LF–02

SUSTAINABILITY

NORTH AMERICAN LAMINATE FLOORING ASSOCIATION

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Foreword

This American National Standard LF-02 Sustainability Assessment for Laminate Floor Coverings has been developed, as part of ongoing efforts by a number of interested parties, to document and improve the sustainability profile of laminate floor coverings. The purpose of this Sustainability Standard is to establish consistent requirements for sustainable laminate floor covering products. These requirements are intended to form the basis of conformity assessment programs.

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

- demonstrate how laminate floor covering products can conform to the environmental, economic, and social principles of sustainability throughout the supply chain;

- demonstrate conformance with ISO Type 1 (14024) and Type 2 (14021) environmental labeling and declaration requirements;

- demonstrate conformance with the Federal Trade Commission (FTC) Guides for the Use of Environmental Marketing Claims;

- create confidence in the various stakeholders (manufacturers, suppliers, regulators and consumers) that the products meet the requirements of this program; and

- encourage participation by all manufacturers of laminate floor coverings to improve environmental performance.

Comments on this Standard should be sent to either NALFA, 1747 Pennsylvania Avenue N.W., Suite 1000, Washington, D.C. 20006 - Tel: (202) 785-9500 - Fax: (202) 835-0243 NALFA.com.

The information contained in this Foreword is not part of the 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 comment review or a consensus process. In addition, it does not contain requirements necessary for conformance to this Draft Standard.

1 General

1.1 Purpose
The purpose of this voluntary Standard is to provide measurable market-based definitions of sustainable laminate flooring by establishing performance criteria that address environmental and social aspects throughout the supply chain.

1.2 Scope
This Standard provides a pathway towards sustainability by establishing measurable criteria for multiple levels of achievement and/or performance.

This Standard is applicable to all laminate flooring products covered by the ANSI NALFA LF-01 Standard. The Standard is also applicable to Materials and components manufactured by suppliers to laminate flooring manufacturers. This Standard is applicable to products manufactured in one facility or multiple facilities, one country or multiple countries. It addresses product-based characteristics in the general areas of materials, use of energy, human and ecosystem health, and social responsibility impacts,

2 Normative References
The following list of references are provided based upon utilization within or importance to this document and subject matter. The versions referenced, while current at the time of publication of this standard, may be subjected by revisions. Parties are encouraged to verify use of the most recent editions of any referenced standards indicated below:

- California Code of Regulations, Title 24, Part 6 *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*
- http://www.energy.ca.gov/title24/

- California Integrated and Waste Management Board, *Sustainable (Green) Building, Special Environmental Requirements Specification, Section* 01350
- https://www.calrecycle.ca.gov/greenbuilding/specs/section01350/

- Convention on international Trade in Endangered Species of Wild Fauna and Flora (CITES) *Appendices 1*
- https://www.cites.org/

- *ISO* 11469, *Mastics -- Generic identification and marking of plastics products*
- www.iso.org

- *ISO* 14001, *Environmental management systems – Requirements with guidance for use*
- www.iso.org

- *ISO* 14025, *Environmental labels and declarations – Type III environmental declarations– Principles and Procedures*
- www.iso.org

- ISO *14040, Environmental management -- Life cycle* assessment -- *Principles and Framework*
- www.iso.org

- *ISO 14044, Environmental management – Life cycle assessment – Requirements and guidelines*
- www.iso.org

- United States Green Build Council **LEED --** *Existing Buildings; Operations & Maintenance Rating System*
- www.usgbc.org

- NALFA/ANSI LF-01 LAMINATE FLOORING –
- www.nalfa.com

- NSF/ANSI 140 Sustainable Carpet Assessment –
- www.nsf.org

- NALFA/ANSI Standards Publication UL-01 UNDERLAYMENT PAD –
- www.nalfa.com

- NSF/ANSI Standard 332 SUSTAINABILITY ASSESSMENT FOR RESILIENT FLOOR COVERINGS –
- www.nsf.org

- BIFMA SUSTAINABILITY GUIDELINES 2005 –
- www.bifma.org

- BIFMA E3 FURNITURE SUSTAINABILITY STANDARD –
- www.bifma.org

3 Definitions

3.1 biodegradable: Capable of natural conditions decomposition.

3.2 bio-based material: A commercial or industrial product (other than food or feed) that is composed, in whole or in significant part, of biological products, including renewable domestic agricultural materials (including plant, animal and marine materials) or forestry materials; or an intermediate ingredient or feedstock.

3.3 by-product: Material, other than the principal product, generated as a consequence of an industrial process or as a breakdown product in a living system.

3.4 carcinogen: Any substance capable of causing cancer in a living tissue.

3.5 chemicals of concern: A chemical that makes a significant contribution to one or more of the following life cycle impact categories:

- persistent, bio-accumulative, and toxic (PBT);
- reproductive toxicant; and/or
- carcinogen.

3.6 child Labor*:* Work exploitation of individuals under the minimum legal age for employment in the country where the facility operates.

