal pattern so that there is a visible change in the texture of the fabric; however, the displaced group of fibers, yarn, or yarn segment does not extend above the fabric surface. Distortions include conditions where (1) tension on a snagged yarn has changed the size of some loops within a knitted fabric and the result is a pucker on the surface of the fabric, and (2) tension on a snagged yarn has caused a yarn to break off within a woven fabric and the result is a change in the texture where the yarn used to be. **D 3939, D 5362**

double bow, *n*—two fabric bows, arcing in the same direction, as in a flattened M or W depending on the viewing angle. (Compare **double reverse bow** and **double bow**.)

DISCUSSION—In tubular knits, there may be defferentail bowing between the top and the bottom of the tube. **D 3882, D 3990**

double hooked bow, *n*—one hooked bow at each side of the fabric that arc in opposite directions. (See also **hooked bow**.) **D 3882, D 3990**

double reverse bow, *n*—two fabric bows arcing in opposite directions. (See also **bow**. Compare **double bow**.) **D 3882**

double-stroke, *n*—*in flex and abrasion testing*, an abrasion cycle that consists of one forward and one backward motion. **D 3885**

duck, *n*—a compact, firm, heavy, plain-weave cotton fabric, mass per square yard 6 to 50 oz. (See also **flat duck**, and **plied yarn duck**.) **D 4850**

durable-press, *adj*—having the ability to retain substantially the initial shape, flat seams, pressed-in creases, and un-wrinkled appearance during use and after laundering or drycleaning. (See **wash and wear**.)

DISCUSSION—The use of the term **permanent-press**, *adj*, as a substitute for **durable-press** is not recommended. **D 4850**

elastic fabric, *n*—a fabric made from an elastomer either alone or in combination with other textiles.

DISCUSSION—At room temperature an elastic fabric will stretch under tension and will return quickly and forcibly to substantially its original dimensions and shape when tension is removed.

Elastic fabrics may be manufactured by weaving, braiding, knitting, or other processes. **D 1775, D 4850, D 4964**

elastic tape, *n*—a tape containing rubber or other elastomers to permit rubber-like stretch in at least one direction. **D 4850**

elastic webbing, *n*—a webbing containing rubber or other elastomers to permit rubber-like stretch in at least one direction. **D 4850**

end, *n*—*in fabric*, an individual warp yarn (single or ply) or cord.

DISCUSSION—The term is sometimes used to indicate a short length or remnant of fabric. **D 4850**

fabric, *n*—*in textiles*, a planar structure consisting of yarns or fibers. **D 737, D 1388, D 1424, D 4850, D 5587**

fabric growth, *n*—the increase in the original length of a specimen after the application of a specified force for a prescribed time and the subsequent removal of the tension.

