



Standard Terminology Relating to Fabric Defects¹

This standard is issued under the fixed designation D 3990; 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 terminology covers defects in both woven and knit fabrics. Descriptions of the defects, illustrations, and related material are given under the most frequently used terms; synonym(s) are listed in parentheses and cross referenced.

2. Terminology

2.1 Definitions:

abrasion mark, *n*—an area damaged by friction. (*Syn.* chafe mark)

apron mark—See **decating mark**.

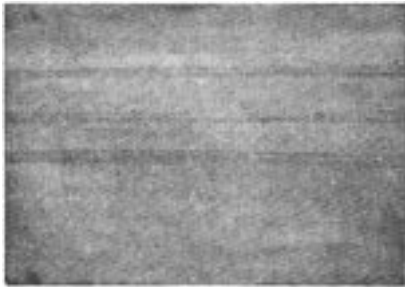
baggy cloth—See **wavy cloth**.

baggy selvage—See **slack selvage**.

balling up—See **fuzz ball**.

barré, *n*—an unintentional, repetitive visual pattern of continuous bars and stripes usually parallel to the filling of woven fabric or to the courses of circular knit fabric. (Compare **warp streak**, **mixed filling**)

DISCUSSION—The term “barré” is sometimes used as a synonym for “warp streaks” in warp knit and woven fabrics. Barré can be caused by physical, optical, or dye differences in the yarns, geometric differences in the fabric structure, or by any combination of these differences.



Barré

beaded selvage—See **loopy selvage**.

bias—See **skew**.

birdseye, *n*—in knitted fabrics, an unintentional tuck stitch.

blanket mark—See **sanforizing mark**.

blotch, *n*—an offcolored area of any shape caused by grease or oil. (*Syn.* **oil spot**)

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

bow, double—See **double bow**.

box mark—See **shuttle mark**.

break-out—See **smash**.

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

broken filament, *n*—in multifilament yarn, breaks in one or more filaments. (*Syn.* strip back, skin back)

broken pick, *n*—in woven fabrics, a discontinuity in the filling direction caused by a break or cut in the filling yarn.



Broken Pick

broken selvage—See **cut selvage**.

bruise, *n*—in fabrics, an area that has been subjected to impact or pressure, that differs from the adjacent normal fabric. (*Syn.* **pressure mark**.)

bunch—See **slug**.

chafe mark—See **abrasion mark**.

clip mark, *n*—a visual deformation near the edge of a fabric parallel with the lengthwise direction caused by pressure exerted by a clasping device on a clip tenter frame. (See also *pin mark*.)

coarse end, *n*—a larger than normal diameter warp end. (*Syn.* heavy end) (Compare **fine end**)
coarse filling—See **coarse pick**.

coarse pick, *n*—in woven fabrics, one or more picks of larger diameter than the normal filling yarn in the fabric. (*Syn.* thick filling)

cockles, *n*—in yarns, irregular thick, uneven, lumps.

color bleeding, *n*—the loss of color from a dyed fabric when

¹ This terminology is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.59 on Fabric Test Methods, General.

Current edition approved Sept. 10, 1999. Published January 2000. Originally published as an appendix to Terminology D 123 in 1964. Redesignated D 3990 in 1981. Last previous edition D 3990 – 93 (1998).

immersed in water, drycleaning solvent, or similar liquid medium, with consequent coloring of the liquid medium. (Compare **color staining**.)

color staining, *n*—the undesired pickup of color by a fabric: (1) when immersed in water, drycleaning solvent, or similar liquid medium, that contains dyestuffs or coloring material not intended for coloring the fabric, or (2) by direct contact with other dyed material from which color is transferred by bleeding or sublimation. (Compare **crocking**, **color bleeding**)

corded selvage—See **loopy selvage**.

crack mark, *n*—an open place causing a streak of variable length approximately parallel to the length or width. (*Syn.* open place, thin spot)



Crack Marks

crease, *n*—a fabric defect evidenced by a break, line, or mark generally caused by a sharp fold. (*Syn.* mill wrinkle)

crease mark, *n*—a visible deformation left in a fabric after a crease has been incompletely removed during fabric processing.

crocking, *n*—a transfer of color from the surface of a colored fabric to an adjacent area of the same fabric or to another surface principally by rubbing action. (Compare **color staining**)



Crease

crow'sfeet, *n*—*in fabrics*, fine wrinkles of varying degrees of intensity, size, and shape.