3.7 third party conformity assessment: Compliance verification performed by a person/entity independent (no purchaser interests) from the organization making a specific statement or claim regarding a particular product or group of products.

3.8 cradle-to-gate: Terminology used to describe the LCA (see 3.2.4) boundary encompassing life cycle stages of raw material extraction and conversion to a bulk form or a generic shape.

3.9 criteria (air) pollutants: The EPA set National Ambient Air Quality Standards pursuant to the 1970 amendments to the Clean Air Act for certain pollutants known to be hazardous to human health. EPA identified six pollutants: ozone, carbon monoxide, total suspended particulates, sulfur dioxide, lead, nitrogen oxide and aldehydes, including formaldehyde. The term, "criteria pollutants" derives from the requirement that EPA describe the characteristics and potential health and welfare effects of these pollutants. Standards are set or revised based on these criteria.

3.10 design for the environment (DFE):
The systematic integration of environmental attributes into the design of products and processes; the three unique characteristics of DFE are:

1. The entire life-cycle is considered;
2. Point of application is clearly in the product realization; and
3. Decisions are made using a set of values consistent with industrial ecology, integrative systems thinking or another framework.

3.11 ecosystem: The interacting system of a biological community and its non-living environmental surroundings.

3.12 environment: The sum of all external conditions affecting the life, development, and survival of an organism.

3.13 environmental aspect: An element of an organization's activities, products or services that can interact with the environment.

3.14 environmental policy: Organizational statement regarding its overall environmental performance principles, which provides a framework for action and for the setting of its environmental objectives and targets.

3.15 environmental management system: The part of a company's overall management system that includes organizational structure, planning activities, responsibilities, practices,

procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy.

3.16 fossil fuel: Fuel derived from organic remains. (e.g., peat, coal, crude oil and natural gas)

3.17 gate-to-gate: A term used to describe the product boundary encompassing the fabrication and assembly of flooring products. For the assessment, the "entry gate" or the receiving dock of the first facility is where basic materials used in the manufacturing of laminate, or wood flooring. (e.g. particleboard coated paper, clear coat film, etc.) begins the conversion to finished flooring products. The "end gate" is the shipping dock where the ready to install flooring is transported for distribution to the end user. The gate-to-gate assessment will include transportation of intermediate materials and components between facilities where more than one location is included in the manufacturing process.

3.18 greenhouse gas (GHG): Gases related to human activities that accelerate the greenhouse effect

3.19 hazardous substances (materials): Any substance that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive; or any substance designated by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or is otherwise released into the environment.

3.20 key supplier: A supplier of a material or ingredient used in a finished Laminate flooring product that comprises at least 5% by weight.

3.21 laminate flooring: A rigid floor covering, typically in a plank or tile format, having a multiple layer product structure, e.g., backer, substrate, overlay, and decor. The planks/tiles have worked edges that allow the product to be joined together to form a larger integral unit. The product may vary in surface texture and gloss. Laminate flooring does not include products having a resilient, stone, textile, wood, leather, or metal top surfacing material(s).

3.22 legacy products: Laminate flooring products manufactured for sale prior to the publication of this standard.

3.23 life cycle: The total impact of a system, function, product, or service from the extraction of raw materials through its end-of-life management.

3.24 life cycle assessment (LCA): A tool for the systematic evaluation of the environmental aspects of a product or service system through all stages of its life cycle consistent with ISO 14040. An analytical tool to implement life cycle thinking, inclusive of both product and process. An LCA is generally quantitative and requires that the results be normalized to a functional unit.

3.25 life cycle inventory (LCI): A process of quantifying energy and raw material

requirements, atmospheric emissions, waterborne emissions, solid wastes, and other releases for the entire life cycle of a product, process, or activity.

3.26 package: A container providing a means of marketing, protection, or handling of a product and shall include a unit package, an intermediate package, and a shipping/transport container as defined in ASTM D 996. "Package" shall also mean and include such unsealed receptacles as carrying cases, crates, cups; pails, rigid foil, and other trays, wrappers and wrapping films, bags, and tubs.

3.27 packaging component: Any individual part of a package such as, but not limited to, bracing, cushioning, weatherproofing, exterior strapping, coatings, closures, inks, and labels,

3.28 post-consumer recycled material: Generated by product end-users, e.g., households, or by commercial, industrial, and institutional facilities, which can no longer be used for its intended purpose. This includes return of materials from the distribution chain.

3.29 post-industrial (pre-consumer) recycled material: Diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

3.30 pollution: Generally, the presence of a substance in the environment that, because of its chemical composition or quantity, prevents the functioning of natural processes and produces undesirable environmental and health effects.

3.31 process chemical: Used in the direct manufacturing of the product and is not intended to be incorporated into the product as shipped (e.g. prep solvent prior to powder coat).

3.32 recovered material: Waste materials and by-products that have been recovered or diverted from solid waste but does not include materials and by-products generated from.

3.33 recycle: To minimize waste generation by recovering and reprocessing usable products that might otherwise become waste (e.g., aluminum cans, paper, bottles, etc.).

