

TABLE 1
CHEMICAL FABRICS & FILM ASSOCIATION, INC.
 Minimum Performance Standards for Vinyl-Coated and Other Chemical
 Coated Upholstery Fabrics - Marine

TEST PROCEDURE	TEST METHOD	KNITS	NON-WOVENS
ABRASION	CFFA 1a ¹	NO APPRECIABLE WEAR	NO APPRECIABLE WEAR
ACCELERATED LIGHT AGING	CFFA 2 ²	NO APPRECIABLE COLOR CHANGE	NO APPRECIABLE COLOR CHANGE
ADHESION	CFFA 3	3.0 lbs.	3.0 lbs.
COLD CRACK	CFFA 6a ³	NO CRACKING	NO CRACKING
CROCKING	CFFA 7	SLIGHT TRANSFER	SLIGHT TRANSFER
FLEX	CFFA 10 ⁴	NO APPRECIABLE CRAZING	NO APPRECIABLE CRAZING
MILDEW RESISTANCE	CFFA 120 ⁵	NO GROWTH	NO GROWTH
SCRUBBABILITY	CFFA 130	200	300
SEAM STRENGTH	CFFA 14	30 x 25 lbs.	35 x 35 lbs.
TEAR TONGUE	CFFA 16b	4 x 4 lbs.	NA
TRAP	CFFA 16c	NA	15 x 15 lbs.
TENSILE	CFFA 17	50 x 50 lbs.	50 x 50 lbs.
VOLATILITY	CFFA 18 ⁶	8%	8%

- ¹ Wyzenbeek Test Method with Wire Screen as the Abradent, minimum 3,000 cycles.
- ² 1,000 hours using a Carbon Arc Weatherometer, 300 hours using a Xenon Arc Weatherometer, or 650 hours using a QUV - wet cycle.
- ³ Using a 5 lb. roller, 10° F (-23°C)
- ⁴ 25,000 cycles
- ⁵ Coated side only, see Note 6.3.
- ⁶ Activated carbon technique at 220°F (104°C).

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**Recommended Performance Standards for
 VINYL-COATED AND OTHER CHEMICAL COATED
 UPHOLSTERY FABRICS - MARINE**

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1. Scope

- 1.1 This document sets forth recommended performance standards for vinyl and other chemical coated upholstery fabrics produced with non-woven or knit substrates which are used as marine upholstery materials.
- 1.2 This specification is not applicable to vinyl or chemical coated fabrics used in indoor 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 the Chemical Fabrics & Film Association, Inc. "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.

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 (Surface Resistance) - Using a stainless steel wire screen described in ASTM D35-97 as the abrader. After 3,000 cycles, no appreciable wear. See CFFA Standard Test Method 1. Accelerated Light Aging - 1,000 hours using a Carbon Arc Weatherometer, 300 hours using a Xenon Arc Weatherometer, or 650 hours using a QUV, wet cycle. See CFFA Standard Test Method 2 (1997 Addendum).

5.3 Adhesion of Coating to Fabric - See CFFA Standard Test Method 3.

5.4 Cold Crack Resistance - Using a 5 lb. roller. No cracking at the specified temperature. See CFFA Standard Test Method 6a.

5.5 Crocking Resistance - See CFFA Standard Test Method 7.

5.6 Flex Test - See CFFA Standard Test Method 10.

5.7 Mildew Resistance - Coated side only - No growth. See CFFA Standard Test Method 120.

5.8 Scrubbability - See CFFA Standard Test Method 130 (1995 Addendum).

5.9 Seam Strength - See CFFA Standard Test Method 14.

5.10 Tearing Strength - See CFFA Standard Test Methods 16b and 16c.

5.11 Tensile Strength - See CFFA Standard Test Method 17.

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

6. Notes

6.1 Flammability - If there is a flammability requirement, such requirement shall be as agreed upon by user and supplier.

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

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

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

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

Low Temperature Resistance - The measurement of the ability of a chemical coated fabric to withstand cracking at low temperatures.

Mildew Resistance - A determination of the ability of a chemical coated fabric to resist fungal growth.

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.

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 while maintaining minimum performance standards under non-abusive consumer usage.

4.2 Two coated fabric categories are included: knits 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

6.2 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.

6.3 In most marine applications, vinyl coated fabrics comprise the visible, decorative surface of an engineering fabrication such as a seat cushion, side panel, or motor cover. It is highly recommended that all elements of that fabrication, e.g., sewing thread, reinforcing tapes and panels, urethane foam padding and wood or other substrates be adequately treated for mildew resistance. Water leakage through sewn seams and/or water wicking in plywood substrates and foam padding can result in growth of mixed fungal spores and pink staining organisms within inadequately treated constructions and will eventually result in vinyl coated fabric failure in service.