DISCUSSION—Crow'sfeet may occur during wet processing and on finished goods after folding.

curl—See **kink**.

curled selvage, *n*—self-descriptive. (*Syn.* rolled selvage, turned-over edge)

cut pick—See **broken pick**.

cut selvage, *n*—cuts or breaks that occur in the selvage only. (*Syn.* broken selvage, damaged selvage)

damaged selvage—See **cut selvage**.

dead cotton, *n*—a small nep of cotton fibers which is gathered on the surface of the fabric and which is different in color from the surrounding fabric.

decating mark, *n*—a crease mark or impression extending across the cloth near the beginning or end of a piece due to the thickness of the fabric leader seam. (*Syn.* apron mark, leader mark)

doctor streak, *n*—*in printed cloth*, a wavy white or colored streak in the warp direction of printed cloth caused by a defective doctor blade.

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

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

double pick, *n*—*in woven fabrics*, two picks wrongly placed in the same shed. (See also **mispick**) (Compare **jerk-in**)

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

draw-back, *n*—a weave distortion characterized by tight and slack places in the same warp yarn. (*Syn.* hitch-back)

dropped stitch, *n*—*in knitted fabrics*, an unknitted stitch.

dye spot—See **dyestain**.

dyestain, *n*—an area of unintended discoloration due to uneven absorption of a colorant.

dye streak, *n*—an unintended irregular stripe in a fabric due to uneven absorption of a colorant.

end out, *n*—a void caused by a missing warp yarn. (*Syn.* missing end)

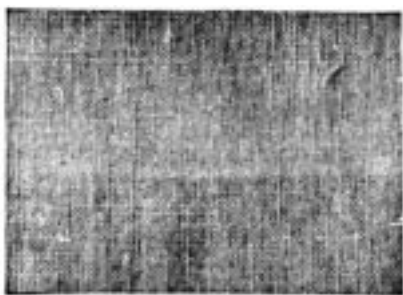


End Out

filling band, *n*—*in woven fabrics*, a visual defect across the width due to a change occurring in the yarn for a large number of picks. (Compare **filling bar**)

filling bar, *n*—*in woven fabrics*, a visual defect across the

width which contains a limited number of picks of different appearance than normal. (Compare **filling band**)



Filling Bar

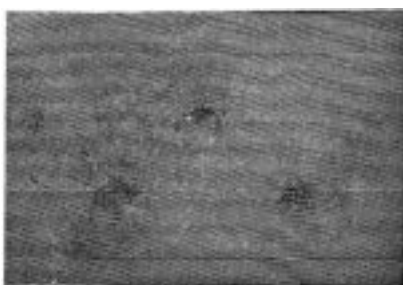
filling run-out—See **broken pick**.

fine end, *n*.—a smaller than normal diameter warp end. (*Syn.* light end, thin end) (Compare **coarse end**)

fine filling—See **thin filling**.

fine pick—See **thin filling**.

finger mark, *n*.—an irregular spot showing variation in picks per inch for a limited width.



Finger Mark

finishing bar, *n*.—an uneven appearance across the entire fabric width.

float, *n*.—a defect in which warp or filling yarn extends unbound over the ends with which it should be interlaced. (*Syn.* harness skip, overshot, skip)



Float

flyer—See **loom fly**.