3.34 recycled-content materials: Materials that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (post-industrial) or after consumer use (post-consumer).

3.35 registration: Written assurance by a third party that a system conforms to specified requirements, either mandatory or voluntary, regulated or non-regulated,

3.36 renewable energy: Energy from a source that is replenish-able and replenished on some reasonable time scale. Potential renewable energy sources include but are not limited to wind, solar, heat from the earth's interior, oceans, rivers, and biomass.

3.37 renewable material: A material that is replenish-able and replenished on some reasonable time scale. Renewable material sources include but are not limited to wood, grass fibers, plant-based plastics, and bio- based fuels.

3.38 reusable packaging: Packaging that has been conceived and designed to accomplish within its lifecycle, a minimum number of trips or rotations, is refilled or used for the same purpose for which it was conceived, with or without the support of auxiliary products present on the market, enabling the packaging to be refilled; such reused packaging will become packaging waste when no longer subject to reuse.

3.39 social responsibility (or equity): The identification of issues, the development of standards, and the implementation of programs that address a corporation's standards and programs addressing the ethical treatment of employees, communities, and other stakeholders.

3.40 solid waste: Non-liquid, non-soluble scrap or unusable materials,

3.41 source reduction: A pollution prevention technique that eliminates the potential for pollution at the source, or where the polluting material enters the product or service cycle.

3.42 stakeholders: Those affected, or potentially affected, by any action taken by an organization.

3.43 sundry: Essential or enhancement materials, goods or products supporting or completing the installation or appearance of laminate flooring.

3.44 sustainable development: Process that meets the needs of the present without compromising the ability to meet future generations' needs.

3.45 toxic: Presenting a potential known risk of injury to human health or the environment.

3.46 unit: A determinate quantity (as of square feet, weight, carton of, etc.)

3.47 waste: Unwanted residual materials from a manufacturing process or refuse from places of human or animal habitation commonly reused within an original manufacturing process.

4 Assessing Conformance, Evaluation, and Assessment Criteria

The applicant shall clearly specify in the scope of assessment, the cut-off criteria regarding inputs and outputs, along with any assumptions relative to the cut-off criteria established. The intent of the standard is to encourage reduction in environmental impact. The scope of conformance can be defined based on product options or characteristics. Representative (worst-case) sample selection–for manufacturers wishing to demonstrate compliance for a specific product–only that product shall be evaluated. A manufacturer may choose to demonstrate compliance over a broader set of products. In this case, a series or category of products with varying characteristics may be grouped together for evaluation purposes. If the products can be expected to perform similarly during

evaluation (e.g., having the same general construction, materials, and manufacturing processes), evaluation models shall be selected from the group based on those that can be expected to have the highest potential effect on environmental impact. A case-by-case product line analysis is required, taking into consideration any special attributes, materials, methods of manufacture/construction, etc.

4.1 Elements

This Standard is divided into five basic elements along with an innovation category; consisting of some prerequisites, along with credits that are potentially available to organizations seeking product conformance to the standard. The five basic elements are:

- design
- durability
- energy and atmosphere
- human and ecosystem health
- social responsibility, plus
- innovation (Bonus)

4.2 Prerequisites

Elements may contain prerequisites that are required as minimum performance requirements for which no credit points are awarded. The applicant's product(s) shall meet all prerequisites in order to be qualified for a sustainability level rating consideration. Once prerequisite(s) are met; product(s) may achieve additional credits toward multiple levels of achievement in each element by meeting the specified performance requirements.

4.3 Credits

Beyond the prerequisites, there is no minimum number of credits from any of the five major elements required to demonstrate conformance to this Standard. The required credits can come from any of the five basic elements. Innovation credits are potential bonus points that contribute to advanced certification levels above base level.

4.4 Points

Each credit has one or more points that accumulate toward a level of conformance. In addition to a minimum number of total points required, all prerequisites must be fulfilled.

4.4.1 Levels of Conformance

Level	Points Required
1 - Bronze Certification Level	25
2 - Silver Certification Level	35
3 - Gold Certification Level	48
4 - Platinum Certification Level	65

5.0 Product Design

5.1 Purpose

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

5.2 Enlightened Design Process

The intent of the criteria in this section is to encourage product designers and developers to better understand environmental impacts of products, and to ensure that manufacturers have a basis from which to identify and implement strategic environmental management within the organization.

5.3 Environmental Considerations in Design

As a pre-requisite, the manufacturer shall have a formal Environmental Management System (EMS) that considers the environmental attributes and impacts of its products, sundries and packaging, including issues such as designing for longevity, designing for reusability, and designing for recycle-ability and/or compost-ability, etc.

5.3.1 Registered EMS System

The manufacturer shall receive one (1) point for documenting that its EMS system is registered with ISO 14001 or certified through a third-party certification.

5.3.2 Life Cycle Assessment (LCA) or 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 undergoing assessment, the manufacturer shall receive points as detailed below A maximum of three (3) points shall be awarded.

The manufacturer shall receive one (1) point if it completes a Design for Environment (or equivalent) assessment.

