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# NSF/ANSI 336: The Basics

## A Sustainability Assessment for Commercial Furnishings Fabric

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Environmental Education Committee  
Association for Contract Textiles  
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### **Purpose of NSF/ANSI 336**

The purpose of the Standard is to address the environmental, economic and social aspects of commercial furnishings fabric used in public occupancy settings such as office, hospitality, healthcare and institutional interiors. These textiles include but are not limited to woven, non-woven, bonded, knitted, felted and composite materials used for upholstered furniture; walls, draperies, cubicles, furniture systems and other vertical applications; and decorative top-of-bed applications such as bedspreads. The Standard also incorporates Life Cycle Assessment (LCA) criteria that measure inputs, outputs and environmental impacts of textile products across their entire lifespan.

### **History**

In 2003, the Association for Contract Textiles<sup>1</sup> Environmental Committee surveyed existing sustainable textile standards and identified the need for a universal standard to better serve suppliers, distributors and specifiers. In early 2004, the ACT Environmental Committee selected GreenBlue<sup>2</sup> to develop a standard suitable for textiles used in commercial interiors. That fall, ACT and GreenBlue approached NSF International<sup>3</sup> to provide ANSI<sup>4</sup>-certified credentials needed to build a consensus-based standard (NSF 336), applicable on a national level and available as a model to other areas of the textile industry.

In January 2006, NSF International, ACT and other parties began building the standard, with input from manufacturers, suppliers, regulatory agencies, customers, academia and end users. Five years later, the standard NSF/ANSI 336-2011 was published by NSF International. In May 2011, ACT membership adopted NSF/ANSI 336 as its voluntary guideline for sustainability. NSF/ANSI 336 is an evolving document. All NSF standards must be reaffirmed, revised or withdrawn at least every five years by the Joint Committee overseeing the standard.

## **Overview of the Standard**

NSF/ANSI 336-2011 is a multi-attribute standard that addresses eight sustainability parameters:

- Fiber Sourcing
- Safety of Materials
- Water Conservation
- Water Quality
- Energy
- Air Quality
- Recycling Practices
- Social Accountability

Each sustainability parameter has prerequisite and/or optional credits. To be compliant, a fabric must meet all prerequisites in the standard.

Certification to NSF/ANSI 336 is based on point totals to achieve a Compliant, Silver, Gold or Platinum level. The maximum number of points that can be awarded to a fabric under ANSI/NSF 336 is 100. Of these points, 50% address fabric composition and 50% address fabric manufacturing.

As with all ANSI standards, organizations that choose to assess their products with this standard may achieve first-party, second-party, or third-party conformance.

- A first-party (self-declared) assessment is performed by the organization that provides the product.
- A second-party assessment is performed by the organization that has a user or purchaser interest in the product.
- A third-party assessment is performed by a person or body that is independent of the person or organization that provides the product, and of the use or purchaser interests in that product.

## **Fiber Sourcing**

The goal of the Fiber Sourcing section is to encourage the use of less nonrenewable resources (i.e. fossil fuels) and less toxic chemical inputs. This section refers to the undyed/unprinted fiber content by weight of the fabric. There are no prerequisites for this section.

### **Optional Credits:**

Points are rewarded for fibers in the following categories:

#### **Non-fossil fuel based or recycled fibers:**

- Fibers from rapidly renewable sources (3 years or less) - includes cotton, flax, natural bamboo, wool, silk, PLA etc.
- Fibers from renewable sources (3-20 years) - includes regenerated cellulose (rayon, acetate, etc.)
- Recycled fibers - includes post-consumer and pre-consumer sources

#### **Reduced toxic inputs:**

- Fibers grown organically - includes fully organic and transitional organic sources
- Fibers grown with Integrated Pest Management systems
- Conformance to reduced toxic chemical levels in fiber and/or production (each fiber type has a specific list of chemicals of concern)

## Safety of Materials

The purpose of the Safety of Materials section is to promote chemicals and chemical formulations with low inherent hazard, effectively reducing overall human and environmental health and safety risk. Importantly, this section focuses on reducing risk by reducing hazard and not by reducing exposure.

Formulated chemicals can be found in fibers, dyestuffs, finishing and backing components, and cleaning agents and yarn lubricants used in production. This section covers all chemical inputs from the finished fiber to the finished fabric. Dyes and colorants used in solution-dyeing are also covered by this section.

