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[ACT WHITE PAPER SERIES]

Cleaning Resources & Considerations

With the wide range of fabrics, vinyl and other coated materials in the market today, as well as an ever-increasing number of finishes, cleaning of contract textiles is a complex subject. Concerns such as sustainability and healthcare cleaning requirements add additional layers of complexity. This document has been developed as a resource for information about cleaning contract textiles.

Considerations for Specifiers and End-Users

Before specifying:

- Understand the circumstances and conditions of each site.
  - How will the space be used?
  - How often will the furniture/space be actively used (e.g., 24/7, multiple shifts)?
  - What is the potential for neglect or abuse?
  - What are the potential sources of soiling and stains?
  - What cleaning protocol/practices are unique to the facility (e.g., hospital, hotel)?

After installation:

- It is the specifiers'/end-users' responsibility to comply with a product's recommended cleaning instructions.
  - Consider any treatments or finishes, including those added by purchaser.
  - Provide cleaning recommendations for end-user.
  - Consider providing end-users with leftover fabric for use in future cleaning trials.

Remember...

- No product is immune from soiling and staining.
- Lack of cleaning and/or improper cleaning will shorten the life span of any fabric or coated material.
- Added finishes do not eliminate the need for routine cleaning and proper fabric/material care.
- The longer a stain remains, the more difficult it may be to remove. Addressing stains quickly increases the chance of successful removal.
- Rinsing is an important part of the cleaning process and is often overlooked. Cleaners leave behind residue which if not removed by rinsing may be harmful to the product.
- Cleaning requirements will vary with facility use.
- Some terms related to cleaning practices are often used generically but actually refer to specific protocols. Terms such as "disinfection," "stain release" and "stain repellent" have unique definitions; please see the section "Terms to Understand."
- Your fabric supplier is the best source for detailed cleaning recommendations for the specified fabric. Be sure to provide your fabric supplier with any information that may impact cleaning (e.g., frequency of use, type of environment and the furniture style).

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Organizational Links and Related Reading

10 Ways to Find Safer Cleaners
www.turi.org/News/Press_Releases/Press_Release_Archive/10_Ways_to_Find_Safer_Cleaners

The American Cleaning Institute (formerly Soap & Detergent Association)
Choosing, using and disposing of cleaning products wisely.
www.cleaninginstitute.org

American Home Furnishings Alliance (AHFA)
A trade organization serving the home furnishings industry. The AHFA Joint Industry Fabric Standards and Guidelines Committee develops standards for woven and knit upholstery fabrics. Through continuing reviews and refinements, it strives to keep test methods and performance criteria updated to reflect field performance of fabrics. AHFA adopted the Standard Reference Guide for Professional Upholstery Cleaning, BSR- IICRC S300, published by the Institute of Inspection, Cleaning and Restoration Certification (IICRC). See Appendix I.
www.ahfa.us/standards.asp#wovenstds

Cleaner Solutions Database
Testing performed at the Toxic Use Reduction Institute (TURI) Laboratory: a wealth of data has been accumulated on the performance of industrial and institutional cleaning products.
www.cleanersolutions.org

Coastwide Industries
Manufactures commercial cleaning supplies and has a testing lab. Publishes understandable technical articles on cleaning. Includes a cleaning glossary, cleaning the healthcare environment, green cleaning, etc.
www.coastwidelabs.com/techserv.htm

DfE, Design for the Environment, an EPA Partnership Program
Products, including industrial cleaners, screened for potential human health and environmental effects. Product manufacturers earn the right to display the DfE logo on recognized products. They have invested heavily in research & development to ensure that their ingredients and finished product align on the green end of the health and environmental spectrum while maintaining or improving product performance.
www.epa.gov/dfe/pubs/projects/formulat/formpart.htm

Drycleaning & Laundry Institute International (DLI)
The world's leading professional garment care organization. DLI's balanced representation of cleaning entities, both large and small, makes it the industry voice. Home furnishing consumer tips, including cleaning Codes W, X & S.
www.dlionline.org/Home-Furnishings

Organizational Links and Related Reading (Continued)

Furniture Material as Pathogen Media, Recommended Disinfectants, Cleaning Methods and Results
The Center for Health Design, "Developing an Evidence-Based Design Furniture Checklist." The paper concludes with recommendations for future EBD furniture research, government and industry standards development, and further checklist development.
www.healthdesign.org/chd/research/furniture-design-features-and-healthcare-outcomes

