THE INSTITUTE FOR MARKET TRANSFORMATION TO SUSTAINABILITY

1511 Wisconsin Avenue, NW
Washington, DC 20007

Telephone 202-338-3131
Fax 202-338-2800
Email MTS@sustainableproducts.com
Web http://MTS.sustainableproducts.com

Let us create a standard to which the wise and honest can repair. George Washington

EMERGENCY
SMART© Building Product Standard
promoting sustainable building product achievement

Approved Consensus Standard 12-15-06

2015 Imperative of the American Institute of Architects To Stop Dangerous & Irreversible Climate Change

CONTENTS Page

1. PURPOSE & GOALS

The purpose of the sustainable building products standard is to provide a market-based definition for Sustainable Building Products, establish performance requirements for public health and environment, and address the triple bottom line, economic-environmental-social, throughout the supply chain.

The goals of this Sustainable Building Products Standard are to:

a) Increase the economic value of sustainable building products throughout the supply chain by enhancing their market demand .
b) Provide information that enables specifiers to sort out the complex information on sustainable attributes.
c) Identify other consensus based standards and Sustainable Building Products.
d) Educate and instruct all stakeholders in the building product supply chain.
e) Encourage competition between manufacturers and their suppliers to seek out or develop environmentally preferable processes, practices, power sources, and materials

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

- Cost savings
- Design innovation
- Product differentiation
- Long term customer relationships
- Liability reduction
- Ecological restoration

2. SCOPE

The scope of the Standard enables organizations throughout the building product supply chain to apply performance requirements to achieve sustainable attributes and certify compliance with levels of achievement through quantifiable metrics. The Standard is inclusive, is based on life cycle assessment (LCA) principles, and provides benchmarks for continuous improvement and innovation. Building Products are is defined in section 4.26. This Standard does not cover carpet.

Certification to this Sustainable Building Product Standard is intended to allow inclusive participation and encourage the progressive movement of the building product industry toward sustainability. This Standard identifies six levels of sustainable attribute performance and four levels of achievement by which building materials and products can be measured with respect to specific attributes that indicate progress toward sustainability.

This Standard is voluntary yet emphasizes disclosure of information on both impacts and benefits of a building product from an environmental and sustainability perspective.

All products or processes can be referenced under this Standard if they are able to achieve all prerequisites and score the minimum required for certification as specified in section 6.

This Standard does not apply to packaging of sustainable building products.

3. REFERENCES & TOOLS

This Standard incorporates procedures and protocols established in the following sustainability standards, thereby eliminating both redundancies and potential inconsistencies:

- *Global Reporting Initiative* (GRI) Social Indicators
  http://www.globalreporting.org/GRIGuidelines/index.htm
- Stockholm Toxic Chemicals List http://www.chem.unep.ch/publications.htm
- Life Cycle Assessment **(**LCA) ISO General Principles Standard
  http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=23151
- General Product Life Cycle Diagram (Figure 1, p. 15)
- Federal Trade Commission *Environmental Marketing Guides*
  http://www.ftc.gov/bcp/conline/pubs/buspubs/greenguides.htm
- US Green Building Council *LEED Rating System*
  http://www.usgbc.org/LEED/existing/leed_existing.asp
- *FSC Certified Wood* Practices http://www.certifiedwood.org/
- *Green-e Power* http://www.resource-solutions.org/Green-epage.htm

Additional information on use of this Sustainable Building Product Standard is provided in the Appendix. A separate Guidance Document for Implementation will be published to provide details on the intent for each element in the matrix, examples and how to go about documenting for certification.

4. DEFINITIONS

4.1 Best Management Practices (BMPs) for Soil Erosion & Runoff Control: These practices improve soil productivity and prevent water pollution that adversely affects biota including spawning grounds. They provide a basis for measuring the environmental impact of corn production for extraction of polylactic acid (PLA) that could be used in sustainable building products. Use of PLA fiber is recognized in this Standard. Some building products are biobased and thus developed from agricultural products.

BMPs provide benefits at the raw materials extraction stage. These practices developed by EPA, Purdue University, and Conservation Technology Information Center, can be viewed at http://www.epa.gov/watertrain/agmodule/ with detailed descriptions, manuals, and photos of practices. They allow for local variables, e.g. weather, pests, soil, & type of farm, and are summarized and slightly modified as follows:

Conservation Tillage - leaving crop residue (plant materials from past harvests) on the soil surface reduces runoff and soil erosion, conserves soil moisture, helps keep nutrients and pesticides on the field, and improves soil, water, and air quality;

Crop Nutrient Management for Organic fields - fully managing and accounting for all nutrient inputs helps ensure nutrients are available to meet crop needs while reducing

nutrient movements off fields. It also helps prevent excessive buildup in soils and helps protect air quality;

Pest Management - varied organic methods for keeping insects, weeds, disease, and other pests below economically harmful levels while protecting soil, water, and air quality;

Conservation Buffers - an additional barrier of protection by capturing potential pollutants that might otherwise move into surface waters. Examples are grassed waterways and riparian conservation areas.

Irrigation Water Management - reducing nonpoint source pollution of ground and surface waters caused by irrigation systems;

Grazing Management where manure is used for fertilizer - minimizing the water quality impacts of grazing and browsing activities on pasture and range lands;

Animal Feeding Operations (AFOs) Management where manure is used as fertilizer - minimizing impacts of animal feeding operations and waste discharges through runoff controls, waste storage, waste utilization, and nutrient management;

Erosion and Sediment Control - conserving soil and reducing the mass of sediment reaching a water body, protecting both agricultural land, water quality, and habitat.

Biobased: In contrast to the petroleum-based model which relies on materials photosynthesized millions of years ago, biobased manufacturing processes use photosynthesis that occurred in the past decade. Biobased processes use naturally occurring enzymes or organisms. Biobased manufacturing processes generate by-products that are not hazardous, can be reused and are disposed of through biodegradable methods. In the context of this Standard, biobased materials must be sustainably produced resulting in multiple attributes listed in Appendix A, A.2.

4.2 Biodegradable: "Reliable scientific evidence that the entire product or package will completely break down and return to nature, *i.e.*, decompose into elements found in nature within a reasonably short period of time after customary disposal (16 C.F.R. § 260.7 (b))."

4.3 Closed Loop Process: Materials reclaimed and returned in a process that are neither classified as, defined as, nor operate as, a waste, i.e., any discarded material. Materials in a closed loop process are treated as commodities in a manner designed to avoid loss or release to the environment (See generally, 40 C.F.R. § 261.4(a)(8)).

4.4 Compostable: "Competent and reliable scientific evidence that all materials in the product or package will break down into, or otherwise become part of, usable compost (e.g., soil conditioning material, mulch) in a safe and timely manner in an appropriate composting program or facility, or in a home compost pile or device (16 C.F.R § 260.7 (c))."

4.5 Continual Improvement: Continual improvement is a process used in total quality management, in which a company through its routine course of business, continually improves its products and processes.

4.6 Design for the Environment (*DfE*): Through life-cycle assessment, DfE considers all environmental implications or stages of a product: energy and materials used, its manufacture and packaging, transportation, consumer use, reuse or recycling, and disposal. All effects a product may have on the environment are examined during its design phase. All life cycle stages are analyzed including a full assessment of all inputs to the product, the company's operations related to the product, how the product is used, and final product disposition whether reused, taken back, or disposed of (*State of Minnesota DfE Toolkit* www.moea.state.mn.us/p2/dfe.cfm).

4.7 De Minimis: Concentrations of Media pollutants less than 1% and Toxic Chemicals less than 0.1% are considered De Minimis.

4.8 Life Cycle: Consecutive and interlinked stages of a product system, from raw material acquisition to final disposition or reuse.

4.9 Life Cycle Assessment (LCA): compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle. See Figure 1, p. 15.

4.10 Life Cycle Design: An approach for designing more ecologically and economically sustainable product systems, integrating environmental requirements into the earliest stages of design. In life cycle design, environmental, performance, cost, cultural and legal requirements are balanced. *(EPA Introduction to Environmental Accounting June 1995)*.

4.11 Life Cycle Impact Assessment: phase of life cycle assessment aimed at understanding and evaluating the magnitude and significance of the potential environmental impacts of a product system at all product stages.

4.12 Metric: a standard of measurement.

4.13 Pollution Prevention: Changing existing or planned operations so that waste generation is prevented or the volume and/or toxicity of wastes are minimized Pollution Prevention (P2) is the reduction or elimination of pollution at the source (source reduction) instead of at the end-of-the-pipe or stack. P2 occurs when raw materials, water, energy and other resources are utilized more efficiently, when less harmful substances are substituted for hazardous ones, and when toxic substances are eliminated from the production process.

4.14 Precautionary Principle: Where threats of serious or irreversible harm to people or nature exist, anticipatory action will be taken to prevent damages to human and environmental health, even when full scientific certainty about cause and effect is not available, with the intent of safeguarding the quality of life for current and future generations.

4.15 Primary Conversion Process: A process that refines or converts a raw fossil fuel or biomass into a material used by traditional manufacturing processes.