DISCUSSION—Fabric growth usually is expressed as a percentage of

- the length of the specimen prior to application of the force. (See also **permanent deformation**.) **D 2594, D 3107**
- fabric roof-system**, *n*—a system of coated fabric or laminated fabric along with support cables, edge ropes, clamps, neoprene, roof drains, arch wear strips, and anchor bolts that constitutes the outside top covering of a building. **D 4851**
- fabric stretch**, *n*—the increase in length of a specimen of fabric resulting from a force applied under specified conditions.
- DISCUSSION—The difference is usually expressed as a percentage of the initial length of the fabric specimen. Fabric stretch differs from fabric elongation in that the latter (up to the point of rupture) reflects the instantaneously existing amount of stretch under a constantly increasing tension force. **D 2594, D 3107**
- fatiguing force**, *n*—*in testing sewn seams*, the force that is repeatedly applied to a test specimen. **D 4033**
- filler**, *n*—nonfibrous material, such as insoluble clays or gypsum, together with starches, gums, and so forth, added to a fabric to increase its weight or to modify the appearance or handle of the fabric. (*Syn.* back-sizing.) (Compare **sizing**.) **D 4850**
- filling**, *n*—yarn running from selvage to selvage at right angles to the warp in a woven fabric.
- DISCUSSION—Filling yarn is also designated as “weft” and occasionally as “woof.” In the United Kingdom the word “filling” corresponds to the word “filler” in the United States. **D 3775**
- filling elongation and tension**, *n*—stretch or tension measured at right angles to the warp direction of the fabric. **D 1775**
- filling-faced twill**, *n*—a weave in which filling yarns float over warp yarns, to produce a diagonal effect in the resulting fabric. (See also **twill weave** and **warp faced twill**.) **D 4850**
- filling tests**, *n*—*in fabric testing*, tests in which the filling yarns are torn. **D 1424**
- filling-to-filling seam**, *n*—a sewn seam in which the yarns in the filling direction on both sides of the sewn seam are perpendicular to the seam. **D 4033**
- finished fabric weight**, *n*—mass per unit area expressed in grams per square metre (ounces per square yard), grams per linear metre (ounces per linear yard), or inversely as metres per kilogram (linear yards per pound), or square metres per kilogram (square yards per pound). **D 3887**
- finished yield**, *n*—*in knitted fabrics*, the number of finished square metres per kilogram (square yards per pound) of finished fabric. **D 3887**
- flagging**, *n*—*in sewn seams*, a mode of failure evidenced by slippage of one or more yarns entirely out of the original seam. **D 4033**
- flat duck**, *n*—duck fabric having the warp of two single yarns woven as one and either single or plied filling yarn. (See also **duck**.) **D 4850**
- flexibility**, *n*—that property of a material to endure repeated flexing, bending, or bowing without rupture. **D 4850, D3885**
- flexural rigidity**, *n*—*general*—resistance to bending; *specific*—the couple on either end of a strip of unit width bent into unit curvature in the absence of any tension. **D 1388**
- float**, *n*—*in woven fabric*, the portion of a warp or filling yarn that extends unbound over two or more filling or warp yarns. **D 4850**
- force-recovery cycle**, *n*—*in elastic fabric testing*, a continuous curve or plot of force versus elongation (with movement stopped momentarily at point of reversal) describing the elongation and recovery of an elastic fabric; also known as the loading and unloading cycle. **D 1775**
- gage**, *n*—*in knitted fabrics*, a measure of fineness expressing the number of needles per unit of width (across the wales). **D 4850**
- gage**, *n*—*in full-fashioned hosiery*, a measure of fineness expressing the number of needles per 38 m (1.5 in.) on the needle bar. **D 4850**
- gage**, *n*—*in warp knitting*, for simplex, tricot, milanese, number of needles per English inch; for raschel, kayloom, twice the number of needles per English inch. **D 4850**
- gaiting**, *n*—*in warp knitting*, the setting of a guide bar one or more needle spaces to the right or left in order to increase the pattern possibilities. **D 4850**
- grab test**, *n*—*in fabric testing*, a tensile test in which the central part of the width of the specimen is gripped in the clamps.
- DISCUSSION—For example, if the specimen width is 100 mm (4.0 in.) and the width of the jaw faces 25 mm (1.0 in.), the specimen is gripped in the clamp with approximately 37.5 mm (1.5 in.) of fabric protruding from each side of the jaws. **D 4850, D 5034**
- grade**, *n*—*in warp knitting*, a term used to indicate the defect index evaluation of fabric determined by the number of defects per unit, for example per pound, per linear yard, or per square yard. **D 4350, D 4850**
- grade**, *v*—to assign a numerical value based on number, size, and severity of defects seen during a visual inspection. **D 5430**
- growth**, *n*—*of textiles*, the difference between the original length of a specimen and its length after the application of a specified force for a prescribed time, and the subsequent removal of the force. (See also **permanent deformation** and **dimensional change**.) **D 2594, D 3107**
- hooked bow**, *n*—a fabric condition in which the filling yarns or knitted courses are in the proper position for most of the fabric width but are pulled out of alignment at one side of the fabric. (See also **double hooked bow**.) **D 3882**
- impregnated fabric**, *n*—a fabric in which the interstices between the yarns are completely filled with the impregnating compound throughout the thickness of the fabric, as distinguished from sized or coated fabrics, where these interstices are not completely filled.
- DISCUSSION—A fabric woven from impregnated yarns, but not impregnated after weaving, is not an impregnated fabric. **D 4850**
- inspection**, *n*—the process of measuring, examining, testing, gaging, or otherwise comparing a characteristic or property of a material with applicable requirements. In this case only by visual examination. **D 5430**
- jacket**, *n*—a textile, woven or felted into tubular or sleeve form, ready for covering and shrinking on a machine roll.