Healthcare Without Harm
Summary of the main health and environmental impacts related to conventional surface cleaning. Describes a systems approach for designing and implementing healthier and environmentally friendlier cleaning strategies for the healthcare sector, and indicates areas where future research and policy initiatives are needed.
www.noharm.org/us_canada/reports/2009/apr/rep2009-04-20.php

Institute of Inspection, Cleaning and Restoration Certification (IICRC)
A certification and standard-setting non-profit organization for the inspection, cleaning and restoration industries. The organization published the Standard and Reference Guide for Professional Upholstery Cleaning (BSR-IICRC S300), a document that provides a specific set of practical standards for upholstery cleaning. This guide does not attempt to teach comprehensive upholstery cleaning procedures; rather, it provides the foundational principle for proper cleaning practice. The Standard references codes W, S, WS and X, which are commonly recognized symbols used in relation to the care and cleaning of textiles. See Appendix I.
http://www.iicrc.org/standards/iicrc-s300/
The IICRC also provides a resource for finding local trained cleaning professionals.
http://www.iicrc.org/locate-a-certified-professional/

Restoration Industry Association
Oldest and largest non-profit, professional trade association dedicated to providing industry leadership, supporting science, and promoting best practices in the cleaning and restoration industry.
www.restorationindustry.org

Textile Industry Affairs
Provides care and laundering recommendations for apparel and textile industry professionals and consumers. Contains a link to the Guide to Apparel/Textile Care Symbols, which are accepted by the Federal Trade Commission (FTC) and internationally recognized. Site also includes high-resolution images of the symbols. See Appendix II.
www.textileaffairs.com

TURI, the Toxics Use Reduction Institute
Resources and tools to reduce the use of toxic chemicals and protect public health and the environment. Evaluations and comparisons of performance of water-based and other types of cleaners. Information on effective cleaning methods. Lab and field-based technical assistance for companies looking for safer, more cost-effective cleaning alternatives.
www.turi.org

Options for Testing

The following test methods are used by testing labs as a starting point to address specific cleaning-related issues that ACT members and end-users may encounter. Cleaning tests can be helpful analytical tools; however, lab tests cannot replicate conditions in the field. Therefore, they are only indicators of cleaning performance and don't guarantee cleanability. Test methods are commonly customized to address specific needs of an environment, type of application, potential stains, type of cleaning products and cleaning protocol. For example, test procedures could be modified to extend the length of time a stain remains on the material before cleaning. This would better represent actual field conditions.

Laundering Test Protocols

AATCC Test Method 130-2010 Soil Release: Oily Stain Release Method
Brief Test Description: A stain (corn oil) is applied and forced into the fabric. The stained fabric is then laundered and evaluated against a Stain Release replicate. This test method is designed to measure the ability of fabrics to release oily stains during home laundering. It is primarily for use by fabric finishers to evaluate the likely performance of soil release finishes in actual use.

Dimensional Change to Commercial Laundering AATCC 96 (Modified)
Brief Test Description: A range of laundering test procedures from severe to mild is provided to allow simulation of the types of laundering found in commercial laundry. On a case-by-case basis, this test may be modified to fit the customer needs. Instead of or in addition to measuring dimensional change, snagging, wrinkling, etc., the fabric can be rated on its ability to release stains in commercial laundering cycles. This test method is used for the determination of dimensional changes of woven and knitted fabrics made of fibers other than wool when subjected to laundering procedures commonly used in a commercial laundry.

Surface Cleaning Test Protocols

AATCC 130 Stain Release (Bleach) Modified Cleaning Method
Brief Test Description: The one staining agent (Bleach dilution 1:5 Bleach: Water) is applied to two pieces of the material in the manner described by AATCC 130. The stains are allowed to set for a period of 5 minutes for the first piece, and 24 hours for the second piece. After this period has elapsed, a white cotton print cloth is wet with a solution of Ivory Soap Liquid and water. The stained area is then spot cleaned to attempt to remove stain. After the stained and cleaned material has dried, it is evaluated by comparing the test specimen with photos of stained replicas specified by AATCC Test Method 130.

