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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
January 26, 2015

American National Standards Institute
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Foreword

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 revision:

**Issue 8 – Normative References and Environmental Product Declarations**

This ballot added language to clarify when a reference is undated the most recent version is the default and also addressed section 5.2.4 to promote a company’s ability to receive recognition that has developed an EPD to the flooring PCR.

Suggestions for improvement of this Standard are welcome. This Standard is maintained on a Continuous Maintenance schedule and can be opened for comment at any time. Comments should be sent to Chair, Joint Committee on Resilient Flooring, NSF International, National Center for Sustainability Standards at ncssa@nsf.org, or P.O. Box 130140, Ann Arbor, Michigan 48113-0140, USA.

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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.
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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.
1.3 Principles

This standard practice was developed based on the following important principles.

1.3.1 Life cycle consideration

The life cycle of a product(s) ranges from activities associated with the production and delivery of raw materials or generation of natural resources to the final disposal. This Standard was developed with consideration of the life cycle of resilient floor coverings to help identify the appropriate and relevant characteristics and criteria to be used in evaluating a product’s environmental preferability and sustainability.

1.3.2 Relationship with legislation

A precondition for claiming conformance with this Standard shall be compliance with environmental and other relevant regulations.

1.3.3 International trade aspects

The procedures and requirements included within this Standard have not been prepared, adopted, or applied with a view to creating unnecessary obstacles to international trade.

1.3.4 Scientific basis

The criteria contained in this Standard were developed and selected based on sound scientific and engineering principles intended to produce accurate, reproducible results.

1.3.5 Product innovation

Use of this Standard is intended to support, not inhibit, innovation that maintains or has the potential to improve environmental and social accountability performance.

2 Normative References

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. The most recent published edition of the document shall be used for undated references.

Age Discrimination in Employment Act of 1967

ASTM D6400-12. Standard Specification for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities


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4 ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. <www.astm.org>


ASTM F1861-08. Standard Specification for Resilient Wall Base


ASTM F2169-12. Specification for Resilient Stair Treads


California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 8.5 Article 2, Consumer Products, Sections 94507-94517, The California Consumer Products Regulations –Consumer Products


California Office of Environmental Health Hazard Assessment (OEHHA)

California Proposition 65, Safe Drinking Water and Toxic Enforcement Act of 1986

Civil Rights Act of 1991

CML, Leiden University Institute of Environmental Sciences, Chain Management by Life Cycle Assessment (CMLCA)


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5 California Air Resources Board 1001 I Street, P. O. Box 2815, Sacramento, CA 95812 <www.arb.ca.gov/consprod/regs/regs.htm>
6 CalRecycle, 801 K Street, MS 19-01, Sacramento, CA 95814 <www.calrecycle.ca.gov/Greenbuilding/Specs/Section01350/>
7 California Office of Environmental Health Hazard Assessment - Air, P.O. Box 4010, Sacramento, CCA 95812-4010, <www.oehha.ca.gov/air/chronic_rels/>
8 California Office of Environmental Health Hazard Assessment - Proposition 65, P. O. Box 4010, Sacramento, CA 95812-4010 <www.oehha.ca.gov/prop65/prop65_list/Newlist.html>
9 Leiden University Institute of Environmental Sciences (CML), P. O. Box 9518 2300 RA Leiden, The Netherlands <www.leidenuniv.nl/interfac/cml/ssp/index.html>
EN 14565, Specification for Resilient Floor Coverings based on Synthetic Thermoplastic Polymers

Equal Pay Act of 1963

Global Reporting Initiative (GRI), G3 Reporting Framework

ILO C29 Forced Labour Convention, 1930

ILO C105 Abolition of Forced Labour Convention, 1957

ILO C182 Worst Forms of Child Labour Convention, 1999

International Agency on the Research of Cancer (IARC)

ISO 14001, 2004, Environmental management systems – Requirements with guidance for use

ISO 14021, 1999, Environmental labels and declarations – Self-declared environmental claims (Type II environmental labeling)

ISO 14040, 2006, Environmental management – Life cycle assessment – Principles and framework


ISO/TR 14049:2000, Environmental management – Life cycle assessment – Examples of application of ISO 14041 to goal and scope definition and inventory analysis

ISO 14064:1, 2006, Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

ISO 14064:2, 2006(E), Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements


ISO/IEC DIS 17065, Conformity assessment – Requirements for bodies certifying products, processes and services

Minnesota Pollution Control Agency, Design for the Environment ToolKit

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11 British Standards Group (BSI), 389 Chiswick High Road, London, W4 4AL, UK <www.bsi-global.com>
12 Global Reporting Initiative, Keizersgracht 209 1016 DT Amsterdam, The Netherlands <www.globalreporting.org/Home>
13 International Labour Office, 4 route des Morillons CH-1211 Geneva 22, Switzerland <www.ilo.org>
15 International Organization for Standardization (ISO), 1 ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland <www.iso.org>
16 Minnesota Pollution Control Agency, 520 Lafayette Road, St. Paul, MN 55155-4194 <www.pca.state.mn.us/>
National Institute of Standards and Technology (NIST) *Building for Environmental and Economic Sustainability (BEES)* software

National Toxicology Program (NTP) *Report on Carcinogens*  

Occupational Health and Safety Administration (OSHA)  

Rehabilitation Act of 1973  

SA8000, *Social Accountability SA8000*  

South Coast Air Quality Management District Rule 1168, *Adhesive and Sealant Applications*  

South Coast Air Quality Management District Rule 1113, *Architectural Coatings*  

Titles I and V of the Americans with Disabilities Act of 1990 (ADA)  

Title VII of the Civil Rights Act of 1964  

United Nations Framework Convention on Climate Change, *Kyoto protocol*  

United States Environmental Protection Agency (USEPA) *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*  

United States Environmental Protection Agency (USEPA) *Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI)*  

United States Environmental Protection Agency (USEPA) *Toxics Release Inventory (TRI) Program* 

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17 Building and Fire Research Laboratory NIST, 100 Bureau Drive, Stop 8600, Gaithersburg, MD 20899-8600 <www.bfrl.nist.gov/oae/software/bees.html>  
18 National Toxicology Program (NTP) Report on Carcinogens, P.O. Box 12233, MD K2-14, Research Triangle Park, NC USA 27709 <http://ntp.niehs.nih.gov>  
22 South Coast Air Quality Management District – Regulation 1113, 21865 Copley Dr., Diamond Bar, CA 91765 <www.aqmd.gov/rules/reg/reg11/r1113.pdf>  
23 United Nations Framework Convention on Climate Change, P. O. Box 260124 D-53153, Bonn, Germany <http://unfccc.int>  
25 U. S. Environmental Protection Agency, PA Office of Research and Development National Risk Management Research Laboratory, Sustainable Technology Division – Systems Analysis Branch (MS-466), 26 West Martin Luther King Drive, Cincinnati, OH 45268 <www.epa.gov/nrmrl/std/traci/traci.html>  
3 Definitions

3.1 bio-based resource: A product(s) component (other than food or feed) that is derived in whole or significant part from biological production operations, such as agriculture, forestry, or fisheries. A bio-based resource can be exhausted if improperly managed. However, a bio-based resource can be produced indefinitely with proper stewardship.

3.2 environmentally preferable: A product(s), material or content that has a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.

3.4 key supplier: A supplier of a material ingredient that comprises at least 5% by weight of a particular finished product(s), or that contains one or more chemicals of concern as defined by 5.4.1a – 5.4.1e.

3.5 key supplies: Includes material such as cartons, packaging, raw materials, etc. from a key supplier.

3.6 life cycle assessment (LCA): A systematic evaluation of the environmental impact of a product(s) that may include all stages of its life cycle.