4.16 Reclamation: manufacturers and distributors take financial and/or physical and/or contractual responsibility for their products or for another's product, throughout the entire product lifecycle, including collection disassembly and reuse and/or recycling of the building products to the highest degree practicable. This includes reusing the products and

components for extended product life. See Computer TakeBack Campaign Platform (Elec. Take it Back Campaign Mar. 2001).

4.17 Recycled Content: The amount of material by weight "collected, separated or otherwise recovered from a waste stream for use in the form of raw materials, in the manufacture or assembly of a new package or product (16 C.F.R. § 260.7 (d))" See background in Appendix A.3. Coal fly ash used as filler or binding agent qualifies as post industrial content only, as do all other post industrial content fillers & binders.

Post Consumer - A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal.

Post Industrial/Preconsumer – Materials generated by manufacturers or product converters, such as trimming, overruns, and obsolete products, that are incorporated back into the manufacturing process of the same or a different product. Manufacturer's scrap that would have, in any case, been incorporated into the product does not qualify as recycled under the Federal Trade Commission Guides. See 16 C.F.R. 260.7(e). See Appendix A3.

4.18 Recycling: "Recycling is a series of activities that includes collecting materials that would otherwise be considered waste, sorting and processing recyclables into raw materials, and manufacturing raw materials into new products" (http://www.epa.gov/epaoswer/non-hw/muncpl/recycle.htm).

4.19 Renewable Energy includes: solar electric (photovoltaic), solar thermal, wind, geothermal, biogas, biomass, hydro and renewable cogeneration on site or off site, on or off grid. Off-site renewable energy can either be displaced which is renewable energy meeting Green-e requirements generated by the same owner on a different site, or Green-e power that is purchased on the open market from sources that are certified through the Green-e Renewable Electricity Certification Program. Contracts for purchase of Green-e electricity should be for a minimum of 2 years.

The non-profit organization Center for Resource Solutions established the *Green-e* Renewable Electricity Certification Program to encourage consumer confidence in buying "green" electricity. *Green-e* is the nation's first voluntary certification and verification program for "green" electricity products. The criteria require that at least 50% of the supply is generated from the sun, water, wind, burning of wastes (biomass) or geothermal heat from the earth. In addition, in the use of any traditional fuel, emissions of sulfur dioxide (which causes acid rain), nitrogen oxide (which causes smog) and carbon dioxide (which causes climate change) must be lower than average. The companies that receive the Green-*e* designation must agree to an annual audit to ensure they have purchased a satisfactory amount of "renewable" power: http://www.green-e.org. The *Green-e Standard* is at http://www.green-e.org/ipp/standard_for_marketers.html.

4.20 Reuse: "Use a product more than once, either for the same purpose or for a different purpose. Reusing, where possible, is preferable to recycling because the item does not need to be reprocessed before it can be used again" (http://www.epa.gov/epaoswer/non-hw/muncpl/reduce.htm#reuse).

4.21 Reusable: Reusable means the potential of a product for reuse as defined in 4.17, and that facilities exist to make such reuse economically feasible.

4.22 Supply Chain: the all inclusive set of links from raw materials to customer, including extraction, transportation, fuels, manufacturing, and use, *i.e*., the network of retailers, distributors, transporters, storage facilities and suppliers that participate in the sale, delivery and production of a particular product *(Investorwords.com* 2003).

4.23 Sustainable Agriculture: (*Food, Agriculture, Conservation, and Trade Act of 1990*) "Means an integrated system of plant and animal production practices having site-specific application that will, over the long term:

- satisfy human food and fiber needs
- enhance environmental quality and the natural resource base upon which the agricultural economy depends
- make efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls
- sustain the economic vitality of farm operations
- enhance the quality of life for farmers and society as a whole

Sustainable agriculture protects native vegetation, habitat & forests, and where forest harvesting arises in the building product supply chain, use *FSC Certified Wood* practices.

4.24 Sustainable Reuse: Reuse is sustainable when it includes social supply chain considerations specified in the table 2 in MFG 1-2 , and the product is EITHER:

- reused indefinitely, maintaining performance and quality characteristics and environmental integrity without harmful releases to health or environment, as part of a closed loop program in which only chemically contaminated used product is disposed of, OR
- reused, and then returned safely to natural systems without any adverse effects to public health and environment. .

4.25 Sustainable Building Product: Sustainable Building Products meet or exceed the environmental, social, & economic performance requirements set forth in this Standard's "Supply Chain Achievement Matrix" in section 6. These products and their related systems have the following attributes:

- ♦ All materials and process inputs and outputs are safe for human and ecological health in all phases of the product life cycle
- ♦ All energy, material and process inputs come from renewable or recycled sources
- ♦ All materials are capable of returning safely to either natural systems or industrial systems
- ♦ All stages in the product life cycle actively support the reuse or recycling of these materials at the highest possible level of quality
- ♦ All product life cycle stages enhance social well being

4.26 Building Product: All products and materials in the whole building environment of all buildings. Fabric, Apparel, Flooring and Carpet are not covered by this Standard, but covered by the SMART© Fabric, Apparel and Flooring Standards and California Gold Sustainable Carpet Standard.

5. GENERAL REQUIREMENTS

In order to achieve a sustainable building product achievement rating, a building product must provide environmental, economic, and social benefits while protecting and enhancing the needs of future generations, public health, welfare and environment over its full commercial cycle, from raw materials extraction to final disposition. Sustainable Building Products must also provide the equivalent in performance and quality to other building products.

Sustainable Building Products may be petrochemical-based or biobased but must demonstrate throughout its supply chain**,** multiple attributes that protect public health and environment and foster healthy and prosperous conditions for human and ecological systems. Claims made on all sustainable/EPP attributes must be certified pursuant to section 7 with publicly reviewable documentation.

5.1 Consistent with the Achievement Matrix in Section 6, Sustainable Building Products Must be Evaluated Over the Supply Chain for Multiple Environmental Benefits/Impacts. LCA is one recognized tool to do this. LCA must be used for communications using the word "sustainable," or "environmentally preferable" as part of the competent scientific evidence requirement pursuant to Federal Trade Commission (FTC), EPA, & Attorneys Generals' product marketing requirements (See 16 C.F.R. § 260.7(a). LCA is used to identify environmental benefits and areas for improvement in the supply chain for all environmental media (air, water & land), including local environmental issues in the production of agricultural biobased products. See Figure 1. EPA *Final Environmentally Preferable Product Guidance* sets forth as a "*Guiding Principle: Life Cycle Perspective/Multiple Attributes-* A product or service's environmental preferability is a function of multiple attributes from a life cycle perspective (2002)." Also relevant is the ISO General Principles LCA Standard 14040.

5.2 Product Labeling & Marking: Manufacturers warranting or certifying compliance with this Standard pursuant to section 7, may mark or label their sustainable building product achievement on their product and literature consistent with the appropriate level in the Achievement Matrix.

5.3 Use of Sustainably Produced Biobased Materials in Building Products. Sustainably/EPP grown agricultural materials used in building products must demonstrate sustainable/EPP performance attributes throughout their supply chain and production system. Producers should be able to account for and report on these attributes. Sustainable/EPP building product manufacturers using agricultural raw materials should be able to demonstrate sustainable/EPP performance attributes resulting from the use of sustainable/EPP agriculturally grown raw materials.

5.4 <u>Certification of Product Platforms Allowed</u>: Products can be certified by platforms, i.e., groupings of individual products or product lines with a high degree of uniformity of environmental attributes.

6. SUSTAINABLE/EPP BUILDING PRODUCT EVALUATION CRITERIA AND ACHIEVEMENT MATRIX

The Sustainable/EPP Building Product Evaluation Criteria are divided into five subject categories as follows:

Safe for Public Health & Environment (PHE)
Renewable Energy & Energy Reduction (RE&ER)
Material, Biobased or Recycled (MATLS)
Facility or Company Based (MFG)
Reclamation, Sustainable Reuse & End of Life Management (EOL)

The following sections describe each category and the associated evaluation criteria. A summary of all the criteria can be found in the Sustainable Building Product Achievement Matrix located at the end of this section. For each criterion within each category, a total number of possible points is specified. All requirements below are required throughout the supply chain over all product stages as indicated also in the Matrix.

6.1 Safe for Public Health & Environment (PHE)

This Category contains initial achievement levels that simply inventory pollutants and energy use adversely affecting public health and environment. It specifies intermediate achievement levels reducing a minimum number of known harmful pollutants, and higher achievement levels reducing more pollutants.

This category provides a reasonable and achievable pathway for a building product to be documented as safe for public health and environment over the supply chain.

6.1.1 <u>Level 1 Criteria – Supply Chain Feedstock Inventory</u>

PHE 1-1: Feedstock Inventory Documentation - identify material composition for components present at 1% (10 parts per thousand), including Stockholm Convention Persistent Organic Pollutants[1] [1 pt]

PHE 1-2: Input Stockholm Chemicals – Document that Stockholm Convention Persistent Organic Pollutants are. not present at 0.1% or greater in the product. [1 pt]

[1] The Stockholm Convention on Persistent Organic Pollutants, (signed in Stockholm, May 23, 2001) is intended to eliminate or restrict the production, use and/or release of twelve chemicals that, due to their persistence in the environment, can affect human health throughout the globe, regardless of the location of their use. The twelve chemicals include; pesticides (Aldrin, Chlordane, DDT, Heptachlor, Hexachlorobenzene, Dieldrin, Mirex, Toxaphene), industrial products (PCBs, polychlorinated biphenyls) and byproducts, i.e., unintentionally formed chemicals (polychlorinated dioxins and furans).