Options for Testing (Continued)

AATCC 130 Stain Release (Betadine) Modified Cleaning Method
Brief Test Description: One staining agent (Betadine) is applied to the material in a manner described by AATCC 130. The stain is allowed to set for 60 minutes. After this period of time has elapsed, a white print cloth is wetted with various cleaning solutions, and the stain is spot cleaned. After the stained and cleaned material has dried, it is evaluated by comparing the test specimen with photos of stained replicas specified by AATCC Test Method 130.

AATCC 130 Stain Release (Color Fastness to Disinfectant) Modified Cleaning Method
Brief Test Description: Hospital-grade disinfectant cleaner is applied to the material in the manner described by AATCC 130 (Stain Release). The solution is allowed to set for 24 hours. Dried residue is removed and neutralized with distilled water. The discoloration on the material is evaluated by comparing the test specimen with AATCC Grey Scale for color change.

AATCC 157 Colorfastness to Solvent Spotting: Modified as to Solvent Used
Brief Test Description: A 1" x 1" test specimen is attached to the center of a 6" x 6" square of white blotting paper. A 1.5 ml of cleaning solution is placed onto the test specimen. After air drying, the blotter paper is evaluated for staining/color transfer by comparison with AATCC 9-step chromatic transfer scale.

ASTM F 793 Standard Classification of Wall Covering Durability/Scrubbability
Brief Test Description: The wall covering is scrubbed with a bristle mounted on a plate brass block in a Gardner Washability Machine, using a prescribed detergent solution.

ASTM F 793 Standard Classification of Wall Covering Durability/Washability
Brief Test Description: The wall covering is washed with a cellulose sponge mounted on a plate brass block in a Gardner Washability Machine, using a prescribed detergent solution.

ASTM D1308 Effect of Household Chemicals on Clear and Pigmented Organic Finishes
Brief Test Description: Using one of three methods (spot test: covered, spot test: open, and immersion) a small stain is placed on the material. After a time interval, as agreed upon between the purchaser and the seller, the spot is wiped clean and examined for return of original properties. A battery of different stains can be used, ranging from food stains, ink stains, cosmetics and cleaning products to blood and urine. Determining the stains to test depends on the customer and can be modified to the product's end-use (e.g., restaurant, hospital, pool area).

CFFA - 141: Stain Resistance
Reference: ASTM D1308-02 (2007) - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes

> *Method I* - To determine the resistance of the surface of coated fabrics to staining by common household chemicals and/or different staining compounds.
> *Method II* - To determine the resistance of the surface of vinyl wallcoverings to staining by common household chemicals and/or different staining compounds.

association for contract textiles

ACT Industry Partners - Testing Laboratories

Bureau Veritas
www.us.bureauveritas.com

Textile Testing
www.textiletesting.com

The Govmark Organization
www.govmark.com

Vartest Laboratories
www.vartest.com

Terms to Understand

Antimicrobial Products: Substances or mixtures of substances used to destroy or suppress the growth of harmful microorganisms whether bacteria, viruses, or fungi on inanimate objects and surfaces.

Antimicrobial pesticides have two major uses:

1. Disinfect, sanitize, reduce, or mitigate growth or development of microbiological organisms;
2. Protect inanimate objects (e.g., floors and walls), industrial processes or systems, surfaces, water, or other chemical substances from contamination, fouling, or deterioration caused by bacteria, viruses, fungi, protozoa, algae, or slime. [US Environmental Protection Agency (EPA)]

Cleaning: The removal of visible soil (e.g., organic and inorganic material) from objects and surfaces, normally accomplished manually or mechanically using water with detergents or enzymatic products. Cleaning is a form of decontamination that renders the environmental surface safe to handle or use by removing organic matter, salts, and visible soils, all of which interfere with microbial inactivation. [Centers for Disease Control and Prevention (CDC)]

Cleaning Residue: Cleaning product left behind on materials due to inadequate rinsing. Leftover cleaning residue attracts dirt and over time may be harmful to fibers and other materials.

Disinfection/Disinfectant: A process that eliminates many or all pathogenic microorganisms, except bacterial spores, on inanimate objects. [Centers for Disease Control and Prevention (CDC)]. A product that has received EPA registration based upon claims to effectively clean surfaces while at the same time killing bacteria, viruses or other microorganisms.