3.7 life cycle impact assessment (LCIA): A phase of life-cycle assessment aimed at understanding and evaluating the magnitude and significance of the potential environmental impact categories.

3.8 life cycle inventory analysis: A phase of life-cycle assessment involving compilation and quantification of inputs and outputs for a given product(s) system may include all stages of its life cycle.

3.9 local employment: Employment of workers who reside within 15 mi of the primary place of employment, or can access the primary place of employment within 30 min on public transit or by car pool.

3.10 post-consumer recycled material: Waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of a product(s), which is no longer used for its intended purpose (see ISO 14021).

3.11 pre-consumer recycled material: Material diverted from the waste stream during the manufacturing process. This term excludes reutilized materials such as rework, regrind, and scrap that are capable of being reclaimed within the same process that generated them.

3.12 registration: A procedure by which an independent third party gives written assurance that a system conforms to specified requirements, mandatory or voluntary, regulated or non-regulated.

3.13 resilient floor covering: A floor surfacing material made in sheet or tile form, or formed in place as a seamless material that has wearing surface that is not textile. Examples of resilient floor coverings include, but are 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.
4 Conformance, evaluation, and assessment criteria

4.1 Elements

This sustainability assessment standard is divided into six basic categories consisting of credits that are potentially available to organizations seeking compliance with the standard. The six categories are:

- product(s) design;
- product(s) manufacturing;
- long-term value;
- end of life management;
- corporate governance; and
- innovation.

The criteria are grouped in general conformance with a product’s life cycle, from design (including raw material selection and their production) to manufacturing, use, and end of life. Additionally, criteria related to corporate governance are included to address issues of social responsibility.

4.2 Prerequisites

Each category has one or more prerequisites that are required, as the minimum performance against the Standard. Users shall meet all prerequisites in each category in order to proceed. Once all prerequisites are met, users may achieve optional points toward multiple levels of achievement in each category by meeting specified performance requirements. Prerequisites by category include:

For product(s) design:
- 5.2.1 Environmental considerations in design
- 5.3.1 Inventory of material inputs
- 5.4.1 Identification of use of chemicals of concern

For product(s) manufacturing:
- 6.2.1 Environmental system policy
- 6.3.1 Energy inventory
- 6.4.1 Inventory of water use

For long-term value:
- 7.2.1 Recommended usage
- 7.3.1 Minimal long term indoor VOC emissions

For corporate governance:
- 9.3.4 Prevention of discrimination
- 9.3.5 Prohibitions on forced labor
- 9.3.6 Prohibitions on child labor

4.3 Scoring methodology

For users choosing to rate the sustainability performance of products evaluated in accordance with this Standard, a point-based scoring system has been developed. Presented in Annex A, this system is based on a 90-point scale (excluding optional innovation credits), with the different points for the various assessment criteria allocated as follows:

a) Product(s) design – 30 points
b) Product(s) manufacturing – 29 points
c) Long term value – 9 points
d) End of life management – 10 points
e) Corporate governance – 12 points
f) Innovation – maximum of 10 points

4.4 Procedures for labeling and reporting

4.4.1 Basic principle

The methodology for assessing whether a product(s) conforms to the product(s) environmental and social responsibility criteria and for verifying ongoing conformance shall be documented and be of sufficient detail to provide consumer confidence that this Standard has been correctly applied.

4.4.2 Declaration of level of conformance/labeling

Achievement of conformance with the prerequisite criteria/points shall permit users to make the following product(s) declarations:

a) Sustainable product(s) achievement – Conformant: Minimum 25 points
b) Sustainable product(s) achievement – Silver: Minimum 35 points
c) Sustainable product(s) achievement – Gold: Minimum 45 points
d) Sustainable product(s) achievement – Platinum: Minimum 60 points

4.4.3 Public reporting

Users making a declaration of conformance should report this in a publicly available document.

4.4.4 Monitoring and reevaluation

Documented procedures shall exist that demonstrate measurement of, and the regular monitoring of continued conformance to this Standard.

4.4.5 Non-conformance and corrective and preventative action

Authority shall be assigned and supported by corporate management for identifying and investigating nonconformance, and taking the appropriate action. In establishing and maintaining procedures for investigating and correcting non-conformance, the manufacturer shall include these basic elements:

a) Identify the cause of the non-conformance;
b) Identify and implement the necessary corrective action;
c) Implement or modify controls necessary to avoid repetition of the non-conformance; and
d) Record any changes in written procedures resulting from the corrective action.

4.4.6 Certification

Information on suggested parameters for certification is provided in Annex B.

5 Product(s) design

5.1 Purpose

The purpose of this section is to encourage manufacturers to integrate environmental and life-cycle thinking into the product(s) design process.
5.2 Enlightened design process

The criteria in this section are intended to encourage the understanding of environmental impacts of products by the product designers and developers.

5.2.1 Prerequisite – Environmental considerations in design

The manufacturer shall implement an environmental assessment program within the product(s) design and development system. The program shall consider the environmental attributes and impacts of its products and packaging, including issues such as designing for longevity, designing for reusability, and designing for recyclability and/or compostability. The environmental assessment program shall consider environmental attributes and impacts of products and packaging across the entire product(s) life cycle (e.g., raw material extraction, manufacturing, use, and end of life).

5.2.2 Life cycle assessment (LCA) or US EPA’s Design for Environment (DfE) assessment

By demonstrating that one of the following actions below was completed within the past three years relative to the product(s) undergoing assessment, the manufacturer shall receive points as detailed below. A maximum of three points shall be awarded for 5.2.2.

The manufacturer shall receive one point if it completes a DfE (or equivalent) assessment.16

The manufacturer shall receive two points if it completes a cradle-to-gate or cradle-to-grave Life Cycle Assessment conforming to ISO 14040 / ISO 14044 standards on life cycle assessment. Life cycle impact assessment factors shall be taken from publicly available sources such as USEPA Tools for the Reduction and Assessment of Chemical (TRACI)25 and other Environmental Impacts or CMLCA (Institute of Environmental Sciences, Leiden University).25 At a minimum, the following life cycle impact categories shall be characterized:

- Global Warming
- Acidification
- Ozone depletion
- Photochemical Smog Formation
- Eutrophication

5.2.3 Life cycle assessment improvement

The manufacturer shall receive one point for demonstrating an impact reduction of at least 10% from the baseline in a minimum of two impact categories contained in the USEPA TRACI25 model. The baseline established by each manufacturer shall be no more than five years prior to the current product certification year.

5.2.3.1 Establishing a baseline

For the purposes of 5.2.3, a baseline shall be chosen using one of the following:

- same product construction (improvements within the same product construction’s design, processing, materials, etc.);
- same product family (improvements in design and development within the same family of products as a trend towards sustainability);
- the product that was/is being replaced (improvements in new products meant to replace older, less sustainable versions);
most popular product from sales perspective within the same product category (new product developments compared to the product with the most market share); or

average construction of all products sold (as a general trend, new products being developed are intended to improve and drive down the overall impacts).

Within each option, the sales weighted average of product constructions that comprise the baseline should be chosen as representing the baseline. No baseline should be taken that is prior to five years before the time of submission of the product for certification. If no baseline is available for a specific company and specific product, then no points shall be claimed in this section until such a baseline is established.

5.2.4 Environmental product declarations

The manufacturer shall receive one point if it completes an Environmental Product Declaration (EPD) conducted in accordance with ISO 14025 following the requirements of an open consultative-based Product Category Rule (PCR). The EPD shall be validated by an independent third party for the product undergoing assessment.

5.3 Environmentally sustainable material inputs

The criteria in this section are intended to ensure that the manufacturer is fully informed as to the material composition of its products, including packaging and recommended adhesive systems. The criteria are also meant to encourage the selection and use of component materials manufactured wholly or in part from environmentally sustainable inputs such as recycled materials (post-consumer and post-industrial) and bio-based resources.