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knitted fabric, n—a structure produced by interlooping one or more ends of yarn or comparable material. **D 3786, D 3787, D 3789, D 3882, D 3887, D 4850, D 5378**

laid fabric, n—a fabric made without filling yarn, the parallel warp yarns being held together by means of rubber latex or other binding material. **D 4850**

laminated fabric, n—*in fabric roof systems*, a flexible fabric system composed of superimposed layers of fabric firmly united by bonding or impregnating with an adherent polymeric material to one or more surfaces. **D 4851**

length, n—*of a fabric*, the distance from one end of a fabric to the other, measured parallel to the side edge of the fabric while it is under zero tension and is free of folds or wrinkles. **D 3773, D 3887**

length of tear, n—*in tear testing of fabrics*, the measured distance propagated in a specimen by a tearing force from the initiation of the test to the termination of the test. **D 1424**

lisle, n—a fine high-twisted and hard-twisted cotton thread, at least two-ply, used especially for hosiery.

DISCUSSION—Lisle refers also to knit goods used in gloves or hose made from lisle thread (first made in Lisle, France). **D 4850**

loop tension, n—*in elastic material testing*, the total tension at any specified extension that is exerted on a specimen in a loop formation. **D 4964**

low-power stretch, n—that property of a fabric whereby it exhibits high fabric stretch and good recovery from low tension. **D 2594**

major defect, n—a defect other than critical, that judgment and experience indicate is likely to materially reduce the usability of a product for its intended purpose. **D 5430**

median force, n—in tensile testing, that force level that is exceeded by half the recorded peaks and which in turn exceeds the other half of the recorded peaks, in a specified distance of cross-head travel. **D 2261**

minor defect, n—a defect that is not likely to materially reduce the usability of the product from its intended purpose, or is a departure from established standards having little bearing on the effective use of operation of a product. **D 5430**

modified grab test, n—*in fabric testing*, a tensile test in which the control part of the width of the specimen is gripped in the clamps and in which lateral slits are made midlength of the specimen severing all yarns bordering that portion of the specimen held between the two clamps.

DISCUSSION—The slit modification reduces the fabric assistance inherent in the grab test procedure to a practical minimum. **D 4850, D 5034**

narrow elastic fabric, n—an elastic fabric that is less than 150 mm, (6 in.), in width. (Compare **wide elastic fabric**.) **D 1775, D 4848, D 5278, D 4964**

narrow fabric, n—a fabric not exceeding 300 mm (12 in.) in width.

DISCUSSION—The category of narrow fabrics includes tapes, ribbons, and webbings. Narrow fabrics can be produced from any fiber, including elastomers, by weaving, braiding, knitting, or other methods.

They can also be made by cutting or slitting wider fabrics into narrow strips. The term “narrow fabric” is incorrectly applied in the trade to fabrics which are narrower than the normal width for a specific fabric type. For example, woolens and worsteds under 52 in. (1.3 m) wide and cotton sheetings under 40 in. (1.0 m) are often called “narrow fabrics.”

D 4850

peak force, n—*in tear testing of fabrics*, the maximum force required to break one or more yarn components in a woven or knitted fabric specimen, or break the fiber, fiber bonds or fiber interlocks in other manufactured forms.