Reverse Crocking/Dye Transfer: When dyes from clothing and accessories migrate and stain other materials such as upholstered furniture. The likeliness of this happening depends upon variations in temperature and humidity. It is most noticeable when dark and/or highly saturated colored fabric, such as denim, comes in contact with light-colored textiles, leather or coated materials. Dye transfer cannot be controlled, is not preventable, and may be irreversible. Textile and coated material suppliers cannot be held liable for dye transfer caused by external contaminants.

Redeposition: When dirt, oil, and grime on fabric or coated materials is removed, and is then accidentally re-applied to the same material. To avoid redeposition, turn the cleaning cloth over frequently, or replace it with a new cleaning cloth, so that the upholstery material is not exposed to the soil that has just been removed.

Terms to Understand (Continued)

Routine Cleaning: The regular cleaning necessary to keep an upholstery fabric or coated material clean and free from soiling and dirt. Examples of routine cleaning may include vacuuming upholstery fabric with an upholstery attachment, immediate attention to spills, and rotating cushions and pillows to distribute wear. The frequency of routine cleaning is determined by the amount of traffic. The type of cleaning needed is determined by the fabric or coated material, the style of furniture, and the environment in which the material and furniture are situated.

Stain Release: A treatment that aids in releasing stains when cleaned with water. Most commonly used on fabrics that will be laundered.

Stain Repellent: A treatment that aids in repelling liquid from the fabric surface. Usually liquids will bead up and roll off the surface; therefore, cleaning methods are typically topical.

Stain Resistance: An ability inherent in a fiber or a chemical finish applied to the fiber and/or surface that inhibits specific stains from adhering to or discoloring fabrics.

Sterilization: A process that destroys or eliminates all forms of microbial life, including bacterial spores. [Centers for Disease Control and Prevention (CDC)]

Volatile Organic Compounds (VOC): The EPA defines VOCs as emitted gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands, including cleaning and disinfection supplies.

Appendix I
Cleaning Codes: W, S, WS and X

The BSR-IICRC S300 (Standard Reference Guide for Professional Upholstery Cleaning) published by the Institute of Inspection, Cleaning and Restoration Certification (IICRC) references codes W, S, WS and X, which are commonly recognized symbols used in relation to the care and cleaning of textiles.

In addition, the AHFA Joint Industry Fabric Standards and Guidelines Committee has adopted this standard; however, after ongoing studies of issues associated with cleaning upholstery fabrics, the committee agrees that the "Cleaning Codes" are valuable but do not provide manufacturers, retailers, consumers, or professional cleaners with adequate information regarding cleaning upholstery fabrics.

W: Spot clean only with water-based shampoo or foam upholstery cleaner. Pretest a small, inconspicuous area before proceeding. Do not over wet. Do not use solvents to spot clean. Pile fabrics may require brushing with a non-metallic, stiff-bristle brush to restore appearance. Hot water extraction or steam cleaning is not a recommended cleaning method. Cushion covers should not be removed and laundered. To prevent overall soiling, frequent vacuuming or light brushing with a non-metallic, stiff-bristle brush to remove dust and grime is recommended. When cleaning a spill, blot immediately to remove spilled material. Clean spots or stains from the outside to the middle of the affected area to prevent circling. Use a professional furniture cleaning service when an overall soiled condition has been reached.

