

Sustainable carpet assessment

**NSF International Standard/
American National Standard**



NSF International, an independent, not-for-profit, non-governmental organization, is dedicated to being the leading global provider of public health and safety-based risk management solutions while serving the interests of all stakeholders.

This Standard is subject to revision.
Contact NSF to confirm this revision is current.

Users of this Standard may request clarifications and interpretations, or propose revisions by contacting:

Chair, Joint Committee on Sustainable Carpet
c/o NSF International
789 North Dixboro Road, P. O. Box 130140
Ann Arbor, Michigan 48113-0140 USA
Phone: (734) 769-8010
Telex: 753215 NSF INTL
FAX: (734) 769-0109
E-mail: info@nsf.org
Web: <http://www.nsf.org>

NSF/ANSI 140 – 2007

NSF International Standard/
American National Standard
for Sustainability —

Sustainable carpet assessment

Standard Developer
NSF International

Adopted October 26, 2007
NSF International Board of Directors

Designated as an ANSI Standard
October 26, 2007
American National Standards Institute

Prepared by
The NSF Joint Committee on Sustainable Carpet

Recommended for Adoption by
The NSF Council of Public Health Consultants

Adopted by
The NSF Board of Directors
October 2007

Published by

NSF International
P. O. Box 130140, Ann Arbor, Michigan 48113-0140, USA

For ordering copies or for making inquiries with regard to this Standard, please reference the designation “NSF/ANSI 140 – 2007.”

Copyright 2007 NSF International

Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from NSF International.

Printed in the United States of America.

Disclaimers¹

NSF, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of NSF represent its professional judgment. NSF shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. NSF shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Standard.

NSF Standards provide basic criteria to promote sanitation and protection of the public health. Provisions for mechanical and electrical safety have not been included in this Standard because governmental agencies or other national standards-setting organizations provide safety requirements.

Participation in NSF Standards development activities by regulatory agency representatives (federal, local, state) shall not constitute their agency's endorsement of NSF or any of its Standards.

Preference is given to the use of performance criteria measurable by examination or testing in NSF Standards development when such performance criteria may reasonably be used in lieu of design, materials, or construction criteria.

The illustrations, if provided, are intended to assist in understanding their adjacent standard requirements. However, the illustrations may not include *all* requirements for a specific product or unit, nor do they show the only method of fabricating such arrangements. Such partial drawings shall not be used to justify improper or incomplete design and construction.

Unless otherwise referenced, the annexes are not considered an integral part of NSF Standards. The annexes are provided as general guidelines to the manufacturer, regulatory agency, user, or certifying organization.

¹ The information contained in this Disclaimer is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this Disclaimer may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

This page is intentionally left blank.

Contents

1	General	1
1.1	Purpose and goals	1
1.2	Scope	2
2	Normative references and tools	2
2.1	Normative references	2
2.2	Informational references	4
3	Definitions	6
4	Compliance, evaluation, and assessment criteria	8
4.1	Elements	8
4.2	Prerequisites	9
4.3	Credit points	9
	Table 4.1 – Sustainable carpet achievement levels	10
4.4	Compliance of product platforms	10
4.5	Product labeling and marking	10
4.6	Communications regarding compliance with this Standard	10
5	General requirements	10
5.1	Life cycle assessment (LCA)	11
5.2	Use of sustainably produced bio-based materials in carpet	11
5.3	Sustainable natural animal carpets	11
5.4	Defining life cycle manufacturing boundaries for reporting toxics and social indicators	11
6	Public health and environment (PHE)	11
6.1	Scope	11
6.2	Supply chain feedstock inventory	11
6.3	Manufacturing emissions inventory and credit for voluntary reductions beyond compliance	12
	Table 6.1 – Credit for voluntary pollutant reductions beyond compliance	13
	Table 6.2 – Life cycle points awarded	14
	Table 6.3 – Baseline assessment life-cycle impact categories	15
	Table 6.4 – Life cycle points awarded	16
7	Energy and energy efficiency (EN)	17
7.1	Scope	17
7.2	Energy inventory	17
	Table 7.1 – Points awarded for manufacturer’s use of renewable energy and/or energy reduction of total energy production requirements	18
	Table 7.2 – Points awarded for supplier’s usage of renewable energy	18
8	Bio-based content, recycled content, and environmentally preferable (EPP) materials (MATLS)	19
8.1	Scope	19
8.2	Materials content inventory (prerequisite)	19
	Table 8.1 – Points awarded for manufacturer’s use of bio-based, recycled content, or EPP materials	20
9	Manufacturing (MFG)	20
9.1	Scope	20
9.2	Manufacturer’s environmental policy, EMS, and social indicator reporting	20
	Table 9.1 – Social indicators ¹	21
9.3	Performance durability (prerequisite)	21
	Table 9.2 – Carpet performance testing	22
9.4	LCA for product platform undergoing assessment (prerequisite for platinum/EPP)	22

9.5 EMS certification	23
9.6 Suppliers' social indicator reporting	23
9.7 Quality management system (QMS).....	23
9.8 DfE and/or LCA process	23
9.9 Waste minimization or waste reduction	23
10 Reclamation and end of life management (EOL)	24
10.1 Scope.....	24
10.2 Reclamation and recycling program.....	24
10.3 Transparent secondary materials reclamation system.....	25
10.4 Transparent materials reclamation system	26
10.5 Transparent repurposed materials reclamation system	26
11 Innovation	26
11.1 Scope.....	26
11.2 Innovation credit	26
12 Sustainable carpet assessment matrix.....	26
Annex A	A1
A.1 General guidance	A1
A.2 Sustainably produced bio-based material performance attributes	A1
A.3 Specific guidance – Recycled content background	A2
Figure A.1 –General product life cycle	A3
Annex B	B1
Table B.1 – Persistent, bioaccumulative, and toxic (PBT) chemicals	B1
Figure B.1 – Life cycle boundaries for the purposes of toxics and social indicator reporting (T&SR)	B3
Annex C	C1
C.1 Guidance.....	C1