5.3.1 Prerequisite – Inventory of material inputs

The manufacturer shall complete an inventory of material inputs for the product(s) undergoing assessment (including packaging and recommended adhesive system). At a minimum, the inventory shall report inputs on using Chemical Abstract Service (CAS) nomenclature, with inputs classified as hazardous declared to a minimum 1000 ppm (0.1%) threshold and other inputs to 10,000 ppm (1.0%) threshold. The manufacturer shall classify the materials by their environmentally sustainable nature (e.g., recycled [pre- or post-consumer], bio-based, environmentally preferable).

5.3.2 Environmentally sustainable inputs – product(s)

For the product(s) undergoing assessment, the manufacturer shall declare the total quantity of environmentally sustainable inputs (e.g., recycled [pre- or post-consumer], or bio-based), specified on a percentage weight basis. The manufacturer shall receive one point per 5.0% environmentally sustainable content of the following:

- bio-based resource content; and
- recycled content quantity, which shall be calculated as follows:
  - post-consumer recycled content shall be valued at 100% weight basis; and
  - pre-consumer recycled content shall be valued at 50% weight basis.

A maximum of eight points shall be awarded for 5.3.2.

5.3.3 Environmentally sustainable inputs – packaging

For the product(s) undergoing assessment, the manufacturer shall declare the total quantity of environmentally sustainable inputs of the packaging materials specified on a percentage weight basis.
The manufacturer shall receive either one point for 50% to 74% post-consumer recycled content or bio-based paper products, or two points for 75% or greater post-consumer recycled content.

5.4 Human and ecologically friendly inputs

The criteria in this section are intended to ensure that the manufacturer is fully informed as to the human and ecological hazards associated with the chemical composition of its products, including the recommended adhesive systems. These criteria are also meant to encourage the use of environmentally compatible chemicals while minimizing and eliminating the use of chemicals of concern.

5.4.1 Prerequisite – Identification of use of chemicals of concern

The manufacturer shall create a report classifying the raw material inputs for the product(s) undergoing assessment, including recommended adhesive, by the chemical hazard classifications listed below. In addition, PBT lists are included in Annex C (informational). At a minimum, the manufacturer shall report whether the raw material input comprising at least 1000 ppm of the product(s) or adhesive is classified as any of the following:

a) International Agency on the Research of Cancer (IARC)\textsuperscript{14} Group 1 – \textit{Carcinogenic to Humans} and Group 2A – \textit{Probably Carcinogenic to Humans};

b) National Toxicology Program (NTP)\textsuperscript{18} – Known Human Carcinogen and Reasonably Anticipated Carcinogenic;

c) Occupational Safety and Health Administration (OSHA)\textsuperscript{19} – Regulated Toxic Metal or Carcinogen;

d) California Proposition 65\textsuperscript{8} – Known to cause cancer or reproductive toxicity;

e) USEPA Toxic Release Inventory (TRI)\textsuperscript{26} persistent, bioaccumulative, and toxic (PBT) chemicals – Known persistent, bioaccumulative, and toxic chemicals and compounds (a subset of the USEPA TRI list of chemicals and compounds); or

f) USEPA TRI\textsuperscript{26} – Complete USEPA toxic chemical list (including known PBT chemicals and compounds), RCRA Waste Minimization list, the U.S. – Canada Binational list, the Stockholm Convention POPs list, and the EC RoHS list Article 4 (1).

\textbf{NOTE} – This raw material input includes only ingredients added intentionally.

\textbf{NOTE} – All references above are anticipated to be the most current version.

5.4.2 Minimization of known chemicals of concern in product

The manufacturer shall receive one point for demonstrating raw material input information to the manufacturer and process chemistry under the control of the manufacturer that the product(s) does not contain any known carcinogen as listed in 5.4.1a – 5.4.1d at levels equal or greater than 1000 ppm (0.1%) or the level that requires labeling under California Proposition 65\textsuperscript{8}, whichever is higher.

The manufacturer shall receive one point for demonstrating raw material input information to the manufacturer and process chemistry under the control of the manufacturer that the product(s) does not contain any known reproductive toxicant as listed in 5.4.1d at levels equal or greater than 1000 ppm (0.1%) or the level that requires labeling under California Proposition 65\textsuperscript{8}, whichever is higher.

The manufacturer shall receive one point for demonstrating raw material input information to the manufacturer and process chemistry under the control of the manufacturer that the product(s) does not contain any known toxic metal as listed in 5.4.1c at levels equal or greater than 1000 ppm (0.1%).
The manufacturer shall receive one point for demonstrating raw material input information to the manufacturer and process chemistry under the control of the manufacturer that the product(s) does not contain any known PBT chemical or compound as listed in 5.4.1e at levels equal or greater than 1000 ppm (0.1%).

The manufacturer shall receive one point for demonstrating raw material input information to the manufacturer and process chemistry under the control of the manufacturer that the product(s) does not contain any other toxic chemical as listed in 5.4.1f at levels equal or greater than 1000 ppm (0.1%).

A maximum of five points shall be awarded for 5.4.2.

5.4.3 Minimization of known chemicals of concern in recommended adhesive

The manufacturer shall receive one point for demonstrating that no component listed as a carcinogen or reproductive toxicant as defined in 5.4.1a – 5.4.1d comprises more than 0.1% (1000 ppm) of the total mass of the adhesive. In situations where there is proprietary information, a statement from the supplier stating the chemicals used are not on the lists in 5.4.3 will demonstrate conformance.

5.4.4 Elimination of chemicals with upstream concerns

For those material inputs present in the product(s) at equal or greater than 5% (five percent), the manufacturer shall receive:

- one point for demonstrating that one step upstream of the life cycle manufacturing boundaries does not release known PBT chemicals or compounds (see 5.4.1e) at or above USEPA CERCLA\(^{24}\) Reportable Quantity (RQ); and/or

- one point for demonstrating that one step upstream of the life cycle manufacturing boundaries does not release any listed TRI chemicals or compounds (see 5.4.1f) at or above USEPA CERCLA\(^{24}\) Reportable Quantity (RQ).

5.5 Informed selection of suppliers

The intent of the criteria within this section is to ensure that manufacturers are aware of the environmental performance and social accountability of their supply chains.

5.5.1 Supplier environmental disclosure

The manufacturer shall receive one point for documenting the implementation of a key supplier environmental disclosure process requiring supplier disclosure of environmental performance information including, at a minimum:

- compliance (or lack thereof) with local, regional, and national environmental requirements and report of any outstanding violations or issues of non-compliance;

- presence (or absence) of a documented environmental management system prepared and operated in general accordance with ISO 14001\(^{15}\);

- release of reportable quantities of TRI PBTs;

- use (or lack thereof) of renewable energy supplies; and

- provide evidence of greenhouse gas emissions tracking.
5.5.2 Supplier environmental performance disclosure

The manufacturer shall document the percent of its key suppliers that have satisfactorily conformed to the company’s environmental disclosure requirements as described in 5.5.1. The manufacturer shall receive one point if 50-74% of its key suppliers have conformed, or receive two points if 75% or more of its key suppliers have conformed.

5.5.3 Supplier social accountability

The manufacturer shall receive one point for documenting the implementation of a supplier social accountability disclosure process requiring supplier disclosure of social accountability information including, at a minimum:

- declaration of compliance with local, regional, and national labor requirements, and report of any outstanding violations or issues of non-compliance; and
- documentation and assessment of social accountability conformance prepared in general accordance with the social indicators described in GRI\textsuperscript{12}, SA8000\textsuperscript{20}, or another comparable evaluation program.

5.5.4 Supplier social accountability disclosure

The manufacturer shall document the percent of its key suppliers that have satisfactorily conformed to the company’s social accountability disclosure requirements as described in 5.5.3. The manufacturer shall receive one point if 50-74% of its key suppliers have conformed, or receive two points if 75% or more of its key suppliers have conformed.