PHE 1-3: Output Stockholm Chemicals – Document that manufacturer does not have Stockholm Convention Persistent Organic Pollutant emissions at or above TRI reporting thresholds. [1 pt]

6.1.2 Level 2 Criteria – Manufacturing Emissions Inventory & Credit for Voluntary Reductions Beyond Compliance

PHE 2-1: **Inventory Human and Ecological Health Chemicals Emissions** – Report year 2000 human and ecological health process outflow data (emissions) for certified product or product line for chemicals listed in the BEES Please User Questionnaire for Human and Ecological Health outflows (air and water). The questionnaire can be downloaded from http://mts.sustainableproducts.com/downloads/bees_q.xls. [2 pts]

PHE 2-2: **Inventory Air, Water & Waste (Media) Pollutants** – Report year 2000 process outflow data (emissions) for certified product or product line for the following environmental impact categories listed in the BEES Please User Questionnaire: Building products and other co-products; Pollutant Flows (Flue Gas and Wastewater); Total Solid Waste; Recovered Matter; Greenhouse Gases; Acidification Gases; Other Air Emissions; Ozone Depletion; Smog/MIR Index; Eutrophication; Other Water Effluents. [2 pts]

Baselines for Pollutant Reductions & Metrics: The inventories in PHE 2-1 & 2-2 comprise the baselines for pollutant reductions in PHE 3-1, 4-1, 5-1 & 6-1. The Baseline for PHE 2-4 below is 1986 data derived from a company Environmental Management System or ISO 14040 compliant LCA. The metrics used to measure all pollutant reductions documented in PHE 2-4, 3-1, 4-1, 5-1, & 6-1 are detailed in column five of Table 1 below (characterization factor).

PHE 2-4: Credit for Voluntary Pollutant Reductions Beyond Compliance - Document voluntary pollution reductions beyond Federal, State, or local regulatory compliance from 1986-1999 for Solid & Hazardous Waste, SARA Title III Toxic Release Inventory (TRI) Emissions http://www.epa.gov/tri/chemical/, Climate Change Emissions, Water Use Reduction, & Energy Efficiency:

For 30-50% reductions: 1 point/impact for each of the 5 impacts above inventoried in PHE 2-1 including SARA Title III TRI chemicals

For 50-85% reductions: 2 additional points/impact for each of the 5 impacts above inventoried in PHE 2-1 including SARA Title III TRI chemicals

Over 85% reductions: 3 additional points/impact for each of the 5 impacts above inventoried in PHE 2-1 including SARA Title III TRI chemicals

8 Points Maximum Credit

6.1.3 Level 3 Criteria – 10-25% Reduction in Chemical and Pollutant Emissions

PHE 3-1: **10-25% Reduction of Toxic Chemicals & Media Pollutants** Achieve an average 10-25% reduction of toxic chemicals & media pollutants in at least seven of the following twelve environmental life cycle impact categories: Global Warming, Acidification, Ozone Depletion, Eutrophication, Photochemical Smog, Human Health, Ecological Toxicity, Fossil Fuel Depletion, Habitat Alteration, Criteria Air Pollutants, Water Intake, Solid and Hazardous Waste. In these 7 out of 12 categories, reductions *must be achieved* for Global Warming, Human Health and Ecological Toxicity.

Quantification of toxic chemicals and media pollutants shall use the units of measurement for the Characterization Factors in the fifth column of Table 1 below. These characterization factors are defined in the US EPA Tool for the Reduction and Assessment of Chemical and other environmental impacts (TRACI).

The baseline for these reductions is the inventories generated in PHE 2-2 & 2-3 in the year 2000 using Table 1 units of measurement below, or a recognized and MTS approved industry baseline for building products.

[max 2 pts: as follows]

1 point for an average 10-25% reduction across 7 impact categories

1 additional point for an average 10-25% reduction across 12 impact categories

Table 1 – Baseline Assessment Life-Cycle Impact Categories

Impact Category	Scale	Sample LCI Data (i.e., classification)	Common Characterization Factor	Description of Characterization Factor
Global Warming	Global	Carbon Dioxide (CO 2) Nitrogen Dioxide (NO 2) Nitrous Oxide (N2O) Methane (CH 4) Chlorofluorocarbons (CFCs) Hydrochlorofluorocarbons (HCFCs) Methyl Bromide (CH 3Br)	Global Warming Potential	Converts LCI data to carbon dioxide (CO 2) equivalents Note: global warming potentials can be 50, 100, or 500 year potentials.
Stratospheric Ozone Depletion	Global	Chlorofluorocarbons (CFCs) Hydrochlorofluorocarbons (HCFCs) Halons Methyl Bromide (CH 3Br)	Ozone Depleting Potential	Converts LCI data to trichlorofluoromethane (CFC-11) equivalents.
Acidification	Regional Local	Sulfur Oxides (Sox) Nitrogen Oxides (Nox) Hydrochloric Acid (HCL) Hydroflouric Acid (HF) Ammonia (NH4)	Acidification Potential	Converts LCI data to hydrogen (H+) ion equivalents.
Eutrophication	Local	Phosphate (PO4) Nitrogen Oxide (NO) Nitrogen Dioxide (NO2) Nitrates Ammonia (NH3, NH4)	Eutrophication Potential	Converts LCI data to nitrogen (N) equivalents

Photochemical Smog	Local	Nitrogen Oxides (Nox) Formaldehyde Acetaldehyde Ethylene Glycol Hexanal Toulene	Photochemical Oxident Creation Potential	Converts LCI data to nitrogen oxide (Nox) equivalents.
Human Health	Local	Dioxins (unspecified) Arsenic (As) Mercury (Hg) Carbon Tetrachloride (CCl4) Cadmiun (Cd) Lead (Pb)	Toxicity Equivalency Potential	Converts LCI data to toluene equivalents.
Fossil Fuel Depletion	Global	Coal Natural Gas Oil	Fossil Fuel Depletion Potential	Converts LCI data to surplus MJ equivalents
Habitat Alteration	Global	Land Use (Installation Waste) Land Use (Replacement Waste) Land Use (End-of-Period Waste)	Habitat Alteration Potential	Converts LCI data to Threatened and Endangered Species count per square meter
Criteria Air Pollutants	Global	Nitrogen Oxides (Nox as N02) Particulates (>PM10) Particulates (<+10) Particulates (unspecified) Sulfur Oxides (Sox as SO2)	Criteria Air Pollution Potential	Converts LCI data to microDALYs/g
Ecological Toxicity	Local	Dioxins Mercury (Hg) Cadium (Cd) Napthalene (C10H8) Formaldehyde (CH2O)	Ecological Toxicity Potential	Converts LCI data to 2,4-D equivalents
Solid and Hazardous Waste	Local	Ash Solid Waste Packaging Waste Hazardous Wastes	Waste Characterization Potential	Converts LCI data to equivalent tons
Water Intake	Local	Water	Water Consumption Characterization	Converts LCI data to equivalent liters

PHE 3-2: **Minimize Indoor VOC Emissions** - The maximum concentration for any chemical emitted at 96 hours in emissions tests (following a ten-day conditioning period), shall not result in a modeled indoor air concentration greater than ½ the chronic reference exposure level (CREL) established by California Office of Environmental Health Hazard Assessment (OEHHA), except formaldehyde which shall not exceed ½ the OEHHA indoor chronic reference exposure level (REL). Testing shall be in accordance with CA/DHS/EHLB/R-174 - *Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers* [1 pt].

PHE 3-3: **Minimize Indoor Carcinogenic VOC Emissions** –
Carcinogenic or reproductive toxicant VOCs shall not be emitted from products at levels above the Safe Exposure Levels (SELs). SELs as defined in section 8, and testing, shall be in accordance with CA/DHS/EHLB/R-174 – *Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small Scale Environmental Chambers*.

The following formaldehyde limit for wood does not affect the 1350 limit of 4 ppb in this section for nonwood building products. For formaldehyde in certified composite wood products pursuant to section 7, the raw composite wood in the certified product must meet the Composite Panel Association's (CPA) EPP Spec CPA 1-02 requiring that formaldehyde emissions meet ANSI standards A208.1 & A208.2 which are also recommended by EPA at www.epa.gov/iaq/pubs/formald2.html. CPA 1-02 requires the formaldehyde limits applying only to raw particle Board and raw medium density fiberboard (MDF) before assembled into finished product of: 0.30 ppm for industrial products, 0.20 ppm for building products, 0.30 ppm for Medium Density Fiberboard MDF. Documentation for certifying to CPA's spec must be provided.

For all finished wood building products certified pursuant to section 7, the formaldehyde limit must be no greater than 27 ppb which is the level in California Section 1350 Special Environmental Requirements Sec. 1.3 B. This level is determined so not to penalize wood as a product and takes into account documented approximate 30 ppb natural background levels of formaldehyde in wood by the Australasia Plywood Association http://www.plywoodassn.com.au/pdf/form%202.pdf, and provides a 3 ppb margin of safety. The International Agency for Research on Cancer (IARC) in 2004 reclassified formaldehyde from a probable to a known carcinogen.