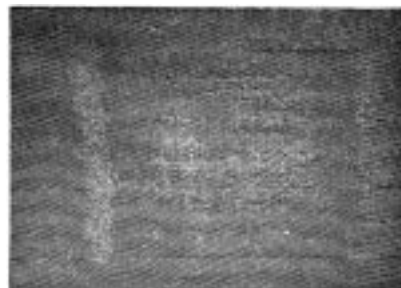
frosting, *n*.—a change in color in a limited area of a fabric caused by abrasive wear.

DISCUSSION—Frosting may be the result of differential wear, as in multicomponent blends in which the fibers do not match in shade, or of the abrasion of single-fiber constructions in which there is some variation in penetration, or incomplete penetration, of dye-stuff. The use of the terms “differential wear” and “fibrillation” as substitutes for

the concept of frosting is undesirable.

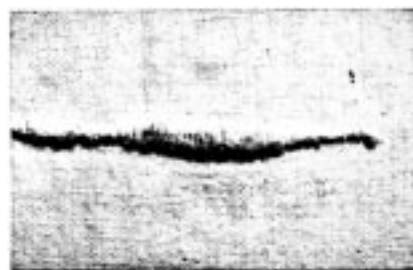
fuzz ball, *n*.—loose and frayed fibers that have formed into a ball and have then been woven or knitted into the fabric. (*Syn.* lint ball, snow ball) (Compare **pills**)

fuzzy, *adj*.—characterized by a hairy appearance due to protruding broken fibers or filaments. (*Syn.* hairy)



Fuzzy

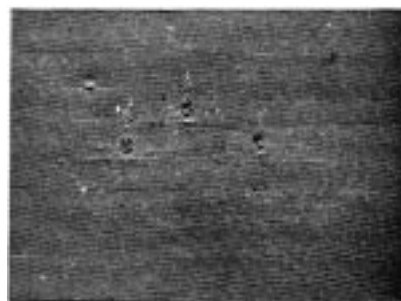
gout, *n*.—foreign matter trapped in a fabric by accident, usually lint or waste. (See also **slug**)



Gout

hairy—See **fuzzy**.

hang pick, *n*.—a pick, caught on a warp yarn knot for a short distance, producing a triangular-shaped hole in the fabric. (*Syn.* hang shot)



Hang Pick

hang shot—See **hang pick**.

hard end—See **tight twist end**.

hard size, *n*.—sections of cloth containing an excessive quantity of sizing. (*Syn.* starch lump)

harness skip—See **float**.

heavy end—See **coarse end**.

heavy filling—See **coarse pick**.

heavy pick—See **coarse pick**.

hitch-back—See **draw-back**.

hole, *n*—*in fabric*, an imperfection where one or more yarns are sufficiently damaged to create an aperture.

hooked bow, *n*—a fabric condition in which the filling or course yarns 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**)

jerk-in, *n*—*in woven fabric*, an extra filling thread dragged into the shed with the regular pick and extending only part of the way across the cloth. (*Syn.* lash-in, pull-in) (Compare **double pick**)

kink, *n*—*in fabric*, a short length of yarn that has spontaneously doubled back on itself to form a loop. (*Syn.* curl, kinky thread, looped yarn, snarl)



Kink (Filling Snarl)

kinky thread—See **kink**.

ladder—See **run**.

lash-in—See **jerk-in**.

leader mark—See **decating mark**.

let-off mark, *n*—*in woven fabrics*, a corrugated defect pattern distributed across the fabric width. (Compare **shier**)

DISCUSSION—Let-off marks are caused by badly adjusted let-off motions of a loom.

light end—See **fine end**.

light filling—See **thin filling**.

light pick—See **thin filling**.

lint ball—See **fuzz ball**.

long knot, *n*—*in raw silk*, knots which have loose ends from 3 to 25 mm in length.

long slug, *n*—*in raw silk*, a slug which exceeds 10 mm ($\frac{1}{2}$ in.) in length or which is very much larger in diameter than the yarn.

loom fly, *n*—waste fibers created during weaving that are woven into a fabric. (*Syn.* flyer)

looped yarn—See **kink**.

loopy edge—See **loopy selvage**.

loopy selvage, *n*—an improperly woven selvage of uneven width or a selvage containing irregular filling loops extending beyond the outside edges. (*Syn.* beaded selvage, corded selvage, loopy edge, rough selvage)

loose course, *n*—*in knitted fabrics*, a row of loops in the widthwise direction that is larger, looser, or longer than the stitches in the main body of the fabric.

loose edge—See **slack selvage**.

loose pick—See **slack pick**.