5.5.5 Supplier audits

The manufacturer may receive up to two points for first, second, or third party supplier audits. It shall receive one point if 10% or more of its key suppliers were audited in the past five years to verify conformance with environmental or social accountability disclosure requirements. It shall receive a second point if it has conducted annual reviews of 10% or more of its key suppliers.

6 Product(s) manufacturing

6.1 Purpose

The criteria in this section are intended to encourage manufacturers to quantify the environmental impacts from their manufacturing, and then act to reduce or remove those impacts.

6.2 Environmental policy and management

The intent of these criteria is to ensure that manufacturers have a basis from which to actualize strategic environmental management within the organization.

6.2.1 Prerequisite – Environmental policy

The manufacturer shall implement an environmental management policy. The environmental management policy should include a commitment to continual improvement and pollution prevention, plus showing assurance of compliance with applicable regulations and other legal environmental requirements. Policy shall be communicated to all persons working for or on behalf of the organization, and is made publicly available.
6.2.2 Registered Environmental Management System (EMS)

The manufacturer shall receive three points for documenting that its EMS system is certified with ISO 14001\textsuperscript{15} by a third party certifier.

6.2.3 Maintaining environmental attributes through manufacturing

The manufacturer shall receive one point for implementing a tracking system to ensure that design criteria specified in its EMS system are not cost-engineered or otherwise modified during the manufacturing process.

6.3 Conservation of energy resources

A manufacturer can improve its environmental impact by means of its energy initiatives: both reduction of consumption (i.e., conservation) and selection of source (i.e., renewability). The intent of the criteria in this section is to encourage both approaches in order to reduce the environmental impacts from energy production and consumption, including resource depletion, greenhouse gas emissions, and hazardous air pollutants.

6.3.1 Prerequisite – Energy inventory

The manufacturer shall complete an inventory of energy use that encompasses production by quantity and source of energy. The manufacturer shall also identify type and distance of transportation of raw materials from key suppliers.

6.3.2 Reduction of environmental impact of energy input

The manufacturer shall demonstrate overall reduction in the environmental impact of its energy inputs on a unit product(s) basis, facility basis, or total manufacturing operation of compliant or similar product(s). Reduction shall be calculated from 2000 or later. Impact reduction shall be quantified as follows:

\begin{itemize}
  \item measured reductions in energy consumption (including that supplied as direct fuel, electricity, and/or steam); and/or
  \item conversion of energy inputs from non-renewable resources (e.g., fossil fuels) to renewable alternatives.
\end{itemize}

The manufacturer shall receive points according to table 6.1 for a maximum of ten points for 6.3.2.

\begin{table}[h]
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\begin{tabular}{|c|c|}
\hline
Percent reduction threshold & Points awarded \\
\hline
$\geq 1\%$ & 2 \\
$\geq 2\%$ & 3 \\
$\geq 5\%$ & 4 \\
$\geq 8\%$ & 5 \\
$\geq 10\%$ & 6 \\
$\geq 15\%$ & 7 \\
$\geq 20\%$ & 8 \\
$\geq 25\%$ & 9 \\
$\geq 35\%$ & 10 \\
\hline
\end{tabular}
\caption{Manufacturers use of renewable energy or energy reduction of total energy production requirements}
\end{table}
6.4 Management of water resources

The intent of the criteria within this section is to encourage the conservation of water resources and protection of water quality.

6.4.1 Prerequisite – Water use inventory

The manufacturer shall complete an inventory of water use including identification of quantity of water used, quantity consumed (e.g., loss through evaporation), and sources (e.g., municipal potable, direct capture, on-site wells, reclaimed wastewater.).

6.4.2 Reduced water consumption

The manufacturer shall receive one point on a per-unit basis from 2000 or later:

- an average 1% water reduction per year over a given 5 year period; or
- 5% reduction of water consumption over the last ten years; or
- significant reduction for a lesser multi-year time period that obviously results in either of the above. For this 3rd option to be considered; the following shall be documented:
  - 3 or 4 years of data; and
  - the manufacturer shall specifically demonstrate how this ‘obvious reduction’ is occurring; by documenting the process change or technology advance that is causing the notable reductions.

6.4.3 Water quality

The manufacturer shall document that wastewater released either to a publicly owned treatment works (POTW), or directly to the environment, is of a quality equal to or better than the quality of the supplied water according to established standards. A manufacturer can earn either one or two points, as detailed below:

- the manufacturer shall receive one point if the wastewater’s quality meets tertiary wastewater treatment standards; or
- the manufacturer shall receive two points if the wastewater’s quality meets drinking water level standards.

6.5 Optimization of material resources

Inefficient materials selection, supplier delivery, production processes, and warehousing operations can lead to high levels of waste generation and corresponding losses in production yields. The criteria in this section are intended to encourage the maximization of yield from product(s) raw materials and to minimize the generation of waste materials during production.

6.5.1 Waste minimization program

The manufacturer shall receive one point for having a documented and operational waste minimization program that includes quantification of waste generation rate.

NOTE – For the purposes of 6.5.1, “waste” is defined as material that must be managed via landfilling or incineration.
6.5.2 Manufacturing waste minimization

The manufacturer shall receive either:

- one point for demonstrating a waste generation reduction rate of at least 10% over the previous ten years; or
- two points for demonstrating an annual average total waste generation rate of less than 2% on a weight basis.

A maximum of two points shall be awarded for 6.5.2.

6.5.3 Packaging minimization

The manufacturer shall use packaging and delivery options designed to minimize waste generation during transport and installation of product(s). It shall receive one point if a product’s packaging weight is documented as constituting less than 2% of the product’s weight.

Where pallets are normally used in shipment of flooring product(s), including the pallet weight in the 2% requirement is waived provided a recycling or reclamation program has been documented for the used pallets.

6.6 Protection of air resources

The criteria in this section are intended to minimize or eliminate the production and release of greenhouse gases and of known PBT air contaminants.

6.6.1 Greenhouse gas (GHG) inventory

The manufacturer shall receive two points for completing a greenhouse gas inventory that includes manufacturing operations in accordance with ISO 1406415 or an equivalent standard. Initial year for the GHG inventory shall be 2000 or later.

6.6.2 Greenhouse gas reduction goals

The manufacturer shall receive one point for establishing greenhouse gas reduction targets equal to an average of 1% per year consistent with the baseline year selected in 6.6.1

6.6.3 Greenhouse gas reductions (not offsets)

The manufacturer shall demonstrate a reduction in GHG inventory on a per unit production basis. Consistent boundaries shall be used for the current and baseline years. The baseline year shall be consistent with baseline year selected in 6.6.1.

The manufacturer shall receive one point for each 10% reduction. A maximum of three points will be awarded for 6.6.3.

6.6.4 PBT reductions

The manufacturer shall demonstrate that emissions of PBT compounds are below reporting levels as defined under the CERCLA RQ24. The manufacturer shall receive one point for achieving this goal in relation to emissions from its on-site activities, and/or one point for achieving the goal in relation to emissions from its supplied electricity source/s, for a maximum of two total points.
7 Long-term value

7.1 Purpose

The criteria in this section are intended to encourage manufacturers to maximize product(s) longevity. The longevity of a product(s) is dependent on its durability and performance characteristics and can reduce the replacement cycle and the resulting impact on the environment. Reclamation at the end of a product’s life also reduces the environmental impact.

7.2 Fitness of purpose

The criteria in this section are intended to demonstrate that the product(s) performs at or above recognized industry performance standards, in order to ensure that the incorporation of positive environmental attributes has not been undermined by lower-quality performance. These criteria are also meant to encourage product(s) reclamation, thereby conserving material resources and limiting the responsibility of future generations to manage today’s wastes.