DISCUSSION—The peak force may consist of a single peak or a series of peaks depending upon the nature of the fabric. Typically for woven fabrics, if a small decrease in force occurs when the force is increasing, it is not considered to peak unless the indicated force exceeds the force required to break a yarn. Lower shifts corresponding to yarn movement do not qualify as peaks since no yarns are broken. **D 2261, D 5587**

permeability, n—the rate of flow of a fluid under a differential pressure through a material

DISCUSSION—Fluid under differential pressure includes:

- (1) Gas under differential gas pressure,
- (2) Vapor under differential vapor pressure, and
- (3) Water under differential hydrostatic pressure. (See also **air permeability**.) **D 4850**

pick, n—an individual filling yarn. **D 3775**

pick count, n—*in woven fabrics*, the number of filling yarns per unit fabric length. **D 3775**

pile, n—*in pile fabric*, the raised loops or tufts (cut loops) that form all or part of the fabric surface. (See also **cut pile floor covering** and **looped pile floor covering**.) **D 4850, D 4772**

pile retention, n—*in corduroy*, the degree to which cut-pile yarns are held secure and intact during wear. **D 4685**

pilling resistance, n—resistance to the formation of pills on the surface of a textile fabric. **D 4970, D 3511, D 3512, D 3514**

pills, n—bunches or balls of tangled fibers which are held to the surface of a fabric by one or more fibers. (Compare **fuzz ball**.) **D 4970, D 3511, D 3512, D 3514, D 3990**

plain weave, n—a fabric pattern in which each yarn of the filling passes alternately over and under a yarn of warp and each yarn of the warp passes alternately over and under a yarn of the filling. **D 4850**

pleat, n—three layers of fabric involving two folds or reversals of direction; the back fold may be replaced by a seam.

DISCUSSION—Pleats may be either pressed to give sharp creases or left unpressed to give soft folds. **D 4850**

plied yarn duck, n—duck fabric with plied yarns in both warp and filling. (See **flat duck**.) **D 4850**

porosity, n—the ratio of the volume of air or void contained within the boundaries of a material to the total volume (solid matter plus air or void) expressed as a percentage.

DISCUSSION—Porosity accordingly equals:
 $(V \times 100)/T$

where:

V = volume of voids, and
 T = total volume.

(See also **air permeability** and **permeability**.) **D 4850**

pressed-in crease, n —a sharp crease inserted intentionally in a fabric usually by application of pressure, heat, and moisture. **D 4850**

pressure, n —the force exerted to a surface per unit area.

DISCUSSION—Pressure may be expressed in any appropriate or specified units, such as pascals (PA), newtons per square meter (N/m²), or pounds-force per square inch (psi). **D 1777**

protrusion, n —*in fabrics*, a general term for a visible group of fibers, a yarn, or a yarn segment that extends above the fabric surface. **D 5362, D 3939**

rack, n —*in warp knitting*, a unit of length measure consisting of 480 courses. **D 4850**

rack length, n —*in warp knitting*, the length of the fabric produced by knitting one rack, measured on the machine under operating take-up tension.

DISCUSSION—Rack length is usually expressed in “inches-per-rack” (IPR). **D 4850**

raveled strip test, n —*in fabric testing*, a strip test in which the specimen is cut wider than the specified testing width and an approximately even number of yarns are removed from each side to obtain the required testing width. **D 5035**

reinforced seam, n —*in sewn seams*, a seam that includes an additional layer of material on the face or back side of the seam allowance.

DISCUSSION—The added material is used to strengthen the seam and delay failure of the seam beyond the minimal acceptable limits and so enable the specimen to pass a specified cyclic impact test. **D 4033**

resilience, n —that property of a material to recover to approximately its original size and shape after deformation. **D 4850**

resistance to yarn slippage, n —the force required to separate the parts of a standard seam by a specified amount. **D 4034, D 4159, D 434**

resistance to yarn slippage, n —*at the seam*, the force required to displace one or more yarns in a fabric from the original position, causing differences in alignment, or spacing, or both. **D 434, D 4033, D4034**

ribbon, n —a fine-textured, narrow fabric which weighs less than 510 g/m² (approximately 2.6 lb/100 yd per inch of width or 15 oz/yd²) and which is used primarily for trimming or decorative purposes. (See also **narrow fabric**.)

DISCUSSION—Usually ribbons are woven fabrics less than 4 in. (100 mm) wide. **D 4850**

selvage, n —the woven edge portion of a fabric parallel to the warp.