The manufacturer shall receive two (2) points if it completes a minimum cradle-to-gate, EPD Or ISO 14040-42 conformant life cycle assessment. Life cycle impact assessment shall be performed using a publicly available life cycle impact assessment methodology that addresses, at a minimum, the following five environmental impacts:

a) Global Warming / Greenhouse Gas Loadings
b) Acidification / Acidifying Gas Loading
c) Ozone Depletion / Release of Ozone-Depleting Chemicals
d) Photochemical Smog Formation / Ground Level Ozone Loading Eutrophication/ Nitrogen Loading

e.g. Use of the TRACI life cycle assessment model from USEPA or the CMLCA model from the Leiden University Institute of Environmental Sciences demonstrates conformance with this criterion.

5.4 Environmentally Sustainable Material Inputs

The criteria in this section is intended to ensure that the manufacturer is fully informed as to the material composition of its products, including packaging and recommended sundries. 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), bio-based resources or materials with a demonstrated reduced environmental footprint.

5.4.1 Inventory of Material Inputs

As a prerequisite, the manufacturer shall complete an inventory of material inputs for the product undergoing assessment. At a minimum, the inventory shall report inputs using Chemical Abstract Service (CAS) nomenclature, with inputs classified as hazardous declared to a minimum 1,000 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] or bio-based material).

5.4.2 Environmentally Sustainable Inputs – Product

For the product(s) undergoing assessment, the manufacturer shall declare the total quantity of environmentally sustainable inputs, specified on a percentage weight basis. The manufacturer shall receive one (1) point per 10.0% by weight of environmentally sustainable content. A maximum of eight (8) points shall be awarded.

a) Recycled content quantity shall be calculated as follows:
   i) Post-consumer recycled content shall be valued at 100% weight basis; and
   ii) Pre-consumer recycled content shall be valued at 50% weight basis.

b) Bio-based resource content shall be calculated as follows:
   Bio-based materials shall be valued at up to 100% calculated using actual bio-based content.

c) Where third party certification is provided, validating raw materials as being environmentally sustainable, one (1) extra point shall be awarded per material, for a maximum of two (2) points total.

5.4.3. Environmentally Sustainable Inputs Sundries

For the product undergoing assessment, the manufacturer shall declare the total quantity of environmentally sustainable inputs, specified on a percentage weight basis. The manufacturer shall receive one (1) point per 20.0% environmentally sustainable content. A maximum of four (4) points shall be awarded.

a) Recycled content quantity shall be calculated as follows:
   i) Post-consumer recycled content shall be valued at 100% weight basis; and
   ii) Pre-consumer recycled content shall be valued at 50% weight basis.

b) Bio-based resource content shall be calculated as follows:
   i) Bio-based materials shall be valued at up to 100% calculated using actual bio-based content.

c) Where third party certification is provided, validating raw materials as being environmentally sustainable, a maximum of one (1) extra point shall be awarded.

5.4.4 Environmentally Sustainable Inputs - Product Packaging

For the product undergoing assessment, the manufacturer shall declare the total quantity of environmentally sustainable inputs of the packaging materials specified on a percentage weight basis. The quantity shall be calculated as described in 5.4.3 The manufacturer shall

receive either one (1) point for 50% post-consumer recycled content or bio-based materials, or two (2) points for 75% post-consumer recycled or bio-based material content. This does not include the pallet, if utilized. (See 6.4.3)

5.4.5 Sundry Packaging

For the Sundry 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 a maximum one (1) point for 75% post-consumer recycled content or bio-based materials. This does not include the pallet, if utilized. (See 6.4.3)

5.5 Human and Ecologically Friendly Inputs

The criteria in this section is 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 packaging and sundries. These criteria are also meant to encourage the use of environmentally compatible chemicals, while minimizing and eliminating the use of chemicals of concern.

5.5.1 Identification of "Use of Chemicals of Concern"

As a prerequisite, the manufacturer shall create a report classifying the material inputs for the product undergoing assessment by the chemical hazard classifications listed below. At a minimum, the manufacturer shall report whether the material input comprising at least 1,000 ppm (0.1%) of the product or packaging and sundry materials are classified as any of the following:

a) International Agency on the Research of Cancer (IARC) -- Group 1 — Carcinogenic to Humans;
b) National Toxicology Program (NTP) — Known Human Carcinogen;
c) Occupational Safety and Health Administration (OSHA) — Regulated Toxic Metal or Human Carcinogen;
d) California Proposition 65 — Known to cause cancer or reproductive toxicity in humans;
e) USEPA Toxic Release Inventory (TRI) persistent, bio-accumulative, and toxic (PBT) chemicals—known persistent, bio-accumulative, and toxic chemicals and compounds (a subset of the EPA TRI list of chemicals and compounds); or
f) USEPA TRI — Complete USEPA toxic chemical list (including known PBT chemicals and compounds).