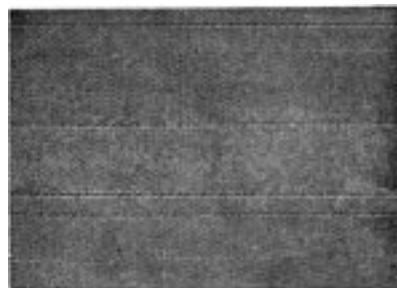
lump—See **slub, slug**.

mill wrinkle—See **crease**.

misclip—See **scalloped selvage**.

misdraw—See **wrong draw**.

mispick, *n*—*in woven fabrics*, a pick not properly interlaced which causes a break in the weave pattern. (*Syn.* wrong pick) (See also **double pick**)



Mispick

misprint, *n*—*in printed fabric*, colors or patterns, or both, either missed, or partially missed, or incorrectly positioned relative to each other.

misregister, *n*—*in printed fabric*, colors or patterns not correctly positioned. (Compare **misprint**.)

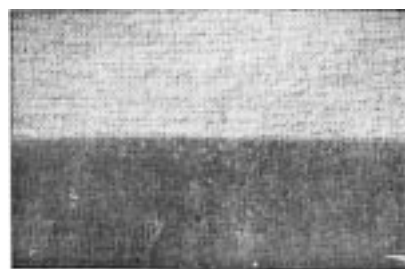
missing end—See **end out**.

missing pick—See **broken pick**.

miss-knit, *n*—*in knitted fabrics*, a deviation from the designated knitting pattern.

mixed end, *n*—*in woven fabrics*, a warp yarn differing from that normally being used in the fabric.

mixed filling, *n*—*in woven fabrics*, a filling yarn differing from that normally being used in the fabric. (See also **filling band**) (Compare **barré**)



Mixed Filling

mote trash—See **trash**.

mussiness, *n*—surface distortion in a fabric characterized by objectionable unevenness due to many minor deformations.

nep, *n*—a tightly tangled knot-like mass of unorganized fibers. (Compare **pills**.)

open place—See **crack mark**.

overshot—See **float**.

pick-out mark, *n*—a fillingwise band or bar characterized by a chafed or fuzzy appearance.

pick-out place—See **temple mark**.

piecing, *n*—a thick place in a spun yarn caused by poor splicing.

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**)

pin hole, *n*—*in fabrics*, a very small hole, approximately the

size of the cross section of a pin.

pin mark, *n*—a series of holes near the edge parallel with the lengthwise direction of a fabric caused by the holding device on a pin tenter frame. (See also *clip mark*.)

press-off, *n*—in *knitted fabrics*, a condition in which the yarn fails to knit and either the fabric falls off the needles or the design is distorted or incomplete.

pressure mark, *n*—See **bruise**.

pull-in—See **jerk-in**.

reed mark, *n*—in *woven fabrics*, a crack between groups of warp ends, either continuous or at intervals.

reedy warp—See **reed mark**.

ring, *n*—in *hosiery*, a narrow, visually different horizontal band.

ripped selvage—See **cut selvage**.

rolled selvage—See **curled selvage**.

rope mark, *n*—in *dyed or finished fabrics*, a long irregularly shifting longitudinal mechanically induced streak.

rough, *adj*—a descriptive term for a fabric surface which has the feel of sandpaper.