### Prerequisites:

Manufacturers must first identify all intentionally-added chemical components by their Chemical Abstract Service (CAS) number if they are present at 1000ppm (0.1%) (unless a lower threshold is specified). Then these chemical components must meet the relevant safety limits in the following categories:

- Metals in dyes and pigments
- Known or probable carcinogens
- Reproductive toxins
- Mammalian acute toxicants
- Persistent, bioaccumulative and toxic chemicals
- Alkylphenol ethoxylates

### Optional Credits:

Points can be gained by inventorying the above pre-requisite chemical components to 100ppm (0.01%). Points can also be achieved by meeting safety limits for these additional categories of concern:

- Mutagenic substances
- Possible or suggested carcinogens
- Skin or respiratory sensitizers
- Organohalogens
- Persistent, bioaccumulative toxins
- Endocrine disruptors
- Volatile organic compounds
- Aquatic toxicants
- Biodegradable surfactants

## Water Conservation

The Water Conservation section is intended to promote best practices for conserving water during the making of textile goods. The areas of dyeing and finishing have been found to consume the most water, while yarn formation and fabric formation are also considered in this section. Manufacturers must collect data from suppliers and report water consumption in average gallons per pound of finished fabric.

### Prerequisite:

- Demonstrate current water usage for yarn and fabric formation, dyeing and finishing. Build a ten-year history of water usage.

### Optional Credits:

- Demonstrate current water usage specific to product under assessment
- Document water conservation practices
- Conduct a water audit for all facility operations

## Water Quality

The Water Quality section intends to monitor and improve the water quality released from textile manufacturing. Data will be gathered from the same suppliers recorded in the Water Conservation section: yarn formation, fabric formation, dyeing and finishing.

### Prerequisites:

- Collect and sample effluent annually, and test and report on all parameters that are part of National Pollutant Discharge Elimination System as well as additional effluents identified in this credit (namely heavy metals)
- All facilities involved in the manufacture of the product under assessment must be free of significant or repeated water permit violations.

### Optional Credits:

- Implement pollution prevention practices to reduce identified pollutants to treatment plant
- All effluent must have an average daily pH value between 6.0 and 10.0
- All effluent must have an average monthly temperature that does not exceed 35 C.

## Energy

The purpose of the Energy section is to encourage manufacturers to demonstrate an awareness of the amount of energy required for creating the product; demonstrate the use of energy conservation measures; and encourage investments in renewable energy. This section applies to energy used in yarn and fabric manufacturing, including dyeing and finishing.

### Prerequisites:

- Document corporate energy policy
- Document energy used to manufacture 2.2 lbs. (1 kg) of finished fabric

### Optional Credits:

- Document continual efforts to improve energy efficiency
- Document energy used for all significant energy-using processes
- Demonstrate savings in energy associated with the product being certified
- Use renewable energy generated onsite; or purchase RECs or carbon offsets

## Air Quality

The purpose of the Air Quality section is to promote best practices in evaluating air emissions resulting from dyeing, coating, printing, and finishing processes, which are considered the greatest contributors to air emissions during fabric production.

### Prerequisite:

Document the previous five years of air emissions. At a minimum, documentation shall include:

- carbon monoxide
- oxides or nitrogen
- sulfur dioxide
- particulate matter
- volatile organic compounds
- lead
- hazardous air pollutants

To maintain conformance to the standard, data must be subsequently documented on an annual basis.

## Recycling Practices in manufacturing and end of use

The Recycling Practices section rewards the reduction of impacts from solid waste and off-quality materials associated with commercial fabrics. This includes waste from fiber, yarn and fabric formation as well as finishing and dyeing facilities. Optional credits extend to ancillary materials from production as well as product design strategies, product installation waste and end of use recycling.

### Prerequisite:

The only prerequisite for this credit is that manufacturers must document the total amount of solid waste and off-quality materials from fiber, yarn, and fabric production.

### Optional Credits:

Optional credits are available for reduction, reutilization and recycling of the material documented in the prerequisite, including practices such as:

- designing for recyclability or biodegradability
- ongoing reduction of solid waste
- reutilization of waste as a fuel source
- mechanical and/or chemical recycling
- recycling of ancillary materials
- reclamation and recycling of application/installation scrap
- reclamation and recycling of used products

## Social Accountability

This section is intended to protect the fundamental human rights of people engaged in the manufacture of components or services associated with the product being assessed, including yarn, and fabric formation and fabric finishing. It does not include suppliers of chemicals and auxiliary products such as dyes and cleaning agents.