5.5.2 Minimization of Known Chemicals of Concern in Product

The manufacturer shall receive two (2) points for demonstrating that the product does not contain any known human carcinogen or reproductive chemical toxicity as listed in 5.5.1a — 5.5.l d at levels equal or greater than 1,000 ppm (0.1%) or the level that requires labeling under California Proposition 65, or whichever is lower. A maximum of five (5) points shall be awarded.

The manufacturer shall receive one (1) point for demonstrating that the product does not contain any known toxic metal as listed in **5.5.1c at levels** equal to or greater than 1,000 ppm (0.1%).

The manufacturer shall receive one (1) point for demonstrating that the product does not contain any known PBT chemical or compound as listed in 5.5.1e at levels equal to or greater than 1,000 ppm (0.1%).

The manufacturer shall receive one (1) point for demonstrating that the product does not contain any other toxic chemical as listed in section 5.5.1f at levels equal to or greater than '1,000 ppm (0.1 %).

A maximum of five (5) points shall be awarded.

5.5.3 Minimization of Known Chemicals of Concern in Recommended Sundries
The manufacturer shall receive two (2) points for demonstrating that no component **listed as** a human carcinogen or toxic material as defined in 5.5.1a — 5.5.1d comprises more than 0.1% (1,000 ppm) of the total mass of the packaging and sundry materials.

5.5.4 Elimination of Chemicals with Upstream Concerns
For those material inputs present in the product at equal or greater than 5% (five percent), the manufacturer shall receive:

a) One (1) point for demonstrating that the upstream production. operations do not release known PBT chemicals or compounds (see 5.5.1 e) at or above USEPA reporting thresholds; and/or One (1) point for demonstrating that the upstream production operations do not release any listed TRI chemicals or compounds (see 5.5.1f) at or above USEPA reporting thresholds.

A maximum of two (2) points may be awarded. 56 Supplier Selection

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.

5.6 Supplier Selection

5.6.1 Supplier Environmental Disclosure The manufacturer shall receive one (1) point for establishing a supplier environmental disclosure request process. Environmental performance information compiled from key suppliers covering items a & b is valued at one (1) point, plus one (1) additional point for items c & d.

a) Compliance with local, regional, and national environmental requirements and report of any outstanding violations or issues of non-compliance; required Information for point Under 5.6.1:
b) Release of reportable quantities of TRI PBTs; required Information for point under 5.6.1.
c) Reported energy usage broken out by energy type; and amount on a per unit basis.
d) Amount of greenhouse gas emissions.

A maximum of three (3) points may be awarded.

5.6.2 Supplier Environmental Disclosure Response

The manufacturer shall document the percent of key suppliers that have satisfactorily conformed to the company's environmental disclosure requirements as described in 5.6.1. The manufacturer shall receive one (1) point if 50-74% of its key suppliers have conformed or receive two (2) points if 75% or more of its key suppliers have conformed.

A maximum of two (2) points may be awarded.

5.6.3 Supplier Social Accountability

The manufacturer shall document the percent of its key suppliers that have satisfactorily conformed to the company's social accountability disclosure requirements. The manufacturer shall either receive one (1) point if 50-74% of its key suppliers have conformed or receive a two (2) points if 75% or more of its key suppliers have conformed. Disclosed information shall include, of a minimum:

a) Declaration of compliance with local, regional, and national labor requirements, and report of any outstanding violations or issues of non-compliance; and
b) Documentation and assessment of social accountability conformance prepared in general accordance with the social indicators described in GRI, SA8000, or another comparable evaluation program.

A maximum of two (2) points may be awarded.

5.6.4 Supplier Audits

The manufacturer may receive up to two (2) points for supplier audits. It shall receive one (1) point if it declares what percent of its key suppliers it has 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.

A maximum of two (2) points may be awarded.

5.7 Product and Sundry End-of-Life Design Considerations

The criteria in this section is intended to ensure that the manufacturer is cognizant of, and considers in its design and productivity, the product and any sundry's "end of life."

5.7.1 Assessment

The manufacturer shall receive one (1) point for having specific product "end of life" recommendation other than landfill. E.g.
Take back for re-use
a) Compostable (must meet ASTM criteria)
b) Conversion of waste to energy (valued at 'h value of options “a” and/or "b")

The manufacturer shall receive two (2) points for documentation whereby a minimum 10 tons of post-consumer laminate/sundry landfill avoidance can be demonstrated. The manufacturer shall receive an additional two (2) points for documentation whereby a minimum 100 tons of post-consumer

laminate/sundry land fill avoidance can be demonstrated. Conversion of waste to energy is valued at value of re-use or compost-able use A maximum of three (3) points may be awarded.

6 Product Manufacturing

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

6.1 Maintaining Environmental Attributes Through Manufacturing

The manufacturer shall receive one (1) point for implementing a tracking system to ensure that design criteria specified in their EMS are not cost-engineered or otherwise modified during the manufacturing process.

6.2 Conservation of Energy Resources

A manufacturer can improve their environmental impact by means of energy initiatives: both reduction of consumption (i.e., conservation) and selection of source (i.e., renew-ability). 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.

