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Standard Terminology Relating to Inflatable Restraints¹

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1. Scope

1.1 This standard covers terminology which is used in the evaluation of inflatable restraint fabrics, cushions, and modules.

2. Referenced Documents

2.1 *ASTM Standards:*²

D 123 Terminology Relating to Textiles

D 3990 Terminology Relating to Fabric Defects

3. Terminology

3.1 *Definitions:*

abrasion, *n*—*for inflatable restraint fabrics*, a fuzzy cluster of broken filaments damaged by scraping.

accelerated aging, *n*—*in textile processing and testing*, the use of controlled environmental conditions to promote rapid physical or chemical change in a textile material.

DISCUSSION—For inflatable restraints, practices for conducting accelerated aging are designed to determine the aggravated effects on a fabric from exposures to heat, humidity, or ozone, or a combination thereof. These environmental conditions may also be cycled in combination. The four accelerated aging procedures of concern to the design and manufacture of inflatable restraints are referred to as cycle aging, heat aging, humidity aging, and ozone aging.

air splice, *n*—*for inflatable restraint fabrics*, the thicker portion of a yarn resulting from the entanglement of the filaments at the ends of two multifilament yarns to create a continuous yarn.

average dynamic air permeability (ADAP), *n*—*for inflatable restraints*, the average of all of DAP measurements within a specified range of pressure differentials.

bleedthrough, *n*—*for coated inflatable restraint fabrics*, the presence of coating material on the uncoated side, between two yarns, without covering either yarn.

blip, *n*—*for inflatable restraint fabrics*, any short, irregularly shaped or textured portion of an individual multifilament yarn that has been woven into the fabric, including slough offs, stripbacks, fuzz balls, snarls, and slubs.

breakout pressure, *n*—*for inflatable restraints*, the pressure level during deployment which ruptures the module cover.

broken filament, *n*—*for inflatable restraint fabrics*, an individual filament, separated from a multifilament yarn bundle, that lies on the surface of the fabric.

bruise, *n*—*for inflatable restraint fabrics*, a shift in the squareness of the weave pattern in an area that has been subjected to impact or pressure.

coated fabric, *n*—*a flexible material composed of a textile fabric and an adherent polymeric material applied to one or both sides.*

coating slub, *n*—*for coated inflatable restraint fabrics*, an irregularly shaped lump of coating material on the surface of the coated layer resembling a yarn slub.

coating streak, *n*—*for coated inflatable restraint fabrics*, minor variation in the color or opacity of the coated layer.

coating transfer, *n*—*for coated inflatable restraint fabrics*, the presence of coating material on the uncoated side, covering one or more yarns.

contamination, *n*—*for coated inflatable restraint fabrics*, the presence of non-coating material in the coated layer.

cushion, *n*—*for inflatable restraints*, the inflatable fabric envelope portion of a module.

cushion overpressurization, *n*—*for inflatable restraints*, the process of inflating a cushion at internal pressures greater than design deployment pressures; bag burst.

¹ This terminology is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.20 on Inflatable Restraints. Current edition approved Jan. 1, 2007-2008. Published January 2007/July 2008. Originally approved in 2005. Last previous edition approved in 2005/2007 as D 6799 – 057.

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.

defect, *n*—specific for inflatable restraints, an imperfection in a cut piece of fabric that judgment and experience indicate is likely to result in either hazardous or improper deployment of the inflatable restraint module in which the imperfection is incorporated.

DISCUSSION—An example of a defect is a hole in the piece of fabric through which inflation gases can vent improperly.

deployment, *n*—for inflatable restraints, the sequence of events related to the activation of a module.

dynamic air permeability (DAP), *n*—for inflatable restraints, the dynamic air permeability measured at a single specified pressure differential.

edgcombng, *n*— for inflatable restraints, the separation of yarns from their normal orthogonal configuration in a woven fabric due to seam stress or similar action near the edge of a cut part

environmental conditions, *n*—in textile testing, the atmosphere in which specified moisture levels, temperature ranges, and concentrations of gases are controlled.

exponent of dynamic air permeability (EXP), *n*—for inflatable restraints, a descriptive factor used in a mathematical model integral to the apparatus software which relates the change in dynamic air permeability as the pressure differential changes.

extractable matter, *n*— for inflatable restraint fabrics, non fibrous material in or on a textile, not including water, which is removable by a specified solvent or solvents, as directed in a specified procedure.

filling bar, *n*— for inflatable restraint fabrics, a temporary change in the filling-wise density of the weave pattern. (Syn: *stop/start mark*.)

finished, *adj*—for inflatable restraint fabrics, a descriptive term for fabric that has been treated after weaving and that is suitable for coating or piece cutting.

flat fabric, *n*— for inflatable restraints, fabric composed of a single woven layer. (See also one-piece woven).

fold over, *n*—for inflatable restraint fabrics, a hard ridge where a layer is overlapped upon itself where if applicable coating integrity is compromised.

foreign matter, *n*— for inflatable restraint fabrics, an extraneous interwoven fragment whose size, color, or texture indicates that it is not of the same material as the fibers in the base fabric.

grading, *n*—the procedure used to identify and quantify the number of imperfections in a roll of fabric detected during visual inspection.

hard contamination, *n*— for coated inflatable restraint fabrics, the presence of non-coating material within or on the coating layer, such material visibly appearing to be of large size, coarse or sharp in texture, and of a thickness that protrudes significantly above the surface of the coating layer.

DISCUSSION—Examples are metal filings, glass, plastic, or wood splinters.

DISCUSSION—Side lighting of fabric during fabric inspection may be used to determine how significantly contamination protrudes from the surface of the fabric.

heavy coating streak, *n*— for coated inflatable restraint fabrics, a narrow area of fabric, generally in the shape of a line oriented in the warp direction of the fabric, in which the coating layer is visibly at a higher rate of coverage than the surrounding material.

hole, *n*—for inflatable restraint fabrics, an opening not characteristic of the normal weave pattern where one or more yarns is cut, torn, or shifted.

imperfection, *n*—a departure of a quality characteristic from its intended level or state.

inflatable restraint, *n*—a vehicular safety device designed to cushion an occupant or equipment during collision; an airbag.

inflator, *n*—for inflatable restraints, a device for generating and directing expansion gases into a cushion.

ink stain, *n*—for inflatable restraint fabrics, presence of marking ink in an area of fabric not provided for identification by an applicable specification.

kinky filling, *n*— for inflatable restraint fabrics, an area of the fabric in which a short section of the weft yarn is folded back upon itself, causing the appearance of a thick or heavy section of yarn. This is contrasted to a loop in that the excess yarn does not protrude from the surface of the fabric.

light coating, *n*— for coated inflatable restraint fabrics, a localized amorphous area of fabric in which the coating layer is visibly at a lower rate of coverage than the surrounding material.

light coating streak, *n*— for coated inflatable restraint fabrics, a narrow area of light coating, generally in the shape of a line oriented in the warp direction of the fabric.

long float, *n*—for inflatable restraints fabrics, a small change in the weave pattern where a warp or filling yarn extends over six or more filling or warp yarns with which it should be interlaced.

loop, *n*—for inflatable restraint fabrics, a continuous yarn that curls back on itself and protrudes from the surface of the fabric. (Syn. *kink*, *snag*.)

major imperfection, *n*— in fabric grading, a deviation in a roll of fabric that judgment and experience indicate is likely to have an adverse affect on subsequent use or processing of the fabric.

DISCUSSION—Examples of major imperfections are a yarn loop that could become snagged upon deployment of the cushion and a fabric stain that could affect the physical properties of the material.