

Recommended Minimum Performance Standards for VINYL-COATED AND OTHER CHEMICAL COATED UPHOLSTERY FABRICS - INDOOR

1. Scope

1.1 This document sets forth recommended performance standards for vinyl and other chemical coated upholstery fabrics produced with woven, non-woven, or knit substrates which are used as upholstery materials for indoor furniture.

1.2 This specification is not applicable to vinyl or chemical coated fabrics used in outdoor applications.

1.3 This standard covers but is not limited to other chemical coatings widely used for upholstery such as urethane and acrylic.

2. Applicable Documents*

For applicable documents used in this specification, refer to CFFA Standard Test Methods Pamphlet, most recent Edition.

3. Definitions

Abrasion - Measurement of the ability of the chemical coating to resist surface wear when rubbed against another (abradent) surface.

Accelerated Light Aging - A determination of the resistance of chemical coated fabrics to exposure to laboratory simulated sunlight.

Adhesion - A measure of the force required to separate a chemical coating from the base substrate.

Blocking - A determination of the development of surface tack at elevated temperatures.

Cold Crack - A measure of the ability of a chemical coated fabric to withstand cracking when folded at low temperature.

Crocking - A measure of resistance to transfer of color from a chemical coating to another surface (usually a fabric) by rubbing action.

Flame and Smoke Resistance - To determine flammability and smoke generation.

Flex - A determination of the change in surface appearance of a chemical coated fabric when subjected to multiple flex cycles.

Seam Strength - Simulates the resistance of seam tearing.

Tear Strength - A measurement of the force required to continue or propagate a tear in a coated fabric.

Tensile Strength - A measurement of the force required to break a coated fabric.

Volatility - A measurement of weight loss of a chemical coated fabric when subjected to an elevated temperature.

TABLE 1

PROPERTY	TEST METHOD	KNITS	NON-WOVENS	WOVENS
Abrasion: Contract/ High Traffic ----- Contract/ Commercial ----- General Use	CFFA 1a #10 Duck	50,000 cycles	50,000 cycles	50,000 cycles
		-----	-----	-----
		30,000 cycles	30,000 cycles	30,000 cycles
		-----	-----	-----
		15,000 cycles	15,000 cycles	15,000 cycles
Accelerated Light Aging	CFFA 2 ¹	Slight Change (4)	Slight Change (4)	Slight Change (4)
Adhesion	CFFA 3	3.0 lbs.	3.0 lbs.	3.0 lbs.
Blocking	CFFA 4	No Blocking Slight Adhesion (2)	No Blocking Slight Adhesion (2)	No Blocking Slight Adhesion (2)
Cold Crack	CFFA 6a ²	No Cracking	No Cracking	No Cracking
Crocking: Dry & Wet	CFFA 7	Excellent (4)	Excellent (4)	Excellent (4)
Flame and Smoke Resistance	CFFA 9	Pass	Pass	Pass
Flex	CFFA 10	25,000 Cycles No Appreciable Crazing	25,000 Cycles No Appreciable Crazing	25,000 Cycles No Appreciable Crazing
Seam Strength	CFFA 14	30 x 25 lbs.	35 x 35 lbs.	25 x 25 lbs.
Tear Strength: Tongue Trap	CFFA 16b CFFA 16c	4 x 4 lbs.	NA	4 x 4 lbs.
		NA	15 x 15 lbs.	NA
Tensile	CFFA 17	50 X 50 lbs.	50 X 50 lbs.	40 x 40 lbs.
Volatility	CFFA 18 ³	8%	8%	8%

¹200 hours using a Weatherometer or Fadeometer, or 150 hours using a QUV - dry cycle

²Using a 5 lb. roller, 20° F (-6.6°C).

³Activated carbon technique, but at 220°F (104°C).

4. Performance Requirements

4.1 Vinyl and other chemical coated upholstery fabrics are manufactured from natural and/or synthetic fibers chemically coated on one side to provide a durable, protective surface. Depending upon application, the coated fabrics will

be colored, decorated and/or textured to provide an aesthetically pleasing appearance and feel.

4.2 Three coated fabric categories are included: knits, wovens and non-wovens. See Table 1 for minimum test values.

4.3 Properties described in [TABLE 1](#) for coated fabrics collectively make up the minimum performance standards. Depending upon specific tailoring and performance requirements, these properties should be used to select the construction of coated fabric most suited for each end use. Properties are measured using CFFA Standard Test Methods. All test methods are outlined in the CFFA Standard Test Methods pamphlet which describes their purpose and relates the properties tested to various aspects of performance.

4.4 The test results for coated fabrics, when tested in accordance with the CFFA Standard Test Methods, must attain the minimum values of all properties listed in [TABLE 1](#) for a given construction in order to conform to this standard.

5. Test Procedures

- 5.1 Abrasion - See CFFA Standard Test Method 1a. Wyzenbeek Method using #10 Duck as abradent.
- 5.2 Accelerated Light Aging - See CFFA Standard Test Method 2. 200 hours using a Xenon Arc Weatherometer or Fadeometer, or 150 hours using a QUV, dry cycle. See CFFA Standard Test Method 2.
- 5.3 Adhesion of Coating to Fabric - See CFFA Standard Test Method 3. Use a Scott or Instron type Universal Tester.
- 5.4 Blocking - See CFFA Standard Test Method 4. Samples heated face to face under a standard weight.
- 5.5 Cold Crack Resistance - See CFFA Standard Test Method 6a. Use a 5 lb. Roller.
- 5.6 Crocking Resistance - Dry & Wet. See CFFA Standard Test Method 7. Use CFFA evaluation scale.
- 5.7 Flame and Smoke Resistance - See CFFA Standard Test Method 9.

5.8 Flex Test - See CFFA Standard Test Method 10. Use a Flexometer (Newark Flex) Test Unit.

5.9 Seam Strength - See CFFA Standard Test Method 14. Use a Scott or Instron type Universal Tester.

5.10 Tearing Strength - See CFFA Standard Test Method 16b and 16c. Use a Scott or Instron type Universal Tester.

5.11 Tensile Strength - See CFFA Standard Test Method 17. Use a Scott or Instron type Universal Tester.

5.12 Volatility - based on Activated Carbon Technique, except at 220°F. (104°C.). See CFFA Standard Test Method 18.

6. Notes

6.1 Stretch and Set - Stretch and set properties are often required by the user. However, this standard covers such a wide range of products that vary in these properties that it is not feasible to provide meaningful values. Stretch and set properties should be as agreed upon by user and supplier. See CFFA Standard Test Method 15.

6.2 Mildew and/or Bacterial Resistance - In some upholstery applications (hospital, healthcare, etc.), biological resistance requirements may be incorporated into the specifications to meet the needs of the final customer. CFFA Standard Test Method 120 - Mildew Resistance and CFFA Standard Test Method 300 - Bacterial Resistance can be added to the specific product specifications to facilitate the customer's needs.

6.3 Accelerated Exposure to Disinfectants - In some upholstery applications (hospital, healthcare, etc.) disinfectants are applied on a regular basis and may harm the surface by color or gloss change, cracking, peeling, or hardening. CFFA Standard Test Method 100 - Accelerated Exposure to Disinfectants can be added to the specific product specifications to determine resistance. However, it should be noted that failing to rinse properly or use disinfectants at proper dilution ratios can shorten the useful life of the product, and is the most common basis for product failure.

*Test Methods may be accessed on line at: <https://www.cffaperformanceproducts.org/publications.asp>

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