6.2.1 Energy Inventory

The manufacturer shall receive one (1) point for completing an inventory of energy use that encompasses production (including quantity and source). The manufacturer shall also identify type and distance of transportation for raw materials purchased from key suppliers.

6.2.2 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 basis, facility basis, or total manufacturing operation basis. Reduction shall be calculated from a base year 1997 (when NALFA was formed) or later. Impact reduction shall be quantified as follows:

Measured reductions in energy consumption (including that supplied as direct fuel, electricity, and/or steam); and/or Conversion of energy inputs from non-renewable resources (e. g., fossil fuels) to renewable alternatives.

The manufacturer *shall* receive points according to **table 6.1,** for a maximum of ten (10) points.

Table 6.1 Energy Input Percent Reduction Threshold and Points Awarded

Percent reduction threshold	Points Awarded
1%	1
2%	2
5%	3
8%	4
11%	5
15%	6
20%	7
26%	8
35%	9
51%	10

6.3 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.

6.3.1 Water Use Inventory

The manufacturer shall receive one (1) point for completing an inventory of water use including identification of quantity of water used or consumed (e.g. loss through evaporation), and sources (e, g., municipal potable, direct capture, on-site wells, reclaimed waste water).

6.3.2 Reduced Water Consumption

The manufacturer shall receive one (1) point for an average 1% per year reduction of water use and consumption averaged over a minimum three-year period during the last ten years, on a per-unit or total basis,

6.4 Optimization of Material Resources

Poor material selection & process considerations can lead to high levels of waste generation and corresponding losses in production yields. The criteria in this section is intended to encourage the maximization of yield from product raw materials and to minimize the generation of waste during production.

6.4.1 Waste Minimization Program

The manufacturer shall receive one (1) point for having a documented operational waste minimization program that includes quantification of waste generation rate.

6.4.1.1 For the purposes of 6.4, "waste" is defined as solid scrap or, unusable material that must be managed via land-filling, incineration or other means of disposal.

6.4.2 Waste Minimization
The manufacturer shall receive either:

a) One (1) point for demonstrating a solid waste generation reduction rate of at least 2% per year (five-year rolling average); or Two (2) points for demonstrating an annual average total waste generation rate of less than 2.0% on a weight or volumetric basis.

A maximum of two (2) points will be awarded.

6.4.3 Packaging Minimization
The manufacturer shall use packaging and delivery options designed to minimize generating waste during transport and installation of product. One (1) point shall be awarded if a product's packaging weight is documented as constituting less than 4% of the product's weight excluding pallet, provided participating in verifiable program where pallets are recovered for use. An additional (1) point is awarded for manufacturer participating in verifiable pallet recovery program for future use.

A maximum of two (2) points may be awarded.

6.5 Material and Handling Disclosure
Product safety information (SDS) must be readily accessible for product raw materials (pre-req.).

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(s).

6.6.1 Greenhouse Gas Loadings
The manufacturer shall receive one (1) point for completing a greenhouse gas inventory for product manufacturing operations in accordance with ISO 14064 or an equivalent standard.

6.6.2 Greenhouse Gas Reduction Goals
The manufacturer shall receive up to two (2) points for establishing greenhouse gas reduction targets; one (1) point for establishing reduction targets compared to base year data, and one (1) additional point for a reduction equal to or stricter than the relevant Kyoto protocol goals.

6.6.2.1 Greenhouse Gas Reductions
The manufacturer shall demonstrate a reduction in greenhouse gas loadings on a per unit production basis. NOTE: Consistent scope of production must be reflected, and the initial or base year of calculation must be 1997 or later. The manufacturer shall receive one (1) point for each 5% reduction. A maximum of four (4) points may be awarded.

6.6.3 PBT Reductions
The manufacturer shall demonstrate that emissions of PBT(s) are below reporting levels as defined under the USEPATRI Program. The manufacturer shall receive one (1) point for achieving this goal in relation to emissions from its on-site activities, and one (1) additional point for achieving the goal in relation to emissions from its supplied electricity sources, for a maximum of two (2) total points.

7 Durability and Use
The purpose of this section is to encourage manufacturers to produce durable, long-lasting products.

7.1 NALFA I ANSI LF-01 Compliance
The manufacturer shall receive four (4) points for demonstrating a product's compliance with. current NALFA/ANSI LF-01 Laminate Flooring Specifications and Test Methods.

7.2 Fire Properties
The manufacturer shall receive one (1) point each for demonstrating a product's fire resistance (ASTM E 648) and smoke resistance (ASTM E662). A maximum of two (2) points may be awarded.

7.3 Indoor Air Quality

7.3.1 CHPS - LEM - CA 01350
The manufacturer shall receive one (1) point for compliance with FloorScore LEM (low-emitting materials) program tested per CA 01350.

7.3.2 CARB
For adherence to TSCA Title VI & CARB indoor air quality requirements, the manufacturer shall receive (2) points for Products meeting CARB Phase 2 or NAF.

7.4 Maintenance

7.4.1 Green Cleaning Strategy
The manufacturer shall receive two (2) points for documenting recommended use of low VOC, low aquatic toxicity maintenance products for use on laminate flooring.

