



*NSF International Standard /  
American National Standard*

## NSF/ANSI 332 - 2011

Sustainability Assessment for  
Resilient Floor Coverings



*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 Flooring  
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](mailto:info@nsf.org)  
Web: <http://www.nsf.org>

NSF/ANSI 332 – 2011

NSF International Standard/  
American National Standard  
for Sustainability —

## **Sustainability assessment for resilient floor coverings**

Standard Developer  
NSF International

**NSF International Board of Directors**

**Designated as an ANSI Standard**  
May 22, 2011

**American National Standards Institute**

Prepared by  
**The NSF Joint Committee on Sustainable Flooring**

Recommended for Adoption by  
**The NSF Council of Public Health Consultants**

Adopted by  
**The NSF Board of Directors**  
March 2010

Revised May 2011

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 332-11."

Copyright 2011 NSF International  
Previous edition © 2010

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.

## Disclaimers<sup>1</sup>

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.

---

<sup>1</sup> 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.....	1
1.2	Scope.....	1
1.3	Principles.....	2
2	Normative references .....	2
3	Definitions.....	6
4	Conformance, evaluation, and assessment criteria .....	7
4.1	Elements .....	7
4.2	Prerequisites .....	7
4.3	Scoring methodology .....	7
4.4	Procedures for labeling and reporting.....	8
5	Product(s) design.....	8
5.1	Purpose.....	8
5.2	Enlightened design process.....	9
5.3	Environmentally sustainable material inputs .....	10
5.4	Human and ecologically friendly inputs.....	11
5.5	Informed selection of suppliers .....	12
6	Product(s) manufacturing .....	13
6.1	Purpose.....	13
6.2	Environmental policy and management.....	13
6.3	Conservation of energy resources .....	14
6.4	Management of water resources .....	15
6.5	Optimization of material resources .....	15
6.6	Protection of air resources .....	16
7	Long-term Value .....	17
7.1	Purpose.....	17
7.2	Fitness of purpose.....	17
7.3	Protection of indoor air quality .....	18
7.4	Compatibility with green maintenance strategies .....	18
8	End of Life Management .....	19
8.1	Reclamation feasibility .....	19
8.2	Product(s) reclamation and stewardship.....	19
9	Corporate governance.....	20
9.1	Purpose.....	20
9.2	Public commitment to sustainability .....	20
9.3	Employer responsibility .....	21
9.4	Community engagement (plant level) .....	22
9.5	Financial leadership (corporate level).....	23
10	Innovation .....	23
10.1	Scope.....	23
10.2	Innovation credit .....	23
Annex A	.....	A1

Annex B .....	B1
B.1 General .....	B1
B.2 Product(s) certification process.....	B1
B.3 Suggested requirements for certifying organizations.....	B1
Annex C .....	C1
Annex D .....	D1



## Foreword<sup>2</sup>

This American National Standard, NSF/ANSI 332 Sustainability Assessment for Resilient Floor Coverings Standard, has been developed as part of the ongoing efforts of interested parties to document and improve the sustainability profile of resilient floor coverings using established and/or advanced scientific principles, practices, materials, and standards. Stakeholders involved in developing the Standard included resilient floor covering manufacturers, end users such as consultants and certifiers, state agencies responsible for environmentally preferable product procurement practices, academics, and non-governmental organizations.

The purpose of the Sustainability Assessment for Resilient Floor Coverings Standard is a thorough communication of information that is verifiable, accurate, and not misleading about environmental and social aspects associated with the production and use of resilient floor coverings.

The Sustainability Assessment for Resilient Floor Coverings Standard has been designed, in part, to satisfy the following criteria:

- Product design through encouraging manufacturers to integrate environmental and life-cycle thinking into the product(s) design process.
- Product manufacturing encouraging manufacturers to quantify the environmental impacts from their manufacturing, and then act to reduce or remove those impacts.
- Long term value encouraging manufacturers to maximize product(s) longevity.
- End of life management ensuring that existing and new resilient flooring products can be collected, processed, recycled, and/or composted within the existing materials recycling infrastructure.
- Corporate governance encouraging corporate social responsibility in the forms of providing a desirable workplace, being involved in the local community, and demonstrating financial health.
- Innovation to give manufacturers the opportunity to be awarded points for exceptional performance above the requirements set forth in this Standard.

As used in this Standard, “resilient floor coverings” includes, but is not limited to, vinyl tile, vinyl composition tile, sheet vinyl, rubber, polymeric, and linoleum flooring products in which the wearing surface is non-textile. Also included are flooring accessories such as wall base, moldings, and stair treads. The Standard is applicable to products manufactured in one facility or multiple facilities, one country or multiple countries.

This version of the standard includes the following revisions:

### **Issue 3 – Normative references**

Normative references were updated including the reference to California Specification 01350 for Indoor air VOC emissions.

### **Issue 4 – Chemicals of Concern**

This ballot updated language in section 5.4.1 and 5.4.3 relating to chemicals of concern.

---

<sup>2</sup> 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.

**Informational Note**

An informational note was added to clarify what test data was acceptable for the listing under 7.2.2 Durability.

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](mailto:standards@nsf.org).

NSF/ANSI Standard  
For Sustainability

## **Sustainability assessment for resilient floor coverings**

### **1 General**

#### **1.1 Purpose**

The overall purpose of this Standard is a thorough communication of information that is verifiable, accurate, and not misleading about environmental and social aspects associated with the production and use of resilient floor coverings. Such communication is expected to encourage the demand for and supply of products that cause less stress on the environment and society, thereby stimulating the potential for market-driven continuous improvement.

This Standard is intended to be science based, provide transparency, and offer credibility for manufacturers in making claims of environmental preferability and sustainability, and to harmonize the principles and procedures used to support such claims.

This Standard provides a practice for assessing the sustainability of resilient floor coverings. Sustainability-related information can inform a manufacturer's decisions about supply chain modifications, product(s) content changes, manufacturing adjustments, performance improvements, end-of-life options, and corporate governance, with the goal of producing more sustainable products.

This Standard addresses environmental performance and sustainability attributes (including social aspects) of products, and provides a means to track incremental changes to the products' sustainability profile. This Standard is intended to provide a consistent framework in which to compare and assess the sustainable nature of different products within the context of performing similar functions.

This Standard is intended to be used primarily by product(s) manufacturers interested in understanding the sustainability performance of their product(s). Independent auditors, certification bodies and environmental labeling organizations are also potential users of this Standard for its use in supporting market-based environmental and sustainability claims. This Standard may also be used by purchasers and consumers who wish to ensure that manufacturers are accurately declaring the sustainable nature of their products.

#### **1.2 Scope**

This Standard establishes a consistent approach to the evaluation and determination of environmentally preferable and sustainable resilient floor coverings. The Standard includes relevant criteria across the product(s) life cycle from raw material extraction through manufacturing, use, and end-of-life management.

As used in this Standard, "resilient floor coverings" includes, but is not limited to, vinyl tile, vinyl composition tile, sheet vinyl, rubber, polymeric, and linoleum flooring products in which the wearing surface is non-textile. Also included are flooring accessories such as wall base, moldings, and stair treads. The Standard is applicable to products manufactured in one facility or multiple facilities, one country or multiple countries.