7.2.1 Prerequisite – Recommended usage

The manufacturer shall confirm that their resilient floor covering products are designed and manufactured to be durable and long-lasting under conditions of intended use. Manufacturer shall demonstrate a continuous effort to communicate relevant design and product(s) selection criteria in order to assure intended use and longest possible service life.

7.2.2 Durability

The manufacturer shall receive four points for providing documentation showing that the product(s) performs at or above the following performance requirements as described in these industry-recognized standards that are relevant to the specific product(s):

- Vinyl Composition Floor Tile – ASTM F1066;
- Sheet Vinyl Flooring – ASTM F1303 or ASTM F1913;
- Vinyl Tile – ASTM F1700;
- Rubber Sheet Flooring – ASTM F1859 or ASTM F1860;
- Rubber Tile – ASTM F1344;
- Linoleum Sheet Flooring – ASTM F2034;
- Linoleum Tile – ASTM F2195, and
- Polymeric Flooring – EN 14565;
- Standard Specification for Resilient Wall Base – ASTM F1861;

NOTE – Chemical composition and material requirements are not applicable to this credit. Manufacturer’s most recent test reports and test results for the product seeking certification may be from an internal or external laboratory.

7.3 Protection of indoor air quality

The intent of the criteria in this section is to demonstrate that the product(s) and its associated infrastructure (e.g., its recommended adhesives and sealants) do not release chemicals of concern or provide a pathway for other vectors that are potentially irritating and/or harmful to installers and occupants.

7.3.1 Prerequisite – Minimal long-term indoor volatile organic compound (VOC) emissions

The manufacturer shall demonstrate that the maximum concentration for any chemical emitted at 96 h in emissions tests (following a 10 d conditioning period) shall not result in a modeled indoor air
concentration greater than half of the chronic reference exposure level (CREL) established by California Office of Environmental Health Hazard Assessment (OEHHA)\textsuperscript{7}. Concentration levels for formaldehyde and acetaldehyde are established separately. Testing shall be performed in accordance with Specification 01350\textsuperscript{6}. Concentration level for formaldehyde is determined by Section 4 of Specification 01350\textsuperscript{6} and acetaldehyde is determined by Table 4-1 of Specification 01350\textsuperscript{6}.

7.3.2 The manufacturer shall receive one point by annually tracking the TVOC emissions of the finished flooring product and showing that the TVOC level has not exceeded its baseline value (defined below) by more than 500 µg/m\textsuperscript{3} as determined for the office model in Specification 01350\textsuperscript{6}. TVOC emissions shall be measured in accordance with Section 3 of Specification 01350\textsuperscript{6}. If the test result for the current year shows that the TVOC value exceeds the baseline value by more than 500 µg/m\textsuperscript{3}, the manufacturer shall take remedial action by showing the certifying body that they have developed and implemented a plan to reduce the overall emissions from the product. A product's baseline TVOC value shall be the lowest TVOC value for the office model measured from the time the product was first entered into the program.

7.3.3 \textit{De minimis} indoor carcinogenic VOC emissions

The manufacturer shall receive one point for demonstrating that carcinogenic or reproductive toxicant VOCs are not emitted from products at levels above the Target CREL as described in Table 4-1 of Specification 01350\textsuperscript{6}.

7.3.4 Minimal short-term adhesive and sealant emissions

The manufacturer shall receive one point for demonstrating that adhesives and sealants (as applicable) recommended for use by the flooring manufacturer meet the VOC content limits established in South Coast Air Quality Management District Rule 1168\textsuperscript{21} and comply with Specification 01350\textsuperscript{6}. Testing shall be performed in accordance with Specification 01350\textsuperscript{6}.

7.4 Compatibility with green maintenance strategies

The intent of the criteria in this section is to ensure that resilient flooring products sold in the marketplace are compatible with, and encourages the use of, green maintenance strategies.

7.4.1 Elimination of chemicals of concern from cleaning products

The manufacturer shall receive one point for demonstrating that the recommended cleaning products and maintenance procedures (including stripping and resealing) do not require the use of any of the listed chemicals of concern described in 5.4.1a – 5.4.1e, nor contain those chemicals at levels equal to or greater than 1000 ppm (0.1%).

7.4.2 Control of VOC emissions from cleaning products

The manufacturer shall receive one point for demonstrating that recommended cleaning products do not exceed the maximum allowable VOC levels established for the relevant product(s) group as described in The California Consumer Products Regulations – Consumer Products, sections 94507-94517\textsuperscript{5}.

8 End of life management

8.1 Reclamation feasibility

The intent of the criteria in this section is to ensure that existing and new resilient flooring products can be collected, processed, recycled, and/or composted within the existing materials recycling infrastructure.
8.1.1 Product(s) recyclability or compostability

The manufacturer shall demonstrate that post-consumer collected material (including installation waste) meets at least one of the following criteria:

a) the material can be recycled into a different product(s) group (e.g., vinyl tile into car bumpers);

b) the material can be composted or otherwise converted into a beneficial soil amendment (e.g., gypsum, wood dust);

c) the material can be recycled into a similar product(s) (e.g., vinyl tile into vinyl tile); or

d) the material can be recycled into a complementary product(s) group (e.g., flooring: vinyl tile into carpet tile).

For the recyclability claims above, the manufacturer shall demonstrate that the recycled material can comprise at least five percent (5%) by weight of the new product(s). For the compostability claim above, the manufacturer shall demonstrate that any product(s) being composted conforms to ASTM D64004.

The manufacturer shall receive either:

– one point for conformance to 8.1.1a or 8.1.1b; or
– two points for conformance to 8.1.1c or 8.1.1d.

A maximum of two points will be awarded for 8.1.1.

8.1.2 Post-consumer collection operations

For products that have been available for sale for ten years or more, the manufacturer shall demonstrate that the product(s) (including installation waste) is being collected for recycling or composting through ongoing collection operations. For new products (e.g., those with a market presence of less than ten years), the manufacturer shall demonstrate preparation and implementation of a post-consumer collection and recovery plan. The manufacturer shall receive either one point for demonstrating conforming activities within 200 mi (321.8 km) of at least two major metropolitan areas or two points for demonstrating conforming activities for a national area.

8.2 Product(s) reclamation and stewardship

The intent of this section is to encourage the diversion of flooring materials from landfilling, and to promote the redirection of material resources into new products instead.

8.2.1 Post-consumer reclamation

The manufacturer shall document and report the product(s) post-consumer reclamation rate of products. The rate shall be calculated as follows:

\[
\text{Reclamation Rate} = \frac{\text{kgs of all post-consumer product(s) reclaimed (annually)}}{\text{kg of annual production of product(s) being certified}}
\]

The manufacturer may include any or all of the following in reclamation calculation:

– material recovered via flooring manufacturer’s on-site post-consumer collection operations and composted or recycled into new products;
8.2.2 Corporate investment in reclamation

The manufacturer shall receive points for the percent of their revenue that it commits to documented activities associated with improving the reclamation rate of its products. Points shall be awarded as follows:

- the manufacturer shall receive one point for 0.05% of their revenue invested (annual average, maximum five-year averaging);
- the manufacturer shall receive two points for 0.10% of their revenue invested (annual average, maximum five-year averaging); or
- the manufacturer shall receive three points for 0.15% or more of their revenue invested (annual average, maximum five-year averaging).

A maximum of three points shall be awarded for 8.2.2.

Qualifying activities include research and development in materials processing and new product(s) development (using reclaimed materials); purchase and installation of processing equipment to be used wholly or in part for the processing of reclaimed flooring materials, including composting grinding equipment; and other quantifiable financial support of post-consumer material collection, processing, and manufacturing activities (including ongoing labor expenses).