7.5 Product Warranty
The manufacturer shall receive one (1) point for demonstrating long-term product warranty coverage ≥10 years and one (1) additional point for ≥ 20 years.
A maximum of two (2) points may be awarded.

7.6 Product Recall
The manufacturer shall receive two (2) points for demonstrating existence of a program for performing and handling product recalls.

8 Social Responsibility and Progressive Corporate Governance

The purpose of this section is to encourage good business practices and continued social responsibility.

8.1 Preliminary Disclosures

8.1.1 General

The manufacturer shall receive one (1) point for demonstrating, at the time of application, that EMS information on environmental issues is available to public entities.

8 2 Responsible Employer

8.2.1 Employee Turnover

The manufacturer shall receive one (1) point for quantifying and reporting the average employee turnover rate (e.g., per year or in a two-year rolling average).

8.2.2 Employee Injury Rate

The manufacturer shall receive one (1) point for quantifying and declaring the average employee injury rate (e.g., per year or in a two-year rolling average). The report shall include occupational accidents, injuries, illnesses, and diseases.

8.2.3 Prevention of Discrimination

The manufacturer shall receive one (1) point for demonstrating that it does not engage in or support discrimination in hiring, remuneration, access to training, promotion, termination, or retirement based on legally protected criteria, including but not limited to race, color, national origin, religion, disability, gender, and sexual orientation. This also requires manufacturer's warranting that it is in compliance with all legal notification/ posting requirements.

8.2.4 Prohibitions on Forced or Child Labor

The manufacturer shall receive one (1) point for demonstrating that it does not engage in or permit the use of forced labor or the use of child labor (per ILO conventions C29 and 0105) at its facilities or those of its key suppliers.

8.3 Community Engagement

8.3.1 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 (1) point for investing 5% or more of its net income to the community.

8.3.2 Employee Participation
The manufacturer shall receive one (1) point for documenting manufacturer-supported employee activities within the community; such as community service work performed during paid time off for that purpose;

8.3.3. Local Recruiting
The manufacturer shall receive one (1) point for documenting net local employment (full-time equivalent basis) and local sourcing expenditures (U. S. dollars spent or equivalent) per year or in a two-year rolling average.

8.4 Financial Responsibility

8.4.1 Profitability
The manufacturer shall receive one (1) point for demonstrating a three-year rolling average continued profitability; while not sacrificing the principles above.

8.4.2 Investment in research and development
The manufacturer shall receive one point for devoting 1.5% 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 Innovation(s)
The manufacturer shall receive up to ten (10) points for demonstrating product design, development, manufacturing, cradle-to-grave, innovations.

Appendix A
(normative)

Scoring System
Sustainable Product Assessment – Laminate Floor Coverings

Criteria	Description	Max. Points	Max. Cumulative Points
Section 5	**Informed Product(s) Design**		
5.3	Environmental Consideration in Design	Pre-req.	0
5.3.1	Registered EMS System	1	1
5.3.2	Life Cycle or DFE Assessment	3	4
	Subtotal	4	4
5.4	**Environmentally Sustainable Material Inputs**		
5.4.1	Inventory Material Inputs	Pre-req.	4
5.4.2	Use of Sustainable Inputs – Product(s)	10	14
5.4.3	Use of Sustainable Inputs – Sundries	5	19
5.4.4	Use of Sustainable Inputs – Packaging		
5.4.5	(Products)	2	21
	Use of Sustainable Inputs – Packaging		
	(Sundries)	1	22
	Subtotal	**18**	**22**
5.5	**Human and Ecologically Friendly Inputs**		
5.5.1	Material Input Assessment	Pre-req.	22
5.5.2	Minimize of Known Chemicals of Concern in		
5.5.3	Product(s)	5	27
5.4.4	Minimize of Known Chemicals of Concern in		
	Sundries	2	29
	Elimination of Chemicals with Upstream		
	Concerns	2	31
	Subtotal	**9**	**31**
5.6	**Informed Selection of Suppliers**		
5.6.1	Requested Supplier Environmental Disclosure		
5.6.2	Information	3	34
5.6.3	Supplier Environmental Disclosure Response	2	36
5.6.4	Supplier Social Accountability	2	38
	Supplier Audits	2	40
	Subtotal	**9**	**40**
5.7	**Product and Sundry End-of-Life Design Considerations**		
5.7.1	Assessment	5	45
	Subtotal	**5**	**45**

