



association  
for contract  
textiles

## Physical Properties

### ACT Voluntary Performance Guidelines

#### Test Method Descriptions for Coated Fabrics

ACT Voluntary Performance Guidelines for Flammability and four aspects of coated fabric durability—Wet & Dry Crocking, Colorfastness to Light, Physical Properties, and Abrasion—make coated 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. “Coated Fabrics” typically consist of one or more layers of a film-forming polymer such as vinyl, silicone or polyurethane supported by a fabric or similar substrate.

Test methods included in the Guidelines measure coated 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



Key factors in assessing overall durability of a coated fabric vary depending on the coated fabrics composition and construction.

### ACT GUIDELINES

#### Upholstery

Adhesion of Coating

ASTM D751 Sections 45-48, 3 lbf/in minimum.

*Peel adhesion* is the measurement of the force required to separate the coatings from the substrate.

Tear Strength

ASTM D2261 (Tongue Tear) – Knits & Woven Substrates, 4 x 4 lbs.

ASTM D5733 (Trap Tear) – Nonwoven Substrates & Nonwoven Composites, 15 x 15 lbs.

*Tear strength* is the measurement of stress exerted to rip the fabric under tension.

Hydrolysis Resistance – Applicable to Polyurethanes Only

ISO 1419 (Tropical Test Method C), 5 weeks\* Visual Evaluation for no cracking, peeling or delamination

*Hydrolysis resistance* is the evaluation of a polyurethane coated fabric’s ability to withstand exposure to extended periods of heat and humidity.

*\*Note: There is no direct correlation of testing weeks to years of service in the field.*

Stretch & Set

*ACT has chosen not to establish a minimum requirement for this performance characteristic since the ability of a coated 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 coated fabric; however, ACT suggests that you consult with both your fabric supplier and furniture manufacturer to determine if there are any potential issues.*

#### Wrapped Panels and Upholstered Walls

Breaking Strength ASTM D5034 (Grab Test), 35 lbs. minimum in length and width

## **TEST METHODS**

### **ASTM D751**

The ASTM D751 contains standard test methods for Coated Fabrics by the American Society of Testing and Materials (ASTM). The adhesion of coating (to fabrics) test is sections 45 to 48. The coating is separated from the fabric at one end of each specimen. The coating and the fabric are clamped separately and pulled in an attempt to further separate them. The number of pounds of force required to separate the coating from the fabric is measured and reported in pounds of force per linear inch.

\* For complete technical details about ASTM D751: <http://www.astm.org>

### **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 coated fabrics with substrates that are knit or woven. 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>

### **ASTM D5733\***

The ASTM D5733 is a test of the American Society of Testing Materials (ASTM). This is the measurement of the lbs. of force required to tear coated fabrics with nonwoven substrates and composites. A specimen cut in the shape of an isosceles trapezoid cut at the smallest base of the trapezoid. The nonparallel sides of the trapezoid are clamped in parallel jaws 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 D5733: <http://www.astm.org>

### **ISO 1419**

(Hydrolysis resistance) The ISO 1419 is a test of the International Organization for Standardization (Tropical Test Method C). Pre-cut samples are placed in an oven heated to 70 C (158 F) and at least 95 % relative humidity. The test pieces are placed in the oven so that they are free from strain, exposed to the free passage of air on both sides and not exposed to light. After 168 h (7 days) the test pieces are removed from the oven and visually evaluated for cracking, peeling or delamination. The number of weeks the pieces pass evaluation determines the rating.

### **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 length and width 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>



## Physical Properties ACT Voluntary Performance Guidelines Test Method Descriptions for Coated Fabrics

### IMPORTANT INFORMATION AND DISCLAIMERS REGARDING ACT'S VOLUNTARY PERFORMANCE GUIDELINES

As noted above, ACT's Voluntary Performance Guidelines ("Guidelines") and associated symbols ("Marks") are for information purposes only and are made available to help assist specifiers and end-users in evaluating certain characteristics of contract textiles.


Neither the Guidelines, nor the Marks constitute any promise, representation or warranty that a product or sample that bears or to which a Mark is referenced will in fact comply with applicable federal, state, or municipal laws, codes, rules and regulations concerning the intended use of such product ("Laws"), nor any assurance, representation or guarantee regarding or relating in any manner to the safety of any product or sample that bears or, to which a Mark is referenced.

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.

Understand that the testing and standards ("Standards") referenced in the Guidelines are developed and promulgated by third parties not associated with ACT, and that these Standards often change or are supplemented by such third parties. Accordingly, the fact that a particular Standard is referenced in the Guidelines (and/or associated with any Mark) does not mean, nor is it intended to be a representation that Standard is the most current one.

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.

THE ASSOCIATION FOR CONTRACT TEXTILES EXPRESSLY DISCLAIMS LIABILITY TO ANY AND ALL PERSONS AND ENTITIES FOR PERSONAL INJURY, PROPERTY DAMAGE, AND ANY OTHER DAMAGE OF ANY KIND OR NATURE, (WHETHER OR NOT SUCH DAMAGES ARE DIRECT, INDIRECT, CONSEQUENTIAL OR COMPENSATORY) RESULTING FROM, OR IN ANY WAY RELATING TO THE GUIDELINES AND MARKS.

The marks , are Registered Certification Marks at the US Patent and Trademark Office and are owned by the Association for Contract Textiles, Inc.