9 Corporate governance

9.1 Purpose

The criteria in this section are intended to encourage corporate social responsibility in the forms of providing a desirable workplace, being involved in the local community, and demonstrating financial health.

9.1.1 Manufacturer

In 9, for the purpose of manufacturer, it shall be interpreted as a parent corporation, manufacturing plant, and/or business unit.

9.2 Public commitment to sustainability

The criteria in this section are intended to demonstrate corporate and organizational leadership in public disclosure and transparency of key environmental and social accountability objectives and data.
9.2.1 Preliminary disclosure

The manufacturer shall receive one point for releasing one of the following publicly:

- annual findings under company’s registered or generally conforming ISO 14001\textsuperscript{15} EMS (plant level);
- product(s) life-cycle assessment findings through participation in the Building for Economic and Environmental Sustainability (BEES)\textsuperscript{17}, managed by the National Institute of Standards and Technology (NIST);
- product(s) life-cycle assessment findings prepared in conformance with ISO 14040\textsuperscript{15} series, and independently peer reviewed;
- the company’s social accountability performance as quantified under SA8000\textsuperscript{20} or equivalent.

The information shall be released in one of the following forms:

- part of the company’s annual report, available to all who request a copy; or
- online (e.g., downloadable from the company’s website).

9.2.2 Comprehensive disclosure (corporate level)

The manufacturer shall receive one point for demonstrating one of the following:

- public release of corporate or plant the annual sustainability report per the guidelines of the Global Reporting Initiative (GRI)\textsuperscript{12} of the United Nations Environment Program; or
- public release of the annual environmental and social accountability targets and achievements.

The information shall be released in one of the two forms described in 9.2.1.

9.3 Employer responsibility

9.3.1 Employee turnover (plant level)

The manufacturer shall receive one point for quantifying and reporting the average employee turnover rate (per year or two-year rolling average).

9.3.2 Employee injury rate (plant level)

The manufacturer shall receive one point for quantifying and declaring the average employee injury rate (per year or two-year rolling average) as required by the governing reporting agency. At a minimum, the report shall include occupational accidents, injuries, illnesses, and disease

9.3.3 Right to collective bargaining (plant level)

The manufacturer shall receive one point for demonstrating compliance with the National Labor Relations Act requirements or internationally recognized equivalent.
9.3.4 Prerequisite – Prevention of discrimination

The manufacturer shall demonstrate that it does not engage in or support discrimination in the employment process at the corporate level. Examples include but are not limited to:

- Title VII of the Civil Rights Act of 1964\(^3\) (Title VII), which prohibits employment discrimination based on race, color, religion, sex, or national origin;
- the Equal Pay Act of 1963\(^3\) (EPA), which protects men and women who perform substantially equal work in the same establishment from sex-based wage discrimination;
- the Age Discrimination in Employment Act of 1967\(^3\) (ADEA), which protects individuals who are 40 years of age or older;
- Title I and Title V of the Americans with Disabilities Act of 1990\(^3\) (ADA), which prohibit employment discrimination against qualified individuals with disabilities in the private sector, and in state and local governments;
- Sections 501 and 505 of the Rehabilitation Act of 1973\(^3\), which prohibit discrimination against qualified individuals with disabilities who work in the federal government; and
- the Civil Rights Act of 1991\(^3\), which, among other things, provides monetary damages in cases of intentional employment discrimination.

9.3.5 Prerequisite – Prohibitions on forced labor

The manufacturer shall demonstrate that it does not engage in or permit the use of forced or compulsory labor (per ILO Conventions 29\(^13\) and 105\(^13\)) at its facilities and those of its key suppliers.

9.3.6 Prerequisite – Prohibitions on child labor

The manufacturer shall demonstrate that it does not operate facilities or source key supplies that do not follow the ILO Convention 182\(^13\).

9.3.7 Living wages / remuneration (plant level)

The manufacturer shall demonstrate compliance with all applicable legal minimum standards. The manufacturer shall receive one point for demonstrating both of the following for employees/workers other than management personnel:

- wages are sufficient to meet basic needs of personnel and provide some discretionary income; and
- wages are paid directly to employees, with full disclosure of any required or authorized deductions (e.g., taxes, health care benefits, and retirement investments).

9.4 Community engagement (plant level)

9.4.1 Community financial investment

The manufacturer shall declare, as percent of net income defined in accordance with generally accepted accounting principles, the average three-year rolling monetary value provided to the communities where the majority of employees reside by means of state and local taxes paid plus direct contributions (e.g., grants and investments). Employee salaries and other employee remuneration are expressly excluded from this calculation. Thus, taxes or investments made at a state or provincial level do not
qualify for inclusion unless specifically designated for allocation to the community. The manufacturer shall receive one point for investing 10% or more of its net income to the community.

9.4.2 Employee participation

The manufacturer shall receive one point for documenting company-supported employee activities within the community. Company-supported employee activities consist of community service work performed during paid time off for that purpose, excluding activities deemed political in nature.

9.4.3 Local recruiting

The manufacturer shall receive one point for documenting net local employment (full-time equivalent basis) and local sourcing expenditures (U.S. dollars spent or equivalent) per year or three-year rolling average.

9.5 Financial leadership (corporate level)

Sustainability requires triple bottom line actions that are important to achieve social and environmental goals.

9.5.1 Profitability

The manufacturer shall receive one point for demonstrating continued year-over-year profitability.

9.5.2 Investment in research and development (corporate level)

The manufacturer shall receive one point for devoting 2.5% or more of its annual revenue to research and development activities intended to support the continuing viability of the company, including investment in emerging technologies.

9.5.3 Vendor and supplier satisfaction (plant or corporate level)

The manufacturer shall receive one point for reporting the percentage of contracts that were paid in accordance with agreed terms, excluding agreed penalty arrangements. Terms may include scheduling of payments, form of payment, and other conditions.

10 Innovation

10.1 Scope

The criteria in this section is intended to give manufacturers the opportunity to be awarded points for exceptional performance above the requirements set forth in previous sections of this Standard, and/or for innovative performance in categories not specifically addressed by this Standard. The number of points awarded shall be determined on a case-by-case basis. A maximum of ten points shall be awarded for innovation under this section.

10.2 Innovation credit

A manufacturer shall receive up to ten innovation points for exceptional performance above the requirements set by this Standard and/or for the development of new technologies that result in innovative performance not specifically addressed by this Standard. These innovation points are awarded for comprehensive strategies that demonstrate quantifiable environmental benefits.
In order to request an innovation credit, a manufacturer must submit a written explanation of the innovation, why it does not fit into the current categories or credits provided in the Standard and justify that the amount of points requested by drawing a parallel to the number of points awarded in a similar category.

For example, a manufacturer may earn innovation points for dematerialization. In this case, credit can be provided for process, and for products or product(s) lines that provide equal function using less material by percent weight per square foot, which reduces impacts as measured over all product(s) stages. In this example, the intent is to use design innovation to achieve dematerialization.

Guidance for this section may be found in Annex D.
Annex A  
(normative)  
Scoring system  
Sustainable product(s) assessment – resilient floor coverings

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Annex B
(informative)

Key elements of a certification program for Environmentally preferable and sustainable resilient floor coverings

B.1 General

Declaring conformance to this Standard identifies that a manufacturer designs, develops, and creates products in a manner that is considered to be in some measure sustainable and/or environmentally preferable. Conformance to this Standard alone does not imply certification. The manufacturer can provide additional public confidence regarding the attainment of these goals by undertaking independent conformity assessment (certification).

B.2 Product(s) certification process

B.2.1 Selection of conformity assessment body

The manufacturer identifies a certification organization to perform the conformity assessment of the product(s) assessment process for conformance with this Standard.