Section 6	**Product Manufacturing**		
6.1	Maintaining Environmental Attributes through Manufacturing	1	46
	Subtotal	**1**	**46**
6.2	**Conservation of Energy Resources**		
6.2.1	Energy Inventory	1	47
6.2.2	Reduction of Impacts from Energy Inputs	10	57
	Subtotal	**11**	**57**
6.3	**Management of Water Resources**		
6.3.1	Inventory Water Use	1	58
6.3.2	Reduce Water Consumption	1	59
	Subtotal	**2**	**59**
6.4	**Optimization of Material Resources**		
6.4.1	Waste Minimization program	1	60
6.4.2	Waste Minimization	2	62
6.4.3	Package Minimization	1	63
	Subtotal	**4**	**63**
6.5	**Material Handling and Disclosure**		
	Product Safety Information	**Pre-req.**	**63**
	Subtotal	**0**	**63**
6.6	**Protection of Air Resources**		
6.6.1	Quantify Greenhouse Gas Loadings	1	64
6.6.2	Greenhouse Gas Reductions Goals	2	66
6.6.2.1	Greenhouse Gas Reductions	4	70
6.6.3	PBT Reductions	2	72
	Subtotal	**9**	**72**
Section 7	**Long-term Value**		
7.1	NALFA / ANSI LF-01	4	76
7.2	Fire Resistance Properties	2	78
	Subtotal	**6**	**78**
7.3	**Indoor-Air Quality**		
7.3.1	FloorScore CA 0350	1	79
7.3.2	TSCA Title VI 4CARD	2	81
	Subtotal	**3**	**81**
7.4	**Maintenance**		
7.4.1	Green Cleaning Strategy	2	83
	Subtotal	**2**	**83**
7.5	**Product Warranty**		
	Long-term Product Warranty	2	85
	Subtotal	**2**	**85**
7.6	**Product Recall**		
	Product Recall Program	2	87
	Subtotal	**2**	**87**

Section 8 **8.1**	**Corporate Governance** **Public Commitment to Sustainability**		
8.1.1	Preliminary Disclosure	1	88
	Subtotal	**1**	**88**
8.2	**Responsible Employer**		
8.2.1	Employee Turnover	1	89
8.2.2	Employee Injury Rate	1	90
8.2.3	Prevention of Discrimination	1	91
8.2.4	Prohibitions on Forced or Child Labor	1	92
	Subtotal	**4**	**92**
8.3	**Community Engagement**		
8.3.1	Community Financial Investment	1	93
8.3.2	Employee Participation	1	94
8.3.3	Local Recruiting	1	95
	Subtotal	**3**	**95**

8.4	**Financial Leadership**		
8.4.1	Profitability	1	96
8.4.2	Investment in Research	1	97
	Subtotal	**1**	**97**
9	**Innovation(s)**		
	Product Innovation(s)	10	107
	Subtotal	**10**	**107**
TOTAL			**107**

Appendix B
(informative)

Key Elements of a Certification Program for Environmentally Preferable and Sustainable Laminate Floor Coverings

B.1 General
Declaring conformance to this Standard (self-certification) identifies that a manufacturer designs, develops, and creates products in a manner that is in some measure sustainable and/or environmentally preferable. Conformance to this Standard alone does not imply formal 3rd party verified certification which can provide additional public confidence regarding the attainment of these goals.

B.2 Product Certification Process

B.2.1 Self Certification
Self-certification must be based on accumulated points sufficient to achieve a minimum silver rating. Self-certification cannot be used to claim gold or platinum performance levels. Self-certification can only be utilized as Bronze level.

B.2.1.1
If the product has demonstrated meeting the requirements described in this Standard, and any issues of nonconformance have been addressed, the certifying organization provides a product certification to the manufacturer. This may include the provision of documentation of certification of the product to the manufacturer, as well as inclusion of the product 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.2.2 Selection of Conformity Assessment Body (verified by formal 3rd party entity)
The manufacturer identifies a certification organization to perform the conformity assessment of the product assessment process for conformance with this Standard,

B.2.3 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 formulation, testing, or review of documentation for assessing conformance with the specified criteria.

B.2.4. Issuance of Product Certification
If the product has demonstrated meeting the requirements described in this Standard, and any issues of nonconformance have been addressed, the certifying organization provides a product certification to the manufacturer.

This may include the provision of documentation of certification of the product to the manufacturer, as well as inclusion of the product 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.2.5 Monitoring of Product Conformance

At intervals determined by the certifying organization, the continued conformance of the certified product 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 laminate floor coverings should conform to the requirements of ISO/IEC Guide 65, General Requirements for Bodies Operating Product Certification Systems.

B.3.1 Marking of Certified Product

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

-Certified products should bear a registered certification mark of the certifying organization; and
-Each product 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 description;
- trademark I formulation designation; and
- each environmentally preferable and sustainable product claim that has been successfully evaluated and is certified.

B.3.3 Audits

The certifying organization should conduct audit of facilities and production locations of the certified company, sufficient for confidence of submission criteria.

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 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;
- 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 appeal 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 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, including formulations, components, processes, ingredients, and the identity of the company's suppliers and distributors.

Appendix C
Guidance on innovation Points in Section 9

Guidance

The intent of the innovation points in Section 9 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 Appendix. The intent is to recognize novel approaches for reducing the environmental footprint. Innovation points may be earned in any of the five categories;

The five basic elements are:

- design
- durability
- energy and atmosphere
- human and ecosystem health
- social responsibility

There is a maximum of ten points available in Section 9.

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 must 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.