

FOCUS on Performance and Standards

05

April 2018

(REVISED FROM JULY 2011 VERSION)

PERFORMANCE

Not all chemical-coated fabrics are created equal. That's why the development of standards is important. Standards are used by the industry to promote product performance, facilitate quality control and assure customer satisfaction.

These standards are revised and updated as product requirements change, and newer polymers and composites find increasing acceptance.

Chemical Fabrics and Film Association (CFFA) standards address product performance via testing that replicates anticipated conditions of normal usage. The tests measure both the strength of the coated fabric and its ability to withstand commercial use. Beyond the standard, it is important to read and understand the data sheets for individual products to be sure they are suitable for intended use.

There is no one standard that encompasses all chemical fabrics and films. Due to the large quantity of films and fabrics and the diverse end use for each, individual performance standards have been developed. There are currently four recommended minimum performance standards published by the CFFA:

CFFA-U-201F Recommended Minimum Performance Standards for Vinyl-Coated and Other Chemical-Coated Upholstery Fabrics – Indoor

CFFA-MARINE/VINYL-201D Recommended Minimum Performance Standards for Vinyl-Coated and Other Chemical-Coated Upholstery Fabrics – Marine

CFFA-MARINE/PU-101C Recommended Minimum Performance Standards for Polyurethane Upholstery Fabrics – Marine

CFFA-P-101D Recommended Minimum Performance Standards for Vinyl Swimming Pool Liners – In-Ground

There are currently approximately 40 test methods cited by the CFFA in its publication *Standard Test Methods, 9th Edition*, that address various areas related to the fabric/film's service life. Some of the properties measured within these tests assess the fabric's strength before it is placed into service.

STANDARDS

CFFA-U-201F RECOMMENDED MINIMUM PERFORMANCE STANDARDS FOR VINYL-COATED AND OTHER CHEMICAL-COATED UPHOLSTERY FABRICS – INDOOR sets the recommended minimum performance standards for vinyl-coated and other chemical-coated upholstery fabrics produced with woven, non-woven or knit substrates used as contract upholstery materials. The standard, developed by a technical committee of chemists and engineers, assesses basic attributes related to performance. Test methods evaluate the coated upholstery fabric's strength and ability to withstand elements associated with commercial use.

CFFA-MARINE/VINYL-201D RECOMMENDED MINIMUM PERFORMANCE STANDARDS FOR VINYL-COATED AND OTHER CHEMICAL-COATED UPHOLSTERY FABRICS – MARINE sets the recommended performance



The properties measured include:

- **Adhesion:** How much force is required to separate the chemical coating from the base substrate? A universal tester, such as an Instron unit, is used to determine the force required to peel the coating from the fabric.
- **Cold Crack:** Is the fabric strong enough to resist cracking when bent or folded at low temperatures? A low temperature apparatus is used for this test.
- **Flex:** When the fabric is flexed and twisted, does the fabric maintain its surface appearance or is there cracking, crazing or delamination? This test method employs a Flex-O-Test machine (formerly known as a Newark Flex Tester).
- **Seam Strength:** Does the fabric resist seam tearing? The sample is pressed onto a needle board and pulled on a universal tester for this test.
- **Tear Strength:** How much force is required to tear the fabric? A universal tester is used to measure this property.
- **Tensile Strength:** How much force is required to break the fabric? A machine consisting of a straining mechanism, holding clamps and load recording mechanism can be used for this test. Tensile strength is also measured using a Universal Testing Machine.

To measure the film or coated fabric's ability to perform under the anticipated conditions of commercial use, test methods also assess the following properties:

- **Abrasion:** How resistant is the coated fabric to damage when rubbed by an abrasant such as a coarse woven fabric? The Wyzenbeek Abrader is used for this test.
- **Blocking:** Will the coated fabric become tacky at elevated temperatures and stick face to face when subjected to heat and pressure? A forced air laboratory oven is used for this test.
- **Crocking:** Will color transfer from a coated fabric to another surface? A white cotton swatch, mounted on an AATCC-approved Crockmeter, is rubbed across the specimen and examined for any color transfer.
- **Exposure to Disinfectants:** How does the fabric's surface, including color and gloss properties, perform after repeated exposure to cleaning agents? A method of disinfecting and examining fabric samples is used.
- **Light Stability:** How resistant is a coated fabric to fading and degradation from sunlight (UV radiation)? A QUV unit or Weatherometer is used to assess this property.
- **Volatility:** Will materials volatilize from a coated fabric at elevated temperatures? Samples are heated in the presence of activated carbon, which will absorb any volatile components. Percent weight loss is measured.

standards for vinyl and other chemical-coated upholstery fabrics produced with non-woven or knit substrates used as marine upholstery materials. This standard covers, but is not limited to, other chemical coatings widely used for marine upholstery. The standard does not cover chemical-coated fabrics used in indoor applications.

CFFA-MARINE/PU-101C RECOMMENDED MINIMUM PERFORMANCE STANDARDS FOR POLYURETHANE UPHOLSTERY FABRICS – MARINE sets recommended performance standards for polyurethane-coated fabrics produced with non-woven, knit or woven substrates used in marine upholstery material. The standard does not apply to indoor applications. The polyurethane upholstery materials are manufactured from natural and/or synthetic fibers, and coated on one side to create a durable, protective surface. The standard assesses specific properties to ensure a durable, protective surface that provides an aesthetic appearance and texture under non-abusive consumer usage.

CFFA-P-101D RECOMMENDED MINIMUM PERFORMANCE STANDARDS FOR VINYL SWIMMING POOL LINERS – IN-GROUND sets the recommended minimum performance standards for vinyl and other polymeric films, plain and printed, used for in-ground swimming pool liners. The standard specifies the properties that define a durable polymer film so it will withstand the rigors of years of outdoor use while maintaining its aesthetic appearance.

Copies of the standards and Standard Test Methods publication are available on the CFFA website at <http://www.cffaperformanceproducts.org/cffa-pages/publications.asp>. For the most current editions and available CEUs, always refer to this site.



1300 Sumner Ave., Cleveland, Ohio 44115-2851
Phone: (216) 241-7333 Fax: (216) 241-0105
www.chemicalfabricsandfilm.com
www.cffaperformanceproducts.org