



*NSF International Standard /
American National Standard*

NSF/ANSI 347 - 2012

Sustainability Assessment for Single Ply Roofing Membranes



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 Roofing Membranes
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 International Standard/
American National Standard
for Sustainability –

Sustainability assessment for single ply roofing membranes

Standard Developer

NSF International

NSF International Board of Directors

Designated as an ANSI Standard

February 14, 2012

American National Standards Institute

Prepared by
The NSF Joint Committee on Roofing Membranes

Recommended for Adoption by
The NSF Council of Public Health Consultants

Adopted by
NSF International
February 2012

Published by

NSF International
PO 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 347 – 2012.”

Copyright 2012 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	Scope	1
1.2	Principles	2
2	References	2
2.1	Normative references	2
2.2	Informational references	5
3	Definitions	7
4	Conformance, evaluation, and assessment criteria	8
4.1	Elements	8
4.2	Prerequisites	9
4.3	Scoring methodology	9
4.4	Procedures for labeling and reporting	9
5	Product design	10
5.1	Purpose	10
5.2	Enlightened design process	10
5.3	Environmentally sustainable material inputs	11
5.4	Chemicals of concern	12
5.5	Informed selection of suppliers	14
5.6	Product recyclability into durable products (maximum 2 points)	15
5.7	Post-consumer single ply roofing membrane reclamation (maximum 3 points)	15
5.8	Pre-consumer single ply roofing membrane reclamation (maximum 2 points)	16
6	Product manufacturing	16
6.1	Purpose	16
6.2	Environmental policy and management	16
6.3	Conservation of energy resources	17
6.4	Management of water resources	18
6.5	Optimization of material resources	19
6.6	Protection of air resources	19
7	Membrane durability	20
7.1	Purpose	20
7.2	Fitness of purpose	20
7.3	Durability (maximum 12 points)	20
7.4	Membrane surface contribution	21
7.5	Process based	21
8	Corporate governance	23
8.1	Purpose	23
8.2	General public disclosures	23
8.3	Employer / employee responsibility	24
8.4	Roofing contractor installation training (maximum 1 point)	25
8.5	Design professional outreach and education (maximum 1 point)	25
8.6	Standards and code organizations participation (maximum 1 point)	25
8.7	Community responsibility	25
9	Innovation	26
9.1	Purpose	26
9.2	General criteria (maximum 7 points)	26

Annex A	A1
Annex B	B1
B.1 General	B1
B.2 Product certification process	B1
B.3 Suggested requirements for certifying organizations	B2
Annex C	C1
C.1 Guidance	C1

Foreword²

This American National Standard, NSF/ANSI 347 Sustainability Assessment for Single Ply Roofing Membranes Standard, has been developed as part of the ongoing efforts of a number of interested parties to document and improve the sustainability profile of roofing membranes using established and/or advanced scientific principles, practices, materials, and standards. Stakeholders involved in developing the Standard included membrane manufacturers, industry consultants, architects and engineers that specify roofing materials, trade associations, national regulatory agencies that regulate either environmental practices or roofing specifications, and non-governmental organizations. The scope of this standard includes, but is not limited to, Ethylene Propylene Diene Terpolymer (EPDM), Ketone Ethylene Ester (KEE), Poly Vinyl Chloride (PVC), Thermoplastic Polyolefin (TPO), and Polyisobutylene (PIB) products. The standard is applicable to products manufactured in one or multiple facilities, and in one or multiple countries.

The purpose of the Sustainability Assessment for Single Ply Roofing Membranes Standard is to establish consistent requirements for sustainable roofing membrane products. These requirements are intended to form the basis of conformity assessment programs, such as third-party certification or registration.

The Sustainability Assessment for Single Ply Roofing Membranes Standard has been designed, in part, to meet the following goals:

- Facilitate communication of information that is verifiable and accurate about the environmental and social impacts associated with the production and use of Single Ply Roofing Membranes.
- 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.
- Provide framework for assessing the sustainability attributes of Single Ply Roofing Membranes that allows the tracking of incremental changes in the product over time and the comparison of different products that perform similar functions.

These requirements are intended to form the basis of conformity assessment programs, such as third-party certification or registration.

Comments on this Standard should be sent to NSF International at ncss@nsf.org or c/o 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 International Standard for Sustainability –

Sustainability assessment for single ply roofing membranes

1 General

The overall purpose of this Standard is to facilitate communication of information that is verifiable and accurate, about the environmental and social impacts associated with the production and use of single ply roofing membranes. 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 continuous market-driven improvement.

This Standard is intended to 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 framework for assessing the sustainability of single ply roofing membranes. Sustainability related information should be used to guide a manufacturer's decisions about supply chain modifications, product 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 of single ply roofing membranes, and provides a means to track incremental changes to the products' sustainability profile. This Standard is intended to provide a framework to compare and assess the sustainable nature of different products performing similar functions.

This Standard is intended to be used by product manufacturers, suppliers, and others interested in understanding the sustainability performance of single ply roofing membranes. 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 should also be used by purchasers and consumers, including building owners and designers who wish to ensure the accuracy of manufacturer claims relative to the sustainable nature of their products.

1.1 Scope

This Standard establishes an approach to the evaluation of the sustainability of single ply roofing membranes. The Standard includes criteria across the product life cycle from raw material extraction through manufacturing, use, and end-of-life management.

As used in this Standard, "Single Ply Roofing Membrane" includes, but is not limited to, EPDM (Ethylene Propylene Diene Terpolymer), KEE (Ketone Ethylene Ester), PVC (Poly (Vinyl Chloride), TPO (Thermoplastic Polyolefin), and PIB (Polyisobutylene) products. The Standard is applicable to products manufactured in one facility or multiple facilities, one country or multiple countries.