Rough

rough selvage—See **loopy selvage**.

run, *n*—in *knitted fabrics*, a series of dropped stitches. (See **dropped stitch**) (*Syn.* ladder)

sanforizing mark, *n*—a crimped, rippled, wavy, pebbled, or cockled place showing distortion of the texture. (*Syn.* blanket mark)

scalloped selvage, *n*—an abrupt, narrow indentation in the selvage. (*Syn.* misclip)

seam mark, *n*—in *finished cloth*, a pressure mark caused by the thickness of the seam being pressed against the cloth.

section mark, *n*—in *woven fabrics*, warp bands of different color, texture, or luster.

selvage mark, *n*—in *finished cloth*, a lengthwise crease mark along the selvage caused by an edge being folded or doubled.

set mark, *n*—a stop mark resulting from a prolonged loom shutdown.

shier, *n*—in *woven fabrics*, fine fillingwise cracks randomly distributed across the fabric width. (*Syn.* shire) (Compare **let-off mark** and **crack mark**)

shiner, *n*—a streak, usually short caused by a lustrous section of filament yarn.

shuttle mark, *n*—in *woven fabrics*, a fine fillingwise line caused by damage to a group of warp yarns by shuttle

abrasion. (*Syn.* box mark)



Shuttle Mark

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.

skin back—See **broken filament**.

skip—See **float**.

slack end, *n*—a warp yarn woven under insufficient tension. (*Syn.* slack thread, slack warp)

slack filling—See **slack pick**.

slack pick, *n*—a single filling yarn woven under insufficient tension. (*Syn.* loose pick, slack filling)

slack selvage, *n*—slack ends in the fabric edge. (*Syn.* baggy selvage, loose edge, stringy selvage, wavy selvage)

slack thread—See **slack end**.

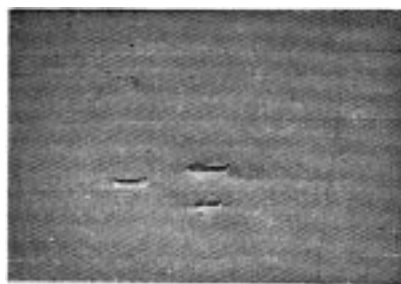
slack warp—See **slack end**.

slam-off, *n*—in *woven fabrics*, a distortion due to the entrapment of the filling carrier in the shed. (Compare **smash**)

slough-off, *n*—in *woven fabrics*, a defect caused by several coils of yarn slipping off the filling bobbin simultaneously and being woven into the fabric in a group.

slub, *n*—an abruptly thickened place in a yarn. (*Syn.* lump, piecing, slough-off, slug) (Compare **cockles**)

slug, *n*—in *glass*, unattenuated particles of glass of substantially larger diameter than the average filament diameter. (*Syn.* lump, piecing, slough-off, slub)



Slug

slug, *n*—in *raw silk*, a thickened place several times the diameter of the yarn three millimetres ($\frac{1}{8}$ in.) or over in length.

smash, *n*—in *woven fabrics*, a relatively large hole characterized by broken warp ends and floating picks. (*Syn.* break-out) (Compare **slam-off**)



Smash

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

snarl—See **kink**.

snow ball—See **fuzz ball**.

soiled end, *n*—self-descriptive.

specks, *n*—*in woolen fabrics*, small pieces of undyed vegetable matter which can be removed by carbonizing or can be covered by dyeing or inking. (Compare **trash**)

split ends—See **broken filament**.

split filaments—See **broken filament**.

split-stitch, *n*—*in knitted fabrics*, a stitch in which one part of the yarn is knit and the other part is dropped.

spot, *n*—a small discolored area on, or in, a fabric.

spread stitches—See **pin hole**.