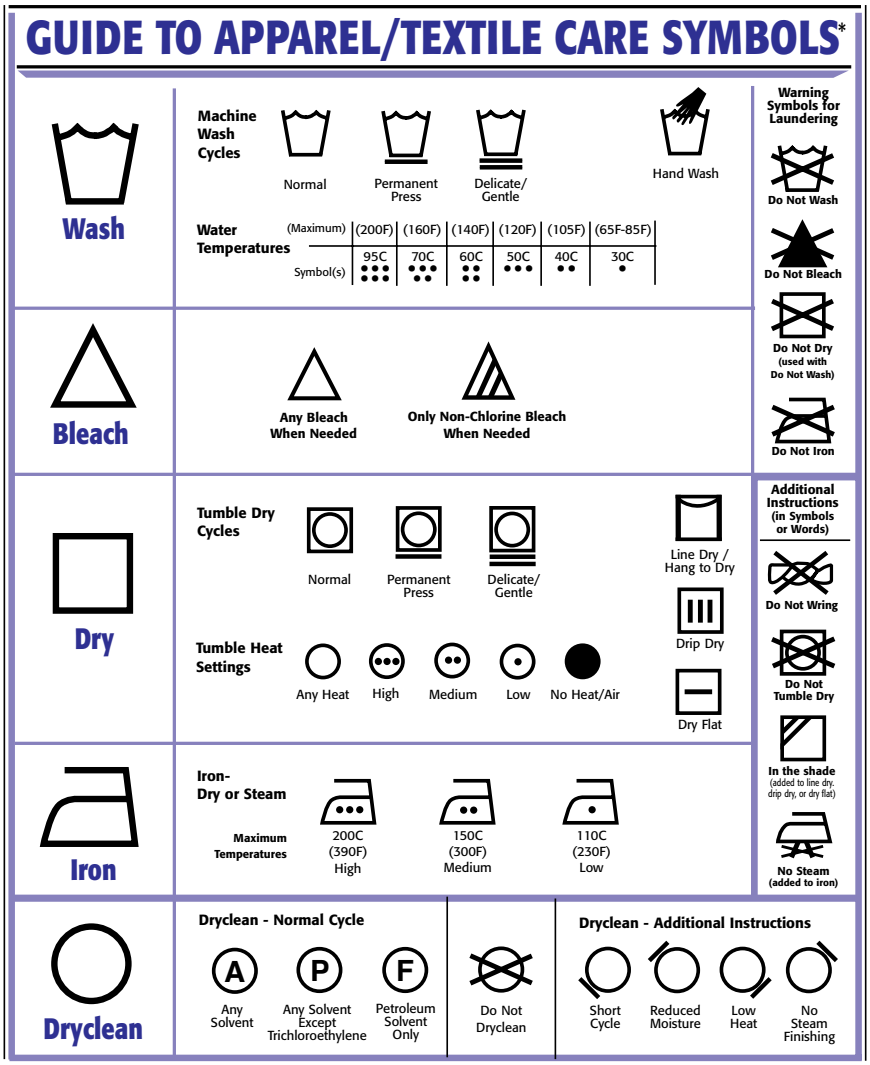
S: Spot clean only with a water-free cleaning solvent. Pretest a small, inconspicuous area before proceeding. Do not saturate. DO NOT USE WATER. Pile fabrics may require brushing with a nonmetallic, stiff-bristle brush to restore appearance. Cushion covers should not be removed and dry-cleaned. To prevent overall soiling, frequent vacuuming or light brushing with a non-metallic, stiff-bristle brush to remove dust and grime is recommended. When cleaning a spill, blot immediately to remove spilled material. Clean spots or stains from the outside to the middle of the affected area to prevent circling. Overall cleaning by a professional furniture cleaning service is recommended.

WS: Spot clean with upholstery shampoo, foam from a mild detergent, or mild cleaning solvent. Pretest a small, inconspicuous area before proceeding. Do not saturate. Pile fabrics may require brushing with a non-metallic, stiff-bristle brush to restore appearance. Hot water extraction or steam cleaning is not a recommended cleaning method. Cushion casings should not be removed and laundered or dry-cleaned. To prevent overall soiling, frequent vacuuming or light brushing with a non-metallic, stiff-bristle brush to remove dust and grime is recommended. When cleaning a spill, blot immediately to remove spilled material. Clean spots or stains from the outside to the middle of affected area to prevent circling. Use a professional furniture cleaning service when an overall soiled condition has been reached.

X: Clean only by vacuuming or light brushing with a non-metallic, stiff-bristle brush. DO NOT USE ANY WATER OR SOLVENT-BASED CLEANER.

Appendix II
Guide to Textile/Apparel Symbols

The following chart illustrates Commercial and Home Laundering and Dry Cleaning Symbols accepted by the Federal Trade Commission (FTC). Although not always considered relevant to upholstery applications, the symbols are used frequently in international markets and are therefore included for reference.
www.textileaffairs.com/charts.htm



*** This chart illustrates care symbols accepted by the Federal Trade Commission as part of a conditional exemption to the FTC Care Labeling Rule (16 CFR 423). This chart is referenced from ASTM D5489-96c, Fig. 1, Commercial and Home Laundering and Drycleaning Symbols,** which illustrates the symbols to use for laundering and drycleaning instructions. As a minimum, laundering instruction shall include, in order, four symbols: washing, bleaching, drying, and ironing; and drycleaning instructions shall include one symbol. Additional words may be used to clarify language-dependent instructions.

We urge you to purchase the latest Annual Book of ASTM Standards that contains the complete symbol set from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

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