



association
for contract
textiles

Physical Properties

ACT Voluntary Performance Guidelines

Test Method Descriptions for Woven Fabrics

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.

All ACT Voluntary Performance Guidelines cover both woven and coated fabrics for indoor use. “Woven Fabrics” consist of two sets of yarns, warp and filling, formed by weaving, which is the process of interlacing these sets 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 4.

Physical Properties



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.

Breaking Strength

ASTM D5034 (Grab Test), 50 lbs. minimum in warp and weft

Breaking strength is the measurement of stress exerted to pull a fabric apart under tension.

Seam Slippage

ASTM D4034, 25 lbs. minimum in warp and weft

Seam slippage is the movement of yarns in a fabric that occurs when it is pulled apart at a seam.

Wrapped Panels and Upholstered Walls

Breaking Strength

ASTM D5034 (Grab Test), 35 lbs. minimum in warp and weft

Draperies

Seam Slippage

ASTM D434 for fabrics over 6 oz./sq. yard, 25 lbs. minimum in warp and weft.

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 the warp and weft 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>

Seam Slippage Upholstery

ASTM D4034*

The ASTM D4034 is a test method of the American Society of Testing and Materials (ASTM). To measure a fabric's ability to resist seam slippage, a seam is constructed to the following specifications:

Seam Allowance:	0.5 inches
Seam Type:	301 Lockstitch
Thread Type:	100% Nylon Bonded Monochord
Needle Thread Size:	8
Bobbin Thread Size:	5
Needle:	Size 22 Ball Point
Stitches per Inch:	7 ± 0.5

The sewn fabric is then clamped at opposing side of the seam. One clamp is moved away from the other applying tension at the sewn seam. This test is performed in both the warp and filling directions. The tension is increased until the seam separates to a specific distance. The number of pounds required to cause separation due to yarn slippage determines the rating.

* For complete technical details about ASTM D4034: <http://www.astm.org>

Seam Slippage Drapery

ASTM D434*

The ASTM D434 is a test method of the American Society of Testing and Materials (ASTM). To measure a fabric's ability to resist seam slippage, a seam is constructed to the following specifications:

Seam Allowance:	0.5 inches
Seam Type:	301 Lockstitch
Thread Type:	No. 24 – 4 “Z” Twist White Cotton
Needle:	Chrome-Plated 0.063-inch diameter
Stitches per Inch:	7 to 8

The sewn fabric is then clamped at opposing side of the seam. One clamp is moved away from the other applying tension at the sewn seam. This test is performed in both the warp and filling directions. The tension is increased until the seam separates to a specific distance. The number of pounds required to cause separation due to yarn slippage determines the rating.

* For complete technical details about ASTM D434: <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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