DISCUSSION—The selvage usually has an increased number of ends per inch. **D 4850**

shoe fold, n —a fabric folded from both ends into twelve or sixteen folds to the piece, the length of the fold depending upon the length of the piece. (Compare **book fold**.)

D 4850

sizing, n —a generic term for compounds which, when applied to yarn or fabric, form a more or less continuous solid film around the yarn and individual fibers.

DISCUSSION—Sizing varieties include:

(a) *Sizing*—Applied to warp yarn to bind the fibers together and stiffen the yarn.

(b) *Dope*—Applied to crepe yarn to set the twist and assist creping.

(c) *Dressing*—Applied to sewing thread to bind the strands together and leave a pliable yarn.

Varieties applied to fabric include:

(a) *Sizing*—Applied to fabrics to improve their physical properties such as mass, stiffness, and so forth.

(b) *Dope*—Applied to airplane fabrics to make them taut and to balloon fabrics to make them less permeable to gases.

(c) *Dressing*—Applied to fabrics to produce a glazed, lustrous effect. (Compare **filler**.) **D 4850**

skew, n —a fabric condition resulting when filling yarns or knitted courses are angularly displaced from a line perpendicular to the edge or side of the fabric.

DISCUSSION—Knitted courses or filling yarns usually appear as straight lines at right angles to the edge or side of the fabric. When tubular knitted fabric is finished, differential skew may occur on the top and bottom part of the tube. **D 3882, D 3990**

sley, n —the number of warp ends per 25 mm (1 in.) of fabric width, exclusive of selvage. **D 4850**

snag, n —*in fabrics*, a yarn or part of a yarn pulled or plucked from the surface.

DISCUSSION—For the purpose of Test Methods D 3939 and D 5362, a snag is created when an object pulls, plucks, scratches, or drags a group of fibers, a yarn, or a yarn segment from its normal pattern. Snags can be classified into three types: (1) snags that have a protrusion and no distortion, (2) snags that have a distortion and no protrusion, and (3) snags that have both a protrusion and a distortion. Other changes in appearance, such as color contrasts, should be reported because they affect the visibility of a protrusion or a distortion. **D 3939, D 3990, D 5362**

snagging resistance, n —*in fabrics*, the property of a fabric whereby yarns or parts of yarns are prevented or inhibited from being pulled or plucked from the surface. **D 3939, D 5362**

stable fabric, n —a fabric, the dimensions of which do not change significantly during processing or use.

DISCUSSION—A stable fabric is also a fabric that does not change significantly with multiple passes through measuring devices. **D 3773**

stain, n —an area of discoloration that penetrates the fabric surface. **D 3990, D 5426**

static force, n —*in textile testing*, a mass which exerts a force by means of the mass alone without motion. (*Syn.* dead load.) **D 5278**

stiffness, n —resistance to bending. **D 1388, D 4032**

stiffness, n —*with regard to circular bending of textiles*, resistance to multidirectional bending. **D 4032**

stretch woven fabric, n —a woven fabric which is capable of at least 20 % stretch in either warp or filling direction, or

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both, under forces and conditions encountered in use, and almost complete recovery after removal of the force.

DISCUSSION—There are currently two main classes of woven stretch fabrics:

(1) Fabrics which rely more on force of recovery than on stretch for their utility. This class includes most of the woven elastic fabrics containing 15 % or more elastomer. These fabrics are sometimes referred to as power stretch fabrics.

(2) Fabrics which rely more on stretch than on force of recovery for their utility. This class includes most of the woven elastic fabrics containing less than 15 % elastomer, most woven fabrics containing stretch yarns, and many other woven fabrics with built-in stretch characteristics. These fabrics are sometimes referred to as comfort stretch fabrics.

The term stretch fabric is sometimes applied to knitted and other types of fabrics which are capable of high stretch and recovery.