B.2.2 Conformity assessment to standard

The certifying organization performs the necessary functions to determine whether the manufacturer's operations and product(s) conform to the specified criteria. This may involve activities such as an audit of the manufacturing facility, review of the product(s) formulation, testing, or review of documentation for assessing conformance with the specified criteria.

B.2.3 Issuance of product(s) certification

If the product(s) has been demonstrated adequately to meet the specifications described in this Standard, and any issues of nonconformance have been addressed, the certifying organization provides a product(s) certification to the manufacturer. This may include the provision of documentation of certification of the product(s) to the manufacturer, as well as inclusion of the product(s) on any publicly available lists of certified products maintained by the certifying organization. The certifying organization instructs the manufacturer regarding appropriate use of the registered certification mark of the certifying organization.

B.2.4 Monitoring of product(s) conformance

At intervals determined by the certifying organization, the continued conformance of the certified product(s) to the specified criteria is monitored using periodic facility audits, periodic retesting, or both.

B.3 Suggested requirements for certifying organizations

A certifying organization offering a certification program for environmentally preferable and sustainable resilient floor coverings should conform to the requirements of ISO/IEC DIS 1706515. Conformity assessment – Requirements for bodies certifying products, processes and services.

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B.3.1 Marking of certified product(s)

The certifying organization should specify requirements for marking of certified products. Requirements for product(s) marking should include, at a minimum:

- certified products should bear a registered certification mark of the certifying organization; and
- each product(s) should bear a statement of achievement status (e.g., silver, gold).

B.3.2 Listing certified companies

The certifying organization should maintain a published listing of all certified products. The listing format should include the following minimum information:

- company name and address;
- product(s) description;
- trademark / formulation designation; and
- each environmentally preferable and sustainable product(s) claim that has been successfully evaluated and is certified.

B.3.3 Audits

The certifying organization should conduct actual physical audits of all facilities and productions locations of the certified company.

B.3.4 Corrective action

The manufacturer should take corrective action for all items of nonconformance found during audits and re-evaluation including:

- provisions for review and authorization for modifications to formulations;
- modifications to certified product(s) formulations; and
- documentation and authorization of the modification maintained on file.

B.3.5 Enforcement

To preserve the integrity of the registered certification mark of the certification organization, enforcement action should be taken by the certifier for the following:

- use of the registered trademark of the certifying organization on a non-certified product(s);
- general nonconformance;
- unauthorized change to certified products; and
- unauthorized shipment or disposal of products placed on hold.

B.3.6 Appeals

The certifying organization should have provisions for an appeals process as requested by any party directly affected by a decision, action, or inaction of the certifying organization.
B.3.7 Complaints

The certifying organization should provide for the following:

- investigation of complaints related to certified products;
- misuse of the registered trademark of the certifying organization by a certified company;
- use/misuse of the registered trademark of the certifying organization by a non-certified company; and
- certified company retention and disclosure of complaint records and remedial actions for certified products.

B.3.8 Advertising

A certifying organization should provide guidance to certified manufacturers regarding proper use of the registered trademark of the certifying organization on sales literature, technical publications, promotional materials, packaging, catalogs, and advertising.

B.3.9 Records

A certifying organization should have provisions for verification of complete certified company records including:

- purchased materials and ingredients; and
- production, shipment, and inventory.

B.3.10 Public notice

Provisions for issuing a public notice for nonconformance to any requirement of certification should be maintained by the certifying organization.

B.3.11 Confidentiality

The certifying organization should have a documented policy of non-disclosure of any confidential information supplied to the certifying organization by the company regarding the product(s), including formulations, components, processes, ingredients, and the identity of the company’s suppliers and distributors.
## Table B.1 – Persistent, bioaccumulative, and toxic (PBT) chemicals

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS RN</th>
<th>Final CERC LA RQ</th>
<th>Units</th>
<th>POPs&lt;sup&gt;5&lt;/sup&gt;</th>
<th>BI-NAT&lt;sup&gt;6&lt;/sup&gt;</th>
<th>TRI&lt;sup&gt;7&lt;/sup&gt;</th>
<th>RCRA&lt;sup&gt;8&lt;/sup&gt;</th>
<th>RoHS&lt;sup&gt;9&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>acenaphthene</td>
<td>83-32-9</td>
<td>5000 lbs</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>acenaphthylene</td>
<td>208-96-8</td>
<td>5000 lbs</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aldrin&lt;sup&gt;3&lt;/sup&gt;</td>
<td>309-00-2</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>anthracene</td>
<td>120-12-7</td>
<td>5000 lbs</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>benzo (g,h,i)perylene</td>
<td>191-24-2</td>
<td>5000 lbs</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>benzo(a)pyrene</td>
<td>50-32-8</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cadmium</td>
<td>7440-43-9</td>
<td>10 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>chlordane</td>
<td>57-74-9</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>chromium (hexavalent)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DDT (also DDD and DDE on bi-national list)</td>
<td>50-29-3</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bibenzofuran</td>
<td>132-64-9</td>
<td>100 lbs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>dieldrin&lt;sup&gt;3&lt;/sup&gt;</td>
<td>60-57-1</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dioxins&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1746-01-6</td>
<td>0.1 g</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>endosulfan, alpha and endosulfan, beta&lt;sup&gt;1&lt;/sup&gt;</td>
<td>959-98-8</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>endrin</td>
<td>72-20-8</td>
<td>1 lbs</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1fluorine</td>
<td>86-73-7</td>
<td>5000 lbs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>heptachlor&lt;sup&gt;3&lt;/sup&gt;</td>
<td>76-44-8</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>heptachlor epoxide&lt;sup&gt;7&lt;/sup&gt;</td>
<td>1024-57-3</td>
<td>1 lbs</td>
<td></td>
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<td>X</td>
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<tr>
<td>hexachlorobenzene</td>
<td>118-74-1</td>
<td>10 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hexachlorobutadiene</td>
<td>87-66-3</td>
<td>1 lbs</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hexachlorocyclohexane, gamma (Lindane)</td>
<td>58-89-9</td>
<td>1 lbs</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>isodrin</td>
<td>465-73-6</td>
<td>1 lbs</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lead (alkyl lead on bi-national list)</td>
<td>7439-92-1</td>
<td>10 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mercury</td>
<td>7439-97-6</td>
<td>1 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>methoxychlor</td>
<td>72-43-5</td>
<td>1 lbs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mirex</td>
<td>2385-85-5</td>
<td>N/A</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>naphthalene</td>
<td>91-20-3</td>
<td>100 lbs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>octachlorostyrene</td>
<td>29082-74-4</td>
<td>10 lbs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAH Group (polycyclic aromatic hydrocarbons as defined in TRI)</td>
<td>N/A</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>28</sup> The information contained in this annex is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI’s requirements for an ANS. As such, this annex 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.
<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS RN</th>
<th>Final CERC LA RQ</th>
<th>Units</th>
<th>POPs</th>
<th>BI-NAT</th>
<th>TRI</th>
<th>RCRA</th>
<th>RoHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBB (polybrominated biphenyls)</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>PBDE (polybrominated diphenyl ethers)</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>PCB (polychlorinated biphenyls)</td>
<td>1336-36-3</td>
<td>1 lbs</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>pendimethalin</td>
<td>40487-42-1</td>
<td>10 lbs</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>pentachlorobenzene</td>
<td>608-93-5</td>
<td>10 lbs</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>pentachloronitrobenzene</td>
<td>82-68-8</td>
<td>100 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>pentachlorophenol</td>
<td>87-86-5</td>
<td>10 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>phenanthrene</td>
<td>85-01-8</td>
<td>5000 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>pyrene</td>
<td>129-00-0</td>
<td>5000 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>tetrabromobisphenol A</td>
<td>79-94-7</td>
<td>100</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>tetrachlorobenzene (1,2,4,5-)</td>
<td>95-94-3</td>
<td>5000 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>toxaphene</td>
<td>8001-35-2</td>
<td>1 lbs</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>trichlorobenzene (1,2,4-)</td>
<td>120-82-1</td>
<td>100 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>trichlorophenol (2,4,5-)</td>
<td>95-95-4</td>
<td>10 lbs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>trifluralin</td>
<td>1582-09-8</td>
<td>10 lbs</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

1 Heptachlor, heptachlor epoxide, and endosulfan alpha/beta are listed together on the RCRA Waste Minimization List.

2 Dioxins and furans are listed separately on Stockholm Convention POPs, and listed together on bi-national PBTs and RCRA Waste Minimization List; TRI PBT lists “dioxin and dioxin-like compounds.”