[1pt]

PHE 3-4: Green Cleaning Procedures –
Manufacturer of the product certified pursuant to Section 7 must recommend to building owners and operators:

- California 2005 VOC Guidelines, VOC Standards for Cleaning Products, CCR Title 17 section 94509 & Green Seal GS 37 Industrial & Institutional Cleaners which are consistent with LEED CI Innovation credits & LEED EB
- GS 34 Cleaning/Degreasing Agents & GS 40 Industrial & Institutional Floor Care Products.

[Prerequisite 1 pt]

PHE 3-5 Green Primary Installation Materials -
Manufacturers that certify their product must provide on their web site a Material Safety Data Sheet (MSDS) for any use of adhesives, sealants and any other primary installation materials required that the manufacturer sells or recommends to use. This excludes any building product preparation materials.

[Prerequisite: 1 pt]

Adhesives, grout and any other primary installation materials recommended for use by the manufacturer for installers and building owners/operators shall include those primary installation materials meeting South Coast Air Quality Management District Rule # 1168 for VOCs, and for sealants, the VOC limits of Regulation 8, Rule 51 of the State of California Bay Area Air Resources Board. Sealants are materials with adhesive characteristics used as filler, not material used as a coating. **[1 pt]** other environmental impacts (TRACI).

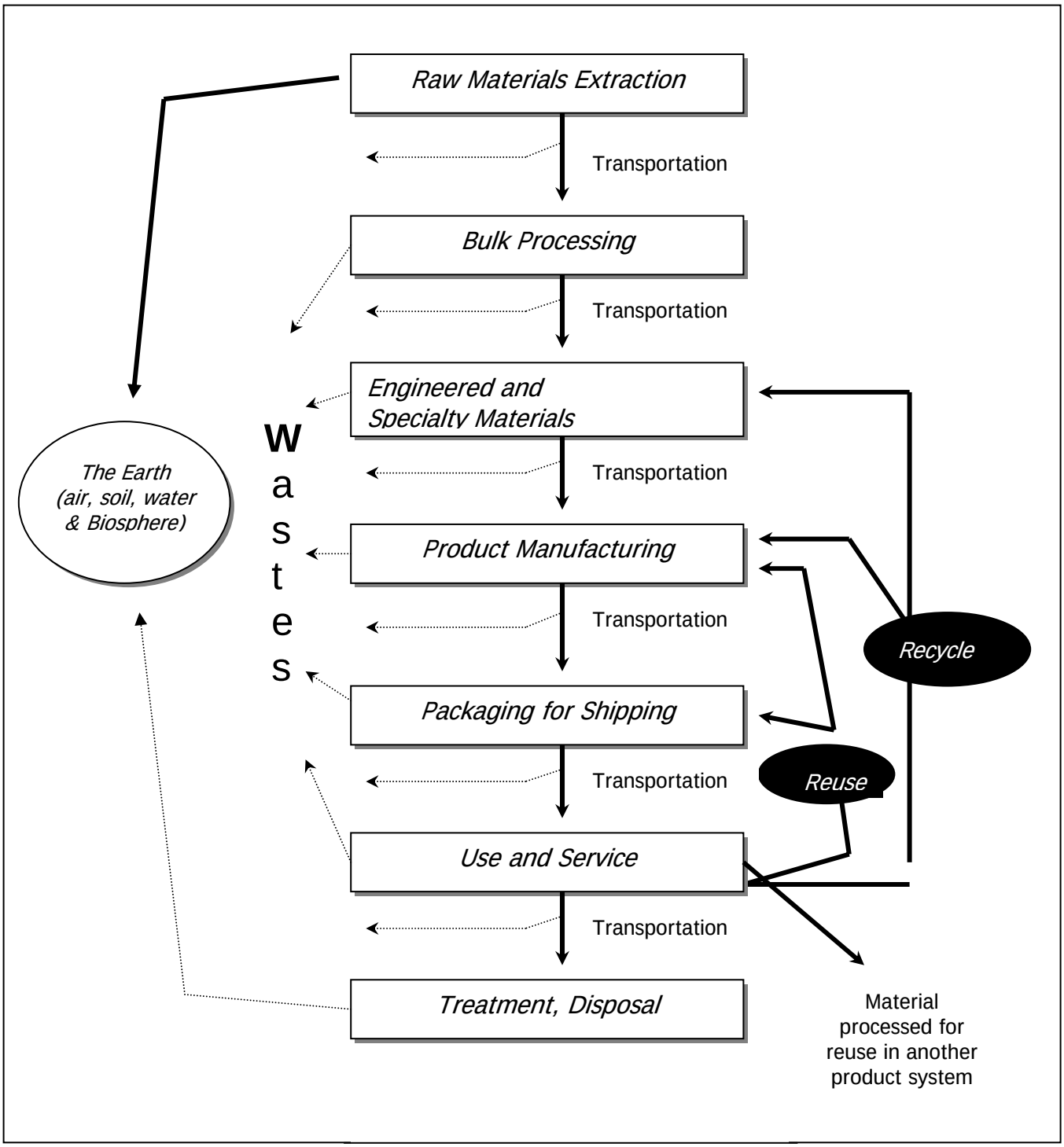
The baseline for these reductions is the inventories generated in PHE 2-2 & 2-3 in the year 2000 using Table 1 above, or a recognized and MTS approved industry baseline for building products.

[max 2 pts: as follows]

1 point for an average 26-50% reduction across 7 impact categories

2 points for an average 26-50% reduction across 12 impact categories 26% average

Figure 1. *The General Product Life Cycle*



6.1.4 Level 4 Criteria – 26-50% Reduction in Chemical and Pollutant Emissions

PHE 4-1: **26-50% Reduction of Toxic Chemicals & Media Pollutants** – Achieve an average 26-50% reduction of toxic chemicals & media pollutants in at least seven of the following twelve environmental life cycle impact categories: Global Warming, Acidification, Ozone Depletion, Eutrophication, Photochemical Smog, Human Health, Ecological Toxicity, Fossil Fuel Depletion, Habitat Alteration, Criteria Air Pollutants, Water Intake, Solid and Hazardous Waste. In these 7 out of 12 categories, reductions *must be achieved* for Global Warming, Human Health and Ecological Toxicity.

Quantification of toxic chemicals and media pollutants shall use the units of measurement for the Characterization Factors in the fifth column of Table 1. These characterization factors are defined in the US EPA Tool for the Reduction and Assessment of Chemical and Other environmental impacts (TRACI).

The baseline for these reductions is the inventories generated in PHE 2-2 & 2-3 in the year 2000 using Table 1 above, or a recognized and MS approved industry baseline for a building product or building products.

[max 2 pts as follows:]

1 point for an average 26-50% reduction across 7 impact categories

1 additional point for an average 26-50% reduction across 12 impact categories

PHE 4-2: **Minimize Indoor Formaldehyde Emissions** – The maximum concentration for formaldehyde emitted at 96 hours in emissions tests (following a ten-day conditioning period), shall not result in a modeled indoor air concentration greater than ½ the chronic reference exposure level (CREL) established by California Office of Environmental Health Hazard Assessment (OEHHA). Testing shall be in accordance with CA/DHS/EHLB/R-174 - *Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers* [1 pt].

6.1.5 Level 5 Criteria – 51-75% Reduction in Chemical and Pollutant Emissions

PHE 5-1: **51-75% Reduction of Toxic Chemicals & Media Pollutants** – Achieve an average 51-75% reduction of toxic chemicals & media pollutants in at least seven of the following twelve environmental life cycle impact categories: Global Warming, Acidification, Ozone Depletion, Eutrophication, Photochemical Smog, Human Health, Ecological Toxicity, Fossil Fuel Depletion, Habitat Alteration, Criteria Air Pollutants, Water Intake, Solid and Hazardous Waste. In these 7 out of 12 categories, reductions *must be achieved* for Global Warming, Human Health and Ecological Toxicity.

Quantification of toxic chemicals and media pollutants shall use the units of measurement for the Characterization Factors in the fifth column of Table 1. These characterization factors are defined in the US EPA Tool for the Reduction and Assessment of Chemical and other environmental impacts (TRACI).

Quantification shall be as shown in Table 1 above, with characterization factors as defined in the US EPA Tool for the Reduction and Assessment of Chemical and other environmental impacts (TRACI).

The baseline for these reductions is the inventories generated in PHE 2-2 & 2-3 in the year 2000 using Table 1 below, or a recognized and MTS approved industry baseline for building products.