### Prerequisite:

Report all countries where facilities or suppliers are located, and cross-reference the list with the [Maplecoft Map of Human Rights Risk](http://maplecoft.com/docs/serve/human_rights_risk_index_2012_poster) ([maplecoft.com/docs/serve/human\\_rights\\_risk\\_index\\_2012\\_poster](http://maplecoft.com/docs/serve/human_rights_risk_index_2012_poster)). If one or more of the facilities is located in a country rated as Extreme or High Risk the manufacturer must conduct a written survey, on-site assessment or third-party audit to ensure that the facility does not engage in or support the use of forced labor or child labor.

### Optional Credits:

Additional credits can be achieved through written surveys, on-site assessments or third-party audits regarding the following additional issues that are also commonly recognized by International Labor Organization (ILO) conventions.

- Safety and Health
- Freedom of Association and Right to Collective Bargaining
- Non-Discrimination
- Disciplinary Practices
- Working Hours
- Remuneration

**Labelling and NSF/ANSI 336-2011**

Products meeting the standard should be labeled in regards to their level of conformance and type of declaration (first-party, second-party, or third-party).

Labelling example of suggested language for a self-declared (first-party) claim of conformance:

*The supplier of (product name) has assessed this product and declares it to conform to the (Compliant, Silver, Gold or Platinum) Level of NSF/ANSI 336-2011, a voluntary, multi-attribute standard of sustainability for commercial fabrics.*

**To purchase NSF/ANSI 336-2011**

To purchase a full copy of the NSF/ANSI 336-2011 standard, please visit:

[www.techstreet.com/nsfgate.html](http://www.techstreet.com/nsfgate.html)

Section	TABLE of Prerequisite Criteria
Fiber Sourcing	No prerequisites
Safety of Materials	Identify all intentionally-added chemical components by their CAS number if they are present at 1000ppm (0.1%) (unless a lower threshold is specified) and demonstrate they also meet the relevant safety limits in six categories
Water Conservation	Demonstrate current water usage at facilities performing yarn and fabric formation, dyeing and finishing. Collect data to build a 10-year history.
Water Quality	Demonstrate that all facilities sample effluent annually, and all facilities are free of significant or repeated water permit violations.
Energy	Document corporate energy policy and document amount of energy used to manufacture 2.2 lbs (1 kg) of first-quality finished fabric
Air Quality	Report air quality data annually. Collect data to build a 10-year history
Recycling	Document all fiber/yarn/fabric production solid waste or off-quality materials
Social Accountability	Report countries of manufacture and cross reference to Maplecroft Map of Human Rights Risk. If facilities exist in extreme or high risk countries, must prove these facilities do not engage in forced or child labor.

## Organizations involved in the creation or promotion of NSF/ANSI 336-2011

### 1. Association for Contract Textiles

The Association for Contract Textiles was founded in 1985 as a not-for-profit trade association to address a variety of issues related to contract fabrics. Currently the membership of the association includes principal members, furniture associate members, and industry partners and individuals. Principal members are textile wholesalers directing all or the majority of their business to the contract interior market; associate members are furniture manufacturers; and industry partners and individuals are suppliers to the principal member companies.

[www.contracttextiles.org](http://www.contracttextiles.org)

### 2. GreenBlue

A nonprofit that equips business with the science and resources to make products more sustainable. GreenBlue is building a world where businesses are leaders for environmental stewardship and products are designed from the start with sustainability in mind. GreenBlue currently works in three program areas: chemicals, packaging, and forest products, as well as working one-on-one with companies through GreenBlue Advisory Services. Its team of scientists, engineers, designers, and business strategists translates complex scientific concepts into concrete business strategies. [www.greenblue.org](http://www.greenblue.org)

### 3. NSF International

NSF International has been testing and certifying products for safety, health, and the environment for more than 65 years. As an independent, not-for-profit organization, NSF's mission is to protect public health and the environment through standards development, inspection, testing, certification for the food, water, building materials, recall, chemical and health science industries. [www.nsf.org](http://www.nsf.org)

### 4. ANSI

The American National Standards Institute or ANSI is a private non-profit organization that oversees the development of voluntary consensus standards for products, services, processes, systems, and personnel in the United States. The organization also coordinates U.S. standards with international standards so that American products can be used worldwide. ANSI accredits standards that are developed by representatives of standards developing organizations, government agencies, consumer groups, companies, and others. These standards ensure that the characteristics and performance of products are consistent, that people use the same definitions and terms, and that products are tested the same way. [www.ansi.org](http://www.ansi.org)