3 Aldrin and dieldrin are listed together on the bi-national PBT list.


6 USEPA, Great Lakes Pollution Prevention and Toxics Reduction, Level I Substances, <www.epa.gov/glnpo/p2/bns.html>

7 U.S. Environmental Protection Agency (USEPA), SARA Title III Toxic Release Inventory (TRI) Emissions, <www.epa.gov/tri/chemical>

8 USEPA Resource Conservation and Recovery Act (RCRA), <www.epa.gov>

Annex D
(informative)\textsuperscript{29}

Guidance on innovation points in 10

The intent of the innovation points in 10 is to provide manufacturers the opportunity to be awarded points for exceptional performance above the requirements set by this standard and/or innovative performance not specifically addressed herein.

Points for innovative performance are awarded for comprehensive strategies that demonstrate quantifiable environmental benefits and proportional to an existing credit within the standard. If an innovation item is not covered in the standard, it must meet the guidance set forth in this Annex. The intent is to recognize novel approaches for reducing the environmental footprint. Innovation points may be earned in any of the five categories:

- product(s) design;
- product(s) manufacturing;
- long-term value;
- end of life management; and
- corporate governance.

There are a maximum of ten points available in 10.

The certifying agency should be responsible for evaluating the submission from the manufacturer and for determining the total number of innovation points that will be awarded to the manufacturer.

It is important to note that the award of innovation points for one certification at a specific time does not constitute automatic approval for a similar strategy in a future certification.

Approved innovation points may be pursued by any manufacturer. The manufacturer must sufficiently document the quantifiable benefits of the innovation. The documentation shall include:

- identification of the proposed innovation credit intent;
- description of the innovative technology or processes applied; and
- documentation of results to demonstrate quantifiable environmental benefits.

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Interpretations Annex
(informative)30

Interpretation A:

Q. 5.2.2 Life cycle assessment or Design for Environment assessment. It is noted that in 5.3.1 Inventory of material inputs, includes packaging and “recommended adhesive”. If the LCA is from cradle to grave is the LCA scope required also required to encompass:

1. packaging
2. adhesive
3. waste from installation
4. cleaning of flooring in use phase

A. It is not the intention to require use phase information as this is not really under the manufacturer’s control. If use phase is available, then it may be provided.

Q. If waste from installation is included is there a set number, say 2% that should be use, or is it up to the manufacturer to determine what the installation waste amount is?

A. This is up to the manufacturer on the basis of their experience, there could be differences between manufacturers and products, and these might be important.

Q. If cleaning is included is it just based on the manufacturers recommended method?

A. This is up the manufacturer, but certainly this would be seen as acceptable even if the practice is very different, since it is outside of the manufacturer’s control.

Q. 5.2.3 Life cycle assessment improvement. Is the useful life of the product simply set by the manufacturer, or do one have to analyze a set timeframe / functional unit. Example Functional Unit: “Adequate coverage of one square foot of floor space for 25 years”?

A. It is set by the manufacturer. There is no attempt to compare products, therefore it is not required to have a standard unit of measure, but a functional unit must be declared by the manufacturer as for any other ISO compliant life cycle.

Q. Does indoor VOC off-gas data for the product need to be incorporated into the Use phase of the life cycle? (this may get picked up by Photochemical Smog or Ozone Depletion impact categories. May not be most appropriate?)

A. No it does not, but what is included and excluded needs to be declared.

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Q. 5.2.3.1 Establishing a baseline. This section discusses establishing a baseline LCA, what exactly is meant, in terms of a single product, when it says the baseline should be chosen as representing the sales weighted average of product constructions?

A. Then the single product is 100% of the baseline. The goal was to avoid establishing a baseline that was not reflective of the company performance, such as by choosing the heaviest and most energy intensive product, when this was a tiny fraction of sales.

Q. 6.6.1 Greenhouse gas loadings. Should the inventory include the entire organization or entity, or is it acceptable for it to just include the manufacturing operations and supporting operations? ISO 14064 (assumed Part 1) is more geared to entity inventory accounting, so appears to be a bit of an inconsistency.

A. Manufacturing operations not organization. If you have a suggestion for a better reference we would be pleased to try to include this instead.
The following standards established and adopted by NSF as minimum voluntary consensus standards are used internationally:

<table>
<thead>
<tr>
<th>Standard Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Food equipment</td>
</tr>
<tr>
<td>3</td>
<td>Commercial warewashing equipment</td>
</tr>
<tr>
<td>4</td>
<td>Commercial cooking, rethermalization, and powered hot food holding and transport equipment</td>
</tr>
<tr>
<td>5</td>
<td>Water heaters, hot water supply boilers, and heat recovery equipment</td>
</tr>
<tr>
<td>6</td>
<td>Dispensing freezers</td>
</tr>
<tr>
<td>7</td>
<td>Commercial refrigerators and freezers</td>
</tr>
<tr>
<td>8</td>
<td>Commercial powered food preparation equipment</td>
</tr>
<tr>
<td>12</td>
<td>Automatic ice making equipment</td>
</tr>
<tr>
<td>13</td>
<td>Refuse processors and processing systems</td>
</tr>
<tr>
<td>14</td>
<td>Plastics piping system components and related materials</td>
</tr>
<tr>
<td>18</td>
<td>Manual food and beverage dispensing equipment</td>
</tr>
<tr>
<td>20</td>
<td>Commercial bulk milk dispensing equipment</td>
</tr>
<tr>
<td>21</td>
<td>Thermoplastic refuse containers</td>
</tr>
<tr>
<td>24</td>
<td>Plumbing system components for recreational vehicles</td>
</tr>
<tr>
<td>25</td>
<td>Vending machines for food and beverages</td>
</tr>
<tr>
<td>29</td>
<td>Detergent and chemical feeders for commercial spray-type dishwashing machines</td>
</tr>
<tr>
<td>35</td>
<td>High pressure decorative laminates (HPDL) for surfacing food service equipment</td>
</tr>
<tr>
<td>36</td>
<td>Dinnerware</td>
</tr>
<tr>
<td>37</td>
<td>Air curtains for entranceways in food and food service establishments</td>
</tr>
<tr>
<td>40</td>
<td>Residential wastewater treatment systems</td>
</tr>
<tr>
<td>41</td>
<td>Non-liquid saturated treatment systems</td>
</tr>
<tr>
<td>42</td>
<td>Drinking water treatment units – Aesthetic effects</td>
</tr>
<tr>
<td>44</td>
<td>Residential cation exchange water softeners</td>
</tr>
<tr>
<td>46</td>
<td>Evaluation of components and devices used in wastewater treatment systems</td>
</tr>
<tr>
<td>49</td>
<td>Biosafety cabinetry: Design, construction, performance, and field certification</td>
</tr>
<tr>
<td>50</td>
<td>Equipment for swimming pools, spas, hot tubs, and other recreational water facilities</td>
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THE HOPE OF MANKIND rests in the ability of man to define and seek out the environment which will permit him to live with fellow creatures of the earth, in health, in peace, and in mutual respect.

July 31, 2015