association for contract textiles

Physical Properties
ACT Voluntary Performance Guidelines
Test Method Descriptions for Knit Fabrics – Outdoor

ACT Voluntary Performance Guidelines for Flammability and four aspects of fabric durability—Wet & Dry Crocking, Colorfastness to Light, Physical Properties, and Abrasion—make fabric specification easier.

To give architects, designers, and end-users a vast amount of performance information in a succinct visual way, ACT developed icons to indicate that a fabric meets or exceeds guideline requirements. Look for these Registered Certification Marks on ACT Member Company sampling to assure that the fabrics you specify perform up to contract standards and pass all applicable testing.

ACT Guidelines are based on a fabric's construction (woven, coated, knit), its intended application (upholstery, direct glue wallcovering/adhered panels, wrapped panels/upholstered walls, drapery), and where it will be used (indoor, outdoor). The application and usage parameters are set by the fabric supplier. All three parameters determine which set of ACT Voluntary Performance Guidelines applies.

This specific set of guidelines applies to woven fabrics for outdoor use as upholstery. "Woven Fabrics" are formed by interlacing two or more perpendicular groups of yarns.

Test methods included in the Guidelines measure fabric performance under standard laboratory conditions and are intended to represent the most current test version. Note: Individual ACT Member product information may represent a different version of a test method depending on the date the product was introduced to market.

Important: These tests represent minimum requirements, which are subject to change without notice and may not reflect requirements or laws in all locations. See information and disclaimer on page 3.

Physical Properties — KNIT FABRICS, OUTDOOR USE

Key factors in assessing overall durability of a fabric vary depending on the fabric construction.

ACT GUIDELINES

Upholstery

Pilling
ASTM D3511 (Brush Pill), Class 3 minimum Or ASTM D4970, (Martindale Tester), Class 3 minimum
Pilling is the formation of fuzzy balls of fiber on the surface of a fabric that remain attached to the fabric.

Aesthetic issues of pilling and fuzzing that sometimes occur on textile products do not impact the durability or functionality of the material. Laboratory testing provides some insight into the propensity for a textile to pill or fuzz; however, lab tests alone cannot predict field performance since they do not consider variables (e.g., care and maintenance, misuse, environment) encountered in the actual end-use application.

Breaking Strength
ASTM D5034 (Grab Test), 50 lbs. minimum both directions
Breaking Strength is the measurement of stress exerted to pull a fabric apart under tension.

Tear Strength
ASTM D2261 6.0 lbs. minimum both directions
Tear Strength is the measurement of stress exerted to rip the fabric under tension.

Snag Testing
ASTM D3939 (Mace Snag), Class 3 minimum
Snagging is the formation of yarn pulls on the surface of a fabric.

Stretch & Set
ACT has chosen not to establish a minimum requirement for this performance characteristic since the ability of a fabric to return to its initial state is strongly impacted by factors that are attributed to furniture construction and fabrication such as the density of foam. The SAE J855 test can be used to evaluate the stretch and set of a knit fabric; however, ACT suggests that you consult with both your fabric supplier and furniture manufacturer to determine if there are any potential issues.

TEST METHODS

Pilling

ASTM D3511*

The ASTM D3511 is a test method of the American Society of Testing and Materials (ASTM). This test utilizes nylon bristles to rub the surface of the test fabric for a specific amount of time. The number of pill balls are counted and given a 1 – 5 rating. Class 5 = no pilling, Class 1 = severe pilling.

* For complete technical details about ASTM D3511: http://www.astm.org

ASTM D4970*

The ASTM D4970 is a test method of the American Society of Testing and Materials (ASTM). This test utilizes the Martindale Tester. The fabric being tested is rubbed face to face for a specified number of rubs/cycles. The pill balls are evaluated using a photographic visual standard for comparison and given a 1 – 5 rating.

*Note: the ACT pilling guideline specifies 1,000 cycles/rubs.

* For complete technical details about ASTM D4970: http://www.astm.org

Breaking Strength

ASTM D5034 (Grab Test) *

The ASTM D5034 (Grab Test) is a test method of the American Society of Testing and Materials (ASTM). To evaluate, the fabric being tested is put into a machine that grips the fabric with two clamps. One clamp is stationary and the other moves away applying tension until the fabric breaks or ruptures. This test is performed in both directions. The number of pounds required to cause a fabric to break or rupture determines the rating.

* For complete technical details about ASTM D5034 (Grab Test): http://www.astm.org

Tear Strength

ASTM D2261*

The ASTM D2261 is a test of the American Society of Testing and Materials (ASTM). This is the measurement of the lbs. of force required to tear knit fabrics. A rectangular specimen, cut in the center of a short edge to form a two-tongued (trouser shaped) specimen, in which one tongue of the specimen is gripped in the upper jaw and the other tongue is gripped in the lower jaw of a tensile testing machine. The separation of the jaws is continuously increased to apply force to propagate a tear. The number of pounds required to cause a tear determines the rating.

* For complete technical details about ASTM D2261: http://www.astm.org

Snag Testing

ASTM D3939*

The ASTM D3939 is a test of the American Society of Testing and Materials (ASTM) To determine the tendency of fabrics to snag (pull yarn loops from fabric) in normal wear. The fabric being tested is affixed to a rotating cylinder. The mace ball attached to a suspended chain is placed in contact with the face of the fabric. As the cylinder rotates the spikes on the ball will snag yarns creating pulls. After 600 revolutions of the cylinder the snags are evaluated using a photographic visual standard for comparison and given a 1 – 5 rating.

* For complete technical details about ASTM D3939: http://www.astm.org

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Whenever appropriate, specifiers and end users should seek the advice of professionals or other knowledgeable persons to ascertain whether a product will in fact comply with applicable Laws.

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It is the responsibility of the contract textile vendor and/or the manufacturer (not ACT) to determine in all instances whether or not a textile meets each of the Standards to which a particular Mark is referenced.

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