[max 2 pts: as follows]

1 point for an average 51-75% reduction across 7 impact categories

1 additional point for an average 51-75% reduction across 12 impact categories

PHE 5-2: Supply Chain Stockholm Chemicals - identify all supply chain material & process inputs present at 1% (10 parts per thousand), including Stockholm Convention Persistent Organic Pollutants. [1 pt]

Document that no Stockholm Convention Persistent Organic Pollutants are released as process outputs (emissions) throughout the supply chain and at the point of manufacture at or above TRI reporting thresholds. [1 pt]

Document that no Stockholm Convention Persistent Organic Pollutants are used in supply chain materials & that no process inputs are at or above TRI reporting thresholds. [1 pt]

6.1.6 Level 6 Criteria – No or De Minimis Chemical and Pollutant Emissions

PHE 6-1: No or De Minimis Toxic Chemicals & Media Pollutants – Release no or de minimis amounts of toxic chemicals and media pollutants in at least seven of the following twelve environmental life cycle impact categories: Global Warming, Acidification, Ozone Depletion, Eutrophication, Photochemical Smog, Human Health, Ecological Toxicity, Fossil Fuel Depletion, Habitat Alteration, Criteria Air Pollutants, Water Intake, Solid and Hazardous Waste. In these 7 out of 12 categories, reductions *must be achieved* for Global Warming, Human Health and Ecological Toxicity.

Quantification of toxic chemicals and media pollutants shall use the units of measurement for the Characterization Factors in the fifth column of Table 1. These characterization factors are defined in the US EPA Tool for the Reduction and Assessment of Chemical and environmental impacts (TRACI).

The baseline for these reductions is the inventories generated in PHE 2-2 & 2-3 in the year 2000 using Table 1 above, or a recognized and MTS approved industry baseline for building products.

[max 3 pts: as follows]

2 points for 76% or greater average reduction across 7 impact categories

1 additional point for 76% or greater average reduction across 12 impact categories

6.2 Renewable Energy & Energy Reduction (RE&ER)

This category contains an initial achievement level that simply inventories renewable content of energy used and improvement of energy efficiency. Higher achievement levels require higher use of renewable energy and greater energy efficiency improvements. CO2 reductions are covered in 6.1. The highest achievement levels require substantial use of renewable energy. For purposes of this standard, renewable energy is defined in 4.19.

This category provides a reasonable and achievable pathway for building products to be documented as renewable over the supply chain and not contribute to climate change.

6.2.1 Level 1 Criteria – Energy Inventory

RE&ER 1-1: **Electrical and Thermal Energy Inventory** – For the manufacturing facility only, document 100% of production electrical and thermal energy requirements. Thermal energy is energy such as heat or steam for industrial, commercial, heating or cooling purposes, including through the sequential use of energy. For onsite generated energy, identify fuel type (e.g. natural gas, diesel oil, fuel oil, bauxite coal). For offsite generated energy (e.g. supplied electricity) document percent from renewable versus non-renewable sources. Energy inventory can be completed through utility bills and other available company data. [1 pt]

6.2.2 Level 2 Criteria – Use of Renewable Energy at Manufacturing Facility (1%) or Energy Reduction (0.2-0.5%)

RE&ER 2-1: 1% Renewable Energy or 0.2-0.5% Energy Reduction (from Inventory Baseline – For the manufacturing facility only, document that 1% of the total production energy requirements (electrical and thermal) are derived from renewable energy sources meeting Green-e requirements, or that there is a 0.2-0.5% energy reduction from the Inventory in RE&ER 1-1. This criterion can be demonstrated by the use of on-site owner generated renewable energy meeting Green-e requirements, renewable energy supplied from off site sources meeting green-e requirements, certified Green-e Power[2] or certified Green-e Tradable Renewable Certificates[3]. For energy reduction, this criterion can be demonstrated by a 0.2-0.5% energy reduction from the inventory as measured by total energy reduced per square yard of product or over an entire facility involved in making the certified product. [2 pts]

RE&ER 2-2: Cleaner and Greener Certification – Achieve at least Level Two Cleaner and Greener Certification[4]. [1 pt]

[2] Information on the Green-e Renewable Electricity Certification Program can be found at http://www.green-e.org/

[3] Information on the Green-e Tradeable Renewable Certificates can be found at http://www.green-e.org/what_is/dictionary/trc.html

[4] Cleaner & Greener Certification is explained at http://www.cleanerandgreener.org/certification/

6.2.3 Level 3 Criteria – Use of Renewable Energy at Manufacturing Facility (2-10%) or Energy Reduction (0.5-4%)

RE&ER 3-1, 3-2, 3-3: 2-10% Renewable Energy or 0.5-4% Energy Reduction (from Inventory Baseline – For the manufacturing facility only, document that 2-10% of the total production energy requirements (electrical and thermal) are derived from renewable energy sources meeting Green-e requirements or that there is a 0.5-4% energy reduction from the Inventory in RE&ER 1-1. This criterion can be demonstrated by the use of on-site owner generated renewable energy meeting Green-e requirements, renewable energy supplied from off site sources meeting Green-e requirements, certified Green-e Power or certified Green-e Tradable Renewable Certificates. For energy reduction, this criterion can be demonstrated by a 0.5-4% energy reduction from the inventory as measured by total energy reduced per square yard of product or over an entire facility involved in making the certified product. [RE 3-1: 2 pts – 2% RE or 0.5-1% ER; RE&ER 3-2: additional 2 pts – 5% RE or 1.1-2% ER; RE&ER 3-3: additional 2 pts – 8% RE or 2.1-4%ER. 6 pts max]

RE&ER 3-4: Certification of Climate Change Emission Reductions – Obtain Cleaner & Greener Certification of all climate change emission reductions. [1 pt]

6.2.4 Level 4 Criteria - Use of Renewable Energy at Manufacturing Facility (11-25%) or Energy Reduction (5-30%)

RE&ER 4-1, 4-2, 4-3: 11-25% Renewable Energy or 5-30% Energy Reduction (from Inventory Baseline – For manufacturing facility only, document that 11-25% of the total production energy requirements (electrical and thermal) are derived from renewable energy sources meeting Green-e requirements or that there is a 5-30% energy reduction from the Inventory in RE&ER 1-1. This criterion can be demonstrated by the use of on-site owner generated renewable energy meeting Green-e requirements, renewable energy supplied from off site sources meeting Green-e requirements, certified Green-e Power or certified Green-e Tradable Renewable Certificates. For energy reduction, this criterion can be demonstrated by a 5-30% energy reduction from the inventory as measured by total energy reduced per square yard of product or over an entire facility involved in making the certified product. [RE&ER 4-1: 2 pts - 11% RE or 5-7% ER; RE&ER-4-2: additional 2 pts – 15% RE or 8-20% ER; RE&ER 4-3: additional 2 pts – 20% RE or 21-30% ER. 6 pts max]]

6.2.5 Level 5 Criteria - Use of Renewable Energy at Manufacturing Facility (26-50%) or Energy Reduction (31-100%)

RE&ER 5-1, 5-2, 5-3: 26-50% Renewable Energy or 31-100% Energy Reduction (from Inventory Baseline – For manufacturing facility only, document that 26-50% of the total production energy requirements (electrical and thermal) are derived from renewable energy sources meeting Green-e requirements or that there is a 31-100% energy reduction from the Inventory in RE&ER 1-1. This criterion can be demonstrated by the use of on-site owner generated renewable energy meeting Green-e requirements, renewable energy supplied from off site sources meeting Green-e requirements, certified Green-e Power or certified Green-e Tradeable Renewable Certificates. For energy reduction, this criterion can be demonstrated by a 31-100% energy reduction from the inventory as measured by

total energy reduced per square yard of product or over an entire facility involved in making the certified product. [RE&ER 5-1: 2 pts – 26% RE or 31-40% ER; RE&ER-5-2: additional 2 pts – 35% RE or 41-50% ER; RE&ER 5-3: additional 4 pts – 50% RE or 51-100% ER. 8 pts max]

6.2.6 Level 6 Criteria - Use of Upstream Renewable Energy (1-50%) or Energy Reduction (0.5-100%)

RE&ER 5.5: 1-9% Renewable Energy or 0.5-7% Energy Reduction (from Inventory Baseline – For upstream product stages, document requirements as calculated in section 6.2.4 [3 pts]

RE&ER 5-6: 10-18% Renewable Energy or 8-20% Energy Reduction (from Inventory Baseline – For upstream product stages, document requirements as calculated in section 6.2.5 [2 pts]

RE&ER 6-1, 6-2: 19-100% Renewable Energy or 21-100% Energy Reduction (from Inventory Baseline – For upstream product stages, document that 19-100% of the total production energy requirements (electrical and thermal) are derived from renewable energy sources meeting Green-e requirements or that there is a 19-100% energy reduction from the Inventory in RE&ER 1-1. This criterion can be demonstrated by the use of on-site owner generated renewable energy meeting Green-e requirements, renewable energy supplied from off site sources meeting Green-e requirements, certified Green-e Power or certified Green-e Tradeable Renewable Certificates. For energy reduction, this criterion can be demonstrated by a 19-100% energy reduction from the inventory as measured by total energy reduced per square yard of product or over an entire facility involved in making the certified product. [RE&ER 6-1: 2 pts – 19-27% RE or 21-40% ER; RE&ER 6-2: additional 4 pts – 28-35% RE or 41-100% ER. 6 pts max.]