D 4850, D3787

strip test, *n*—*in fabric testing*, a tensile test in which the full width of the specimen is gripped in the clamps. **D 5035**

surface contour, *n*—divergence of a surface from planeness rough (high) to smooth (low). **D 4850**

surface friction, *n*—resistance to slipping offered by surface harsh (high) to slippery (low). **D 4850**

surface water absorption, *n*—*by a fabric*, the process of removing liquid water from a surface such as human skin, dishes, or furniture. **D 4772**

take-up, *n*—*in fabrics*, the difference in distance between two points in a yarn as it lies in a fabric and the same two points after the yarn has been removed from the fabric and straightened under a specified tension, expressed as a percentage of the straightened length. **D 3883**

tearing force, *n*—*in fabric*, the force required either (1) to start or (2) to continue or propagate a tear in a fabric under specified conditions. **D1424, D 2261, D 2262, D 5587**

tearing energy, *n*—the work done in tearing a material. **D 1424**

tear resistance, *n*—*in fabrics*, the resistance to a tearing force. **D 1424**

tearing strength, *n*—*in fabric*, the capacity of a material to withstand the ultimate tearing force required to propagate a tear after its initiation. **D 1424, D 2261, D 5587**

tension, *n*—a uniaxial force tending to cause the stretching of a material. **D 1775, D 3107, D 4848, D 4964**

tension-supported roof, *n*—a fabric roof-system, that is properly secured and primarily held in place by tensile forces applied across the system. **D 4851**

tension test, *n*—*in textiles*, a test designed to measure the tautness of a textile strand or fabric. **D 1775, D 4848, D 4964**

terry fabric, *n*—a fabric with a woven warp pile or a knitted pile, with uncut loops on a single side or uncut loops on both sides, and which is used for such products as toweling, beachwear, and bathrobes. **D 4390, D 4772**

texture, *n*—the surface appearance and hand of a textile.

DISCUSSION—Texture is independent of the color of the textile.

D 4850

thermal character, *n*—that property of a fabric that makes it feel warm to the touch. **D 4850**

thickness, *n*—the distance between one surface and its opposite.

DISCUSSION—In textiles, thickness is the distance measured between the upper and lower surfaces of the material as measured under a specified pressure. It is usually determined as the distance between an anvil or base and a presser foot used to apply the specified pressure.

D 1777

thread break, *n*—*in sewn seams*, a mode of failure evidenced by rupture of the sewing thread.

DISCUSSION—A sewing thread break is not construed as a failure unless the test is being performed as a sewing thread analysis.

D 4033

tufted fabric, *n*—a fabric with a pile consisting of tufts or loops formed by inserting yarn into a previously prepared backing fabric. **D 4850, D 5684, D 5793**

twill weave, *n*—a weave characterized by diagonal lines produced by a series of floats staggered in the warp or filling direction. (See also **warp-faced twill** and **filling-faced twill**.) **D 4850**

velveteen, *n*—a woven fabric in twill or plain weave made with a short closely packed filling pile in imitation of velvet. **D 5103**

wale, *n*—*in woven fabric*, one of a series of raised portions or ribs lying warpwise in the fabric. **D 4850, D 5684**

wale, *n*—*in knitted fabrics*, a column of successive loops in the length direction of the fabric. **D 4850**

warp, *n*—(1) the yarn running lengthwise in a woven fabric; (2) a group of yarns in long lengths and approximately parallel, put on beams or warp reels for further textile processing including weaving, knitting, twisting, dyeing, and so forth. **D 4850**

warp elongation and tension, *n*—stretch or tension measured in the warp direction of the fabric. **D 1775**

warp-faced twill, *n*—a weave in which warp yarns float over filling yarns, to produce a diagonal effect in the resulting fabric. (See also **twill weave** and **filling-faced twill**.) **D 4850**

warp tests, *n*—*in fabric testing*, tests in which the warp yarns are torn. **D 1424**

warp-to-filling seam, *n*—a sewn seam in which the warp yarns are perpendicular to the sewn seam on one side of the seam and parallel to the seam on the opposite side of that seam. **D 4033**

warp-to-warp seam, *n*—a sewn seam in which the yarns in the warp direction on both sides of the seam are perpendicular to the seam. **D 4033**

warp-faced twill, *n*—a weave in which warp yarns float over filling yarns, to produce a diagonal effect in the resulting fabric. (See also **twill weave** and **filling-faced twill**.)

wash-and-wear, *adj*—a generic term applied to fabrics or garments which satisfactorily retain a neat appearance after repeated wearing and suitable home laundering with little or no pressing or ironing. (Compare **durable-press**.)