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

starch lump—See **hard size**.

stop mark, *n*—a visible change in the density of the weave across the width of the fabric caused by the tension on the warp not being adjusted properly after the loom has been stopped. (See **set mark**)

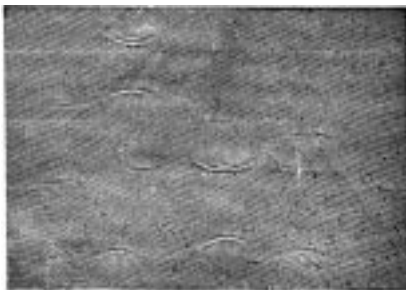
streak, *n*—an extended unintentional stripe of narrow width, often a single yarn.

stretched filling—See **tight pick**.

stringy selvage—See **slack selvage**.

tacking cut, *n*—small holes or cuts along the selvage.

tear drop, *n*—*in woven fabrics*, short elliptical deviations of one or more adjoining picks. (Syn. *teariness*)



Tear Drop

teariness—See **tear drop**.

temple mark, *n*—*in woven fabrics*, small holes or distortions adjacent to the selvage.

tenter mark, *n*—a visible deformation on the side edge or

body of a fabric due to pressure from clips or pins. (Syn. *clip mark*, *pin mark*).

thick filling—See **coarse pick**.

thick place, *n*—*in fabric*, an unintentional change in fabric appearance characterized by a small area of more closely spaced yarns, or by a congregation of thick yarns as compared to the adjacent construction.

thin end—See **fine end**.

thin filling, *n*—*in woven fabrics*, a filling yarn smaller in diameter than normal. (Syn. *fine filling*, *fine pick*, *light filling*, *light pick*, *thin pick*)

thin pick—See **thin filling**.

thin place, *n*—*in fabric*, an unintentional change in fabric appearance characterized by a small area of loosely spaced yarns or by a congregation of thin yarns as compared to the adjacent construction.

thin spot—See **crack mark**.

tight end, *n*—*in woven fabrics*, a yarn which was woven under excessive tension or has shrunk more than a normal amount.

tight filling—See **tight pick**.

tight pick, *n*—*in woven fabrics*, a filling yarn which was woven under excessive tension or has shrunk more than a normal amount, which may cause puckering at the junction with normal picks. (Compare **wavy cloth**)

tight selvage, *n*—*in woven fabrics*, selvage yarns shorter than warp yarn in the body of the fabric.

tight twist end, *n*—a single end with higher than normal twist. (Syn. *hard end*, *wiry end*)

trammage, *n*—*in woven crepes*, a puckered area in which a filling yarn has twist running in the same direction for several picks instead of alternating S and Z twist.

trash, *n*—*in cotton*, undeveloped seed, motes, small bits of seed coat, or particles of leaf appearing as specks. (Syn. *mote trash*)

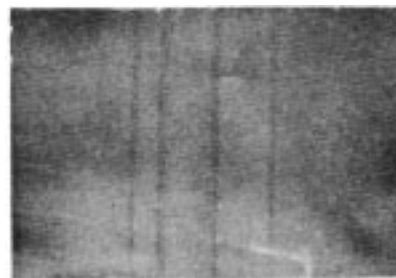
tucking defect, *n*—*in knitted fabrics*, one or more unwanted tuck loops.

turned-over edge—See **curled selvage**.

uneven dyeing, *n*—cloth which shows variations in shade due either to incorrect dyeing methods or faulty materials.

warp bands—See **section marks**.

warp streak, *n*—*in woven fabric*, a narrow band running lengthwise and characterized by apparent differences in color from adjoining ends. (Compare **barré**.)



Warp Streaks

washboard, *n*—*in hosiery*, a ridgy effect caused by uneven tension between feeds on the knitting machine.

washer wrinkles—See **crowsfeet**.

wavy cloth, *n*—a cloth that will not lie flat on a cutting table.

(*Syn.* baggy cloth) (Compare **tight pick**)

wavy face, *n*—a surface condition characterized by a considerable variation in yarn diameter

wavy selvage—See **slack selvage**.

wiry end—See **tight twist end**.

wrinkle, *n*—an objectionable crease, generally short and irregular in shape.

wrong draft—See **wrong draw**.

wrong draw, *n*—in woven fabric, one or more incorrectly drawn warp ends in the harness or reed. (*Syn.* wrong draft, misdraw)

wrong pick—See **mispick**.

3. Keywords

3.1 fabric defect; terminology

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).