6.2.7 Cleaner Fuels & Substitute Materials for Manufacturers & Suppliers

RE&ER 7-1: Credit for Cleaner Fuels & Substitute Materials Reducing CO2 & Other Pollution

The baseline energy usage for the manufacturing facility and or supplier is converted to KWH. Coal fired plants generate on average 2.7 lbs of CO2/kwh and 0.3 grams of mercury (Hg)/1000 kwh according to the Minnesota Public Utilities Commission:
http://72.14.203.104/search?q=cache:YfXtCCZItuEJ:www.dsireusa.org/documents/Incentives/MN08R.pdf+average+co2+%26+mercury+emissions+per+KWH&hl=en&gl=us&ct=clnk&cd=8

Certifying manufacturers as well as suppliers that reduce 1% of this average amount due to switching to cleaner fuels and using supplementary materials reducing fuel use receive 3 pts and 2% would receive 6 pts. This takes into account credit for use of cleaner fuels including material substitution e.g., fly ash and slag.

See EcoSmart paper on supplementary materials use: http://www.sbtc.ca/Docs/SOS-CSCEPaper.pdf

Cleaner fuels and substitute materials must not add more pollutants listed in Appendix 1 to the environment over the supply chain/ life cycle than those they are eliminating.

The basis for this section is to:

- allow additional credit for very high energy use products such as cement and concrete and to build on the excellent work of EcoSmart: http://www.sbtc.ca
- provide additional credit for climate change and Hg reductions given the seriousness of this pollution
- CO2 is the standard metric for climate change pollution
- provide addition credit for reducing conventional energy due to annually rising energy costs, their adverse impact on the economy, exponentially increasing climate change, and substantial fuel shifting to coal due to rising oil and natural gas costs. About 100 new coal fired power plants are being proposed in the US without CO2 removal due to fuel shifting and increased demand on the grid which would have a substantial adverse impact on climate change and public health and environment.

[RE&ER 7-1: 3 pts – 1% Energy Pollution Reduction or 6 pts – 2% Energy Pollution Reduction. For Manufacturer & Supplier. 6 pts max.]

6.3 Biobased or Recycled Materials (MATLS)

Biobased materials are produced by sustainable agriculture as defined in 4.23, and *FSC Certified Wood* forest practices. Recycled materials are measured by percent recycled content by total product weight. Higher achievement levels require progressively higher levels of biobased materials and recycled content. This Category contains achievement levels ranging from simple inventorying of biobased and recycled materials at Level 1, to requiring substantial percent of biobased and recycled materials at high Levels.

This category provides a reasonable and achievable pathway for biobased and recycled building products to be documented over the supply chain.

6.3.1 Progressively higher levels of biobased and recycled materials are required by this section. The recycled content and biobased content shall be determined for all products in a product platform. Coal fly ash used as filler or binding agent qualifies as preconsumer/post industrial content only, as do other post industrial content fillers and binders.

Recycled materials are measured by the percent of pre consumer/post industrial or post consumer materials by weight. Biobased content is also measured in the same manner. This percentage is calculated by dividing the weight of the recycled or biobased content by the total weight of the finished product functional unit (e.g., one square yard for building products) and multiplying by 100. [(Biobased and/or Recycle Content Weight) / (Total Product Weight) x 100].

6.3.2 Level 1 Criteria –Materials Content Inventory

MATLS 1-1: Inventory Biobased and Recycled Content Materials – Document the recycled and biobased content. Recycled content shall be classified by pre-consumer/post industrial or post-consumer materials in accordance with ISO 14021 and the FTC Environmental Marketing Guides and the definitions set forth in this Standard. Biobased materials are those produced under sustainable agricultural practices as described in 4.23 and incorporate the Best Management Practices for Soil Erosion and Runoff Control as described in 4.1. This includes FSC Certified Wood practices as well as USDA Organic practices.

Prerequisite for composite wood - Certification to the Composite Panel Association's EPP Specification CPA 1-02 shall be used as documentation for appropriate recycled content credit for all composite wood products. CPA 1-02 specifies a minimum of 100% recycled and recovered wood content. Documentation for certifying to CPA's spec must be provided.

[2 pts]

6.3.3 Level 2 Criteria – 5-24% Biobased or Recycled Content

MATLS 2-1, 2-2, 2-3, 2-4 : 5-24 % Biobased or Recycled Content or Environmentally Preferred Material – Document that - 5-20% of the material feedstock is composed of biobased or recycled materials. Biobased materials include FSC Certified Wood. Calculation of material contributions shall conform to the following:

- Post-consumer recycled content – Applied at a ratio of 1:1 (e.g. every 1% of the product sourced from 100% post-consumer material results in 1% recycled content credit);
- Pre-consumer recycled content – Applied at a ratio of 1:0.5 (e.g. every 1% of the product sourced from 100% pre-consumer material results in 0.5% recycled content credit); and/or
- Biobased content - Applied at a ratio of 1:1 (e.g. every 1% of the product sourced from 100% biobased material results in 1% biobased content credit).
- Environmentally preferred materials – Materials used in the product that are designated as preferred utilizing an ISO 14040 Compliant LCA. The material will apply at the ratio of 1:1 (e.g. every 1% of the product sourced that is 100% LCA certified results, in 1% material content credit).
- Specific weighted portions of a material cannot be counted twice. Therefore a material cannot be counted as 100% biobased and 10% Post-consumer recycled content. It could however be 4% biobased and 20% environmentally preferred materials content

[4 pts max; MATLS 2-1: 1 pt – 5%; MATLS 2-2: additional 1 pt – 10%; MATLS 2-3: additional 1 pt – 15%; MATLS 2-4: additional 1 pt – 20%]

6.3.4 Level 3 Criteria – 25 -44% Biobased or Recycled Content

MATLS 3-1, 3-2, 3-3, 3-4: 25 -44% Biobased or Recycled Content – Document that 25-44% of the material feedstock is comprised of biobased or recycled materials. Calculation of material contributions shall be as described in Section 6.3.3.

[4 pts max; MATLS 3-1: 1 pt – 25%; MATLS 3-2: additional 1 pt – 30%; MATLS 3-3: additional 1 pt – 35%; MATLS 3-4: additional 1 pt – 40%]

6.3.5 Level 4-6 Criteria – 45-100% Biobased or Recycled Content

MATLS 4-1 to 6-5 Biobased & Recycled Content Document that 45-64% of the material feedstock is comprised of biobased or recycled materials. Calculation of material contributions shall conform to the following:

- Post-consumer recycled content – Applied at a ratio of 1:1 (e.g. every 1% of the product sourced from 100% post-consumer material results in 1% recycled content credit);
- Pre-consumer recycled content – Applied at a ratio of 1:0.5 (e.g. every 1% of the product sourced from 100% pre-consumer material results in 0.5% recycled content credit); and/or

MATLS 4-2: 45%	Recycled or Biobased	[1 pt]
MATLS 4-3: 50%	Recycled or Biobased	[2 pts]
MATLS 4-4: 60%	Recycled [3 pts] Biobased	[4 pts]
MATLS 5-2: 70%	Recycled or Biobased	[2 pts]
MATLS 5-3: 75%	Recycled [2 pts] Biobased	[3 pts]
MATLS 5-4: 80%	Recycled [3 pts] Biobased	[4 pts]
MATLS 6-2: 88%	Recycled or Biobased	[2 pts]
MATLS 6-3: 91%	Recycled [2 pts] Biobased	[4 pts]
MATLS 6-4: 94%	Recycled [3 pts] Biobased	[4 pts]
MATLS 6-5: 97%	Recycled [4 pts] Biobased	[5 pts]

[20 pts max]

Note: to qualify for biobased credits at this level, biobased materials must be sourced from FSC Certified forests, or agricultural operations which comply with BMPs as defined in section 4.1 and are certified as organic or conform with transitional organic requirements (e.g. any pesticides or fertilizers used cannot be derived from synthetic (i.e. petroleum) sources, & no added genetically modified organisms), or are FSC Certified Wood. For transitional organic, the transitional fields for crop production must stay transitional for 3 years minimum. Transitional means that pesticide and fertilizer use has ceased, but the fields are not certified organic.

6.4 Facility or Company Based (MFG)

This Category encourages corporate wide environmental responsibility and achievements. Achievement levels range from simple adoption of an environmental policy and having an

environmental management system, to supply chain activities like LCA and disclosing the percentage of sustainable/EPP building products purchased, made, and sold.

This Category documents corporate wide achievements in addition to those for sustainable/EPP building products.

6.4.1 Level 1 Criteria – EMS Policy & Social Indicator Reporting

MFG 1-1: Environmental Management System Environmental Policy & Publicly Available Targets –the Manufacturer shall document a formal Environmental Management System & Policy. and publicly declare its environmental targets, objectives and metrics pursuant to ISO 14001. Public declaration shall be via one of the following two vehicles: 1 – Company's web site; 2 – Company's publicly available annual report. [1 pt]

MFG 1-2: Social Indicator Reporting for Manufacturers – Report social indicator metrics as shown below in Table 2 for the manufacturer certifying the product. It is not the intent of this requirement that companies supplying chemicals that end up at de minimis levels in the product being evaluated, be contacted and asked for this information. The reporting of employment information required in Table 2 can be made by either a detailed breakdown or general summary of compliance.

[1 pt manufacturer submitting for certification]

.