DISCUSSION—The wash-and-wear performance of a fabric or garment depends on several factors including the types and amounts (percentages) of fibers used, the fabric construction, the finishing treatment, the presence of a colored pattern (either woven or printed), and the

 **D 4850 – 02**

methods used for washing and drying. All of these factors contribute to the overall performance and determine, in any specific instance, how closely a fabric or garment will approach acceptance. **D 4850**

weight, *n*—in warp knitting, the number of tex (yards per pound) of finished fabric.

DISCUSSION—This may be expressed as square metres per kilogram or linear metres per kilogram (square yards per pound or linear yards per pound), in which case the width must be stated. **D 4850**

weight, *n*—as used with fabrics, mass per unit area.

DISCUSSION—Fabric mass per unit area is expressed either as grams per square meter (ounces per square yard) or grams per linear meter (ounces per linear yard). Fabric mass is also sometimes expressed inversely as linear meters per kilogram (yards per pound) with the fabric width stated. **D 3776**

wide elastic fabric, *n*—an elastic fabric that is at least 150 mm (6 in.) in width. (Compare **narrow elastic fabric**.) **D 1775, D 4964**

width, *n*—of flat knit fabrics, the perpendicular distance between the selvages when the fabric is under zero tension and free of folds or wrinkles. **D 3887**

width, *n*—of circular knit fabrics, twice the perpendicular distance between the enclosed edges of a flattened tube of fabric that is under zero tension and free of folds or wrinkles. **D 3887**

width, *n*—of a raised-surface fabric, the dimension included within the outer limits of the nap or pile, but excluding the selvages, or as otherwise agreed upon by the purchaser and supplier. **D 3774**

width, *n*—of a fabric, the distance from the outer edge of one selvege to the outer edge of the other selvege, measured perpendicular to the selvages while the fabric is held under zero tension and is free of folds and wrinkles. **D 3774**

width, *n*—of a fabric woven on a shuttleless loom, the distance from the outer warp on one side to the outer warp on the other side, measured perpendicular to the warp yarns while the fabric is held under zero tension and is free of folds and

wrinkles.

D 3774

woven fabric, *n*—a structure produced when at least two sets of strands are interlaced, usually at right angles to each other, according to a predetermined pattern of interlacing, and such that at least one set is parallel to the axis along the lengthwise direction of the fabric. **D 3773, D 5378, D3786**

wrinkle recovery, *n*—that property of a fabric which enables it to recover from folding deformations. **D 4850**

wrinkle resistance, *n*—that property of a fabric which enables it to resist the formation of wrinkles when subjected to a folding deformation.

DISCUSSION—“Crease resistance” is a term commonly used in place of the preferred term “wrinkle resistance.” **D 4850**

yarn break, *n*—in sewn seams, a mode of failure evidenced by yarns rupturing at the seam or at any other area in the test specimen. (*Syn.* yarn burst and yarn tear.) **D 4033**

yarn crimp, *n*—in fabric, the undulations or waviness in a yarn due to interactions with other yarns.

DISCUSSION—Yarn crimp in a fabric is the difference in the measured distance between two points on a yarn as it lies in the fabric, and the same two points when the yarn has been removed from the fabric and straightened under a specified tension, expressed as a percent based on the in-fabric distance. **D 3883**

yarn distortion, *n*—in woven fabrics, a condition in which the symmetrical surface appearance of a fabric is altered by the shifting or sliding of warp or filling yarns. **D 1336**

yarn slippage, *n*—at the seam in sewn fabrics, the displacement of one or more yarns from the original position, causing differences in alignment, spacing, or both. **D 4033, D 4034**

yarn take-up, *n*—in fabric, the additional length of yarn used to make a given length of fabric. **D 3883**

yield, *n*—in knitted fabrics, the number of finished square metres per kilogram (square yards per pound) of greige fabric. **D 4850, D 3883**

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