Foreword²

This American National Standard, NSF/ANSI 140 Sustainable Carpet Assessment Standard, has been developed as part of the ongoing efforts of a number of interested parties to document and improve the sustainability profile of carpet and rug products using established and/or advanced scientific principles, practices, materials, and standards. Stakeholders involved in developing the Standard included carpet and rug manufacturers, end users such as interior design professionals, state agencies responsible for environmentally preferable product procurement practices, academics, and non-governmental organizations.

The purpose of the Sustainable Carpet Assessment Standard is to establish consistent requirements for sustainable carpet products. These requirements are intended to form the basis of conformity assessment programs, such as third-party certification or registration.

The Sustainable Carpet Assessment Standard has been designed, in part, to satisfy the following criteria:

- Demonstrate how carpet and rug products can conform to the environmental, economic, and social principles of sustainability throughout the supply chain.
- Demonstrate conformance with ISO Type 1 (ISO 14024) and Type 2 (ISO 14021) environmental labelling and declaration requirements.
- Demonstrate conformance with the Federal Trade Commission (FTC) Guides for the Use of Environmental Marketing Claims.
- Engender confidence in the various stakeholders (manufacturers, suppliers, regulators, and consumers) that products labeled with a third party certification mark consistently meet the requirements of this program.
- Encourage participation by all manufacturers of carpets and rugs to maximize impact reductions and enhance environmental accomplishments.

This Standard does not address carpet packaging or the adhesives and padding that may be used in the installation of carpet products. This Standard does not address the cleanability of carpet products. Consideration will be given to the inclusion of these components of carpeting systems in this Standard as sustainability criteria are developed for these adjunct products and processes.

Comments on this Standard should be sent to NSF International, Standards Department, P. O. Box 130140, Ann Arbor, Michigan 48113-0140, USA or to standards@nsf.org.

² The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

This page is intentionally left blank.

NSF/ANSI Standard for Sustainability —

Sustainable carpet assessment

1 General

1.1 Purpose and goals

The purpose of this Standard is to provide a market-based definition for a path to sustainable carpet, to establish performance requirements for public health and environment, and to address the triple bottom line, economic-environmental-social, throughout the supply chain.

The goals of this Standard are to:

- increase the economic value of sustainable carpet throughout the supply chain by enhancing market demand for sustainable carpet products;
- provide information that enables specifiers to sort out the complex information on sustainability attributes;
- identify other consensus-based standards relevant to sustainable carpet;
- educate and instruct all stakeholders in the carpet supply chain; and
- encourage competition between manufacturers and their suppliers to seek out or develop environmentally preferable processes, practices, power sources, and materials.

This Standard is intended to help raw material suppliers, converters, manufacturers, and end-users. Adherence to this Standard and achievement of high levels of sustainable attribute performance can or should result in:

- Credits from LEED (Leadership in Energy and Environmental Design) for Commercial Interiors, e. g., Indoor Environmental Quality credit 4.3, Materials and Resources credit 4, Innovation and Design credit 1);
- design innovation;
- product differentiation;
- customer satisfaction;
- product innovation;
- improved indoor air quality and lower emissions;
- ecological restoration;

- enhanced health and safety for workers and consumers; and
- measurable reductions in total environmental impact.

1.2 Scope

This Standard is intended to enable organizations throughout the carpet supply chain to apply performance requirements to achieve sustainable attributes and demonstrate compliance with levels of achievement through quantifiable metrics. The Standard is inclusive, is based on life cycle assessment (LCA) principles, and provides benchmarks for continuous improvement and innovation.

This Standard is intended to allow inclusive participation and encourage the progressive movement of the carpet industry toward sustainability. This Standard identifies requirements of sustainable attribute performance and three levels of achievement by which carpet materials and products can be measured with respect to specific attributes that indicate progress toward sustainability.

While this Standard can be used on any carpet product, it is intended to be used for evaluation of commercial carpet products by providing a product evaluation methodology that is additive to emerging commercial green building standards.

This Standard does not apply to the packaging of sustainable carpets or to the adhesive or padding products used in the installation of carpet products.

This Standard is voluntary, but emphasizes disclosure of information on both impacts and benefits of a carpet or carpet product from an environmental and sustainability perspective.

All products or processes can be found compliant to this Standard if they are able to achieve all prerequisites and score the minimum required for compliance as specified in 4.

2 Normative references and tools

The following documents contain provisions that, through reference, constitute provisions of this NSF/ANSI Standard. At the time this Standard was balloted, the editions listed below were valid. All documents are subject to revision, and parties are encouraged to investigate the possibility of applying the recent editions of the documents indicated below.

2.1 Normative references

American Association of Textile Chemists and Colorists (AATCC) Test Method 134-2006, Electrostatic Propensity of Carpets³

American Association of Textile Chemists and Colorists (AATCC) Test Method 189-2002 Fluorine Content of Carpet Fibers³

American Association of Textile Chemists and Colorists (AATCC) Test Method 16-2004 Colorfastness to Light³

ASTM International (ASTM) D5252-05, Standard Practice for the Operation of the Hexapod Drum Tester⁴

ASTM International (ASTM) D1335-05, Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings⁴

³ www.aatcc.org

⁴ www.astm.org