Table 2 – Social Indicators for Sustainable/EPP Building Product Standard
(source: Global Reporting Initiative)

Indicator		Description
Labor practices and decent work	Employment	Breakdown of workforce, employment type, employment contract workforce retained vs. temporary workforce.
		Net employment creation, turnover
		Employee benefits, beyond those legally mandated
	Health & Safety	Recording and notification of occupational accidents, injuries, illnesses and disease.
Human Rights	Strategy & Mgt	Description of policies and procedures dealing with all aspects of HR relevant to operations including monitoring mechanisms and results.
		Description of policies and procedures to evaluate and address human rights performance within the supply chain and contractors, including monitoring systems and results.
	Child Labor	Description of policy and procedures excluding child labor including monitoring systems and results.

Society	Community	Policies to manage impacts on communities in areas affected by activities as well as description of procedures to address this issue, including monitoring systems and results.

6.4.2 Level 2 Criteria – Supplier Social Reporting, Targets & LCA

MFG 2-1: Social Indicator Reporting for Suppliers – Report social indicator metrics as shown above in Table 2 for each supplier company whose product constitutes at least 3% of the product being certified. It is not the intent of this requirement that companies supplying chemicals that end up at de minimis levels in the product being evaluated, be contacted and asked for this information. The reporting of employment information required in Table 2 can be made by either a detailed breakdown or general summary of compliance.

[1 pt. for supplier reporting]

MFG 2-2: LCA Process – Manufacturer shall have competed a Life-Cycle Assessment (LCA) process for the product undergoing assessment. The LCA shall be competed in accordance with the ISO 14040 standard for life cycle assessment. [4 pts]

6.4.3 Level 3 Criteria – Closed Loop Process

MFG 3-1: Transparent Secondary Materials Reclamation System - A manufacturer or supplier must have or insure/facilitate a materials management system whereby it takes materials that start as building products and are reclaimed into secondary products different than the certified product with a reclamation program in place, and with no increased environmental impact than the original manufacturing process. [1 pt]

MFG 3-2: Transparent Materials Reclamation System - A manufacturer or supplier must have or insure/facilitate an operational materials management system whereby secondary materials (e.g. post-consumer and post-industrial/pre-consumer recycled materials) are reclaimed in the same product system from which they originated with a reclamation system in place, and with no increased environmental impact than the original manufacturing process. [1 pt postindustrial or 2 pts postconsumer]

MFG 3-3: Transparent Repurpose Materials Reclamation System - A manufacturer or supplier must have or insure/facilitate a materials management system whereby it brings back materials that start as building products and are repurposed/refurbished/reused as equivalent building products through the reclamation program, and with no increased environmental impact than the original manufacturing process. [2 pts]

MFG 3-1 to 3-3: Reclamation processes must be made available to greater than 50% of customer base. Credits may be obtained individually or in any combination as the manufacturer's reclamation program applies.

6.4.4 Level 4 Criteria – Design for Environment

MFG 4-1: Identify Adopted Design for Environment Process – As a minimum, manufacturer shall have completed the Design for Environment Product Matrix included in the State of Minnesota's Design for Environment Toolkit[5] or equivalent. [2 pts]

6.4.5 Level 5 Criteria – EMS Certification

MFG 5-1: Environmental Management System Certification – Manufacturer shall document certification of environmental management system to ISO 14001, EPA Performance Track, or equivalent. [2 pts]

6.4.6 Level 6 Criteria - Transaction Disclosures

MFG 6-1: Sustainable Building Product Transaction Disclosures – Manufacturer shall disclose the percent (%) on US dollar basis, of sustainable building products purchased, made and sold. [2 pts]

6.5 Reclamation, Sustainable Reuse & End of Life Management (EOL)

This Category encourages product reuse and reclamation, thereby reducing waste to landfill and incineration. It requires that product performance standards be met, and also requires extended life of the system including proper installation and maintenance. This category accounts for downcycling of goods, and materials from their highest to lowest use after production and prior to final disposition, encouraging reuse and avoiding disposal.

This Category helps further government and industry goals to avoid landfills and incineration and subsequent pollution, and documents building product reclamation over the supply chain. A substantial percent of used building products ends up in landfills with 40% of waste going to landfills taking construction materials *"Are Flooring Products Making the Grade,"* Floor Covering Weekly (*Apr. 12, 2004, J. Goodman).*

6.5.1 Level 1 Criteria – Reclamation Program and Product Durability

EOL 1-1: Operational Reclamation and/or Sustainable Reuse Programs – Manufacturer shall describe where operational reclamation and/or sustainable reuse opportunities exist for the manufacturer's product to be certified. This means that the product is recyclable pursuant to the FTC Guides 16 CFR § 260.7(d) or reusable pursuant to other established federal, state, or local guidelines. [1 pt]

EOL 1-2: Performance Durability – Manufacturer shall demonstrate the product meets the applicable performance durability testing requirements as listed in EOL 2-1. [1 pt]

[5] The Design for Environment Toolkit can be found at http://www.mosa.state.mn.us/p2/dfe.cfm

6.5.2 Level 2 Criteria – Extended Product Life & 1-6% Product Reclamation

EOL 2-1: Extended Product Life of System - Extended Product Life of the System requires the manufacturer certifies pursuant to section 7, that: the certified product meets the following applicable performance durability requirements for its product:. Approved consensus or recognized government performance standard for the applicable building product or material submitted by the manufacturer in its cerification application.

In addition, building product manufacturers and dealers are to recommend to the customer in writing that recommended manufacturer maintenance procedures are followed. [2 pts]

EOL 2-2 to 2-4: 1-6% Product Reclamation and/or Reuse – Manufacturer shall document product reclamation and/or reuse rate of -1-6% . Reclamation and/or reuse rate shall be calculated as follows:

$$\text{Reclamation-Reuse Rate} = \frac{\text{kgs of all product reclaimed (annually)}}{\text{kg of annual production of product being certified}}$$

EOL 2-2: 1 pt – 1-2%
EOL 2-3: additional 1 pt – 3-4%
EOL 2-4: additional 1 pt – 5-6% .

Total of 3 pts maximum

[1 point awarded for every 2% reclamation-reuse rate from 1% to 6%] Higher points in the 1 to 6% range will reward new recycling programs and encourage manufacturers to recycle.

6.5.3 Level 3 Criteria – 7-12% Product Reclamation

EOL 3-1 to 3-3: 7-12% Product Reclamation and/or Reuse – Manufacturer shall document product reclamation and/or reuse rate of 7-12% . Reclamation and/or reuse rate shall be calculated as described in Section 6.5.2 [1 point awarded for every 2% reclamation rate.]

EOL 3-1: 1 pt – 7-8%;
EOL 3-2: additional 1 pt – 9-10%
EOL 3-3: additional 1 pt - 11-12%.

Total of 3 pts maximum

6.5.4 Level 4 Criteria – 13-20% Product Reclamation-Reuse

EOL 4-1 to 4-4: 13-20% Product Reclamation and/or Reuse - Manufacturer shall document product reclamation-reuse rate of 13-20% . Reclamation-reuse rate shall be calculated as described in Section 6.52 [1 point awarded for every 2% reclamation rate.]

EOL 4-1: 1 pt – 13-14%
EOL 4-2: additional 1 pt - 15-16%
EOL 4-3: additional 1 pt - 17-18%
EOL 4-4: additional 1 pt - 19-20%

Total of 4 pts maximum

6.5.5 Level 5 Criteria – 21-30% Product Reclamation-Reuse

EOL 5-1 to 5-5: 21- 30% Product Reclamation and/or Reuse - Manufacturer shall document product reclamation-reuse rate of 21-30% . Reclamation-reuse rate shall be calculated as described in Section 6.52 [1 point awarded for every 2% reclamation rate.]

EOL 5-1: 1 pt – 21-22%
EOL 5-2: additional 1 pt – 23-24%
EOL 5-3: additional 1 pt – 25-26%
EOL 5-4: additional 1 pt - 27-28%
EOL 5-5: additional 1 pt - 29-30%

Total of 5 points maximum

6.5.6 Level 6 Criteria - Greater than 30% Product Reclamation-Reuse

EOL 6-1 to 6-11: Greater than 30% Product Reclamation and/or Reuse - Manufacturer shall document product reclamation-reuse rate of greater than 30%. Reclamation-reuse rate shall be calculated as described in Section 6.5.2 [1 point awarded for every 2% reclamation-reuse rate up to 40%.] *All points awarded above 38% reclamation are innovation points*.

EOL 6-1: 31-32% – 1 pt
EOL 6-2: 33-34% – additional 1 pt
EOL 6-3: 35-36% – additional 1 pt
EOL 6-4: 37-38% – additional 1 pt

EOL 6-5: 39-40% – additional 2 pts
EOL 6-6: 41-49% - additional 2 pts
EOL 6-7: 50-59% - additional 2 pts
EOL 6-8: 60-69% - additional 2 pts
EOL 6-9: 70-79% - additional 2 pts
EOL 6-10: 80-89% - additional 2 pts
EOL 6-11: 90-100% - additional 2 pts

Total of 14 innovation points maximum: EOL 6-5 to EOL 6-11.

6.6 Innovation [15 pts max. for any innovation credits whether or not it includes 6.6.1 – to 6.6.2]

6.6.1 Innovation credits must be applied for and approved and are submitted by applicants to address topics that will further the promotion of Sustainable Building Products.

6.6.2 Specific Innovation Credit for Dematerialization:

Credit is provided for process, and product or product lines that provide equal function using less material by percent weight per square foot, which reduces impacts as measured over all product stages. The intent for this credit is to use design innovation to achieve dematerialization. [2-5 pts].

6.7 Sustainable/EPP Building Product Supply Chain Achievement Matrix

Provided below in Table 3 is the Sustainable/EPP Building Product Supply Chain Achievement Matrix, summarizing each of the criteria presented above.

Sustainable/EPP Building Product Supply Chain Achievement Matrix

Covers all buildingproduct stages: raw materials, transportation, manufacturing, use, & final disposition

Sustainable Attribute Performance Levels Approaching Sustainable/ EPP Building Products	**Safe for Public Health & Environment (PHE) 31 pts max.**	**Renewable Energy & Energy Reduction (RE&ER) 42 pts max**	**Biobased or Recycled (MATLS) 30 pts**	**Facility or Company Based (MFG) 18 pts**	**Reclamation, Sustainable Reuse, & End of Life Management (EOL) 23 pts + 14 pts innovation**

Level 1 **[all pre-requisites]** **[point level]**	**PHE 1-1**: Feedstock Inventory Documentation [1pt] **PHE 1-2**: Input Stockholm Chemicals [1pt] PHE 1-3: Output Stockholm Chemicals [1 pt]	**RE&ER 1-1**: Energy Inventory [1 pt] Manufacturing Facility Only	**MATLS 1-1**: Inventory Biobased and Recycled Content Materials [2pts]	**MFG 1-1:** EMS Environmental Policy & Targets [1 pt] **MFG 1-2:** Social Equity Reports [1 pt. Manufacturer]	**EOL 1-1:** Operational Reclamation Program [1 pt] **EOL 1-2**: Performance Durability [1 pt]
Level 2 **[point level]**	**PHE 2-1**: Inventory Human Health and Ecological Chemical Emissions [2 pts] **PHE 2-2**: Inventory Air, Water & Waste Pollutants [2 pts] PHE 2-4: Reductions Beyond Compliance [8pts]	**Manufacturing Facility Only:** **RE&ER 2-1:** 1% Renewable or 0.2-0.5% Energy Red. [2 pts] **RE&ER 2-2:** Cleaner & Greener Cert. Level 2[1pt]	**MATLS 2-1**: 5% biobased or recycled content [1 pt] Individual points can be achieved for postconsumer, biobased &/or post industrial/preconsumer. **MATLS 2-2:** 10% [1pt] **MATLS 2-3:** 15% [1pt] **MATLS 2-4:** 20% [1pt]	**MFG 2-1:** Social Equity Reports [1 pt. Supplier] **MFG 2-2:** LCA Process [4 pts]	**EOL 2-1:** Extended Product Life of System [2 pts] **EOL 2-2:** — 2-4, 1-6% Product Reclamation & Reuse [1 pt every 2%]
Level 3 **[point level]**	**PHE 3-1:** 10-25% Reduction in Toxic & Media Pollutants (2 pts) **PHE 3-2:** Minimize Indoor Air VOCs (1pt) **PHE 3-3**: Minimize Indoor Air Carcinogenic VOCs [1pt] PHE 3-4: Green Cleaning Procedures [1 pt] PHE 3-5: Green Primary Installation Materials [2 pt]	**Manufacturing Facility Only:** **RE&ER 3-1**: 2% Renewable or 0.5-1% Energy Red. [2 pts] **RE&ER 3-2:** 5%, 1.1-2% [2pts] **RE&ER 3-3:** 8%, 2.1-4% [2pts] **RE&ER 3-4:** Climate Change Emission Reductions [1pt]	**MATLS 3-1**: 25% biobased or recycled content [1 pt] individual points can be achieved for postconsumer, biobased &/or post industrial/preconsumer **MATLS 3-2:** 30% [1pt] **MATLS 3-3:** 35% [1pt] **MATLS 3-4:** 40% [1pt]	**MFG 3-1 – 3-3** : Transparent Materials Reclamation Systems [5 pts max]	**EOL 3-1-3-3:** 7-12% Product Reclamation & Reuse [1 pt every 2%]
Level 4 **[point level]**	**PHE 4-1**: 26-50% Reduction in Toxic & Media Pollutants [2 pts] **PHE 4-2**: Minimize Indoor Formaldehyde Emissions [1pt]	**Manufacturing Facility Only:** **RE&ER 4-1**: 11% Renewable or 5-7% Energy Red. [2pts] **RE&ER 4-2:** 15%, 8-20% [2pts] **RE&ER 4-3:** 20%, 21-30% [2pts]	Individual points can be achieved for postconsumer, biobased &/or post industrial/preconsumer. Biobased must be organic w/BMPs Separate calculation for carpet & fabric & apparel from level 4 through 6 **MATLS 4-2: 45**% [1pt] **MATLS 4-3:** 50% [2pts] **MATLS 4-4:** 60% [3, 4 pts]	**MFG 4-1**: Identify Adopted Design for Environment Process [2 pts]	**EOL 4-1 – 4-4: 13-** 20% Product Reclamation & Reuse [1 pt every 2%]

Level 5 **[point level]**	**PHE 5-1**: 51-75% Reduction in Toxic & Media Pollutants [2pts] PHE 5-2: Supply Chain inventory and limit on Stockholm Chemicals [3 pts total]	**Manufacturing Facility Only:** **RE&ER 5-1**: 26% Renewable or 31-40% Energy Red. [2 pts] **RE&ER 5-2:** 35%, 41-50% [2pts] RE&ER 5-3: 50%, 51-100% [4 pts] **Upstream: RE&ER 5-5**: 1-9%, 0.5-7% [3 pts] RE&ER 5-6: 10-18%, 8-20% [2 pts]	Individual points can be achieved for postconsumer, biobased &/or post industrial/preconsumer. Biobased must be organic w/BMPs **MATLS 5-2: 7**0% [2pts] **MATLS 5-3:** 75% [3pts] **MATLS 5-4:** 80% [4pts]	**MFG 5-1 :** Environmental Management System Certification [2 pts]	**EOL 5-1-5-5: 21-**30% Product Reclamation & Reuse [1 pt every 2%]
Level 6 **[point level]**	**PHE 6-1**: No or De Minimis Toxic & Media Pollutants [3 pts]	Upstream & Cleaner Fuels : **RE&ER 6-1:** 19-27% Renewable or 21-40% Energy Red. [2 pts] **RE&ER 6-2:** 28-35%+, 41-100% [4pts] RE&ER 7-1: Cleaner fuels. 1% [3pts] 2% [6pts]	Biobased or recycled content. Individual points can be achieved for postconsumer, biobased &/or post industrial/preconsumer. Biobased must be organic w/BMPs **MATLS 6-2:** 88% [2pts] **MATLS 6-3:** 91% [2, 4 pts] **MATLS 6-4:** 94% [2, 4 pts] **MATLS 6-5:** 97% [5pts]	**MFG 6-1**: Sustainable/EPP Building Product Transaction Disclosures [2 pts]	**EOL 6-1:** 30% or More Product Reclamation & Reuse [1 pt every 2% until 38%]. [2 pts every 10% from 39-100%]

7. CERTIFICATION OF COMPLIANCE WITH STANDARD

In order to claim conformance with this standard, manufacturers must comply with the following requirements.

7.1 **Declaration of Level of Conformance and Metrics**

7.1.1 Building Product manufacturer shall provide Statement of the Achievement Level it has attained based on specific Sustainable/EPP Attribute Performance for all product stages. The Gold/EPP and Platinum/EPP levels will be highly differentiated recognizing superior performance. Achievement levels are designated as follows:

ACHIEVEMENT LEVELS:

Sustainable Building Product Achievement	28 to 40 points
Silver Sustainable Building Product Achievement	41 to 60 points
Gold\EPP Sustainable Building Product Achievement	61 to 89 points
Platinum\EPP Sustainable Building Product Achievement:	90 to 165 points

7.1.2 Building Product manufacturer shall provide metrics that demonstrate the specific achievement level and these will be made publicly available. Manufacturer shall disclose by weight, achieved percent total post industrial/preconsumer and post consumer recycled content, and percent biobased content.

7.1.3 Building Product manufacturers shall provide results including of any publicly available life cycle assessments, if used, that comply with ISO LCA General Principles Standard pursuant to 5.1

7.1.4 Certification is good for 3 years.

7.1.5 The minimum certification level of 28 points for Certified Sustainable Building Product Achievement will be evaluated two years after Standard first amendment, to adjust the point total toward higher achievement.

7.2 Express Warranty or Equivalent Option. Building Product suppliers and manufacturers adhering to this standard expressly warrant in a certification in section 7 submitted along with the level of sustainable attributes achieved in section 6 for their products: "The building product vendor/manufacturer expressly warrants as part of its purchase agreement, that the data and responses to the information requests of this standard are accurate and reliable to the best of the building product vendor's/manufacturer's knowledge."

This express warranty is a general requirement for adherence to this standard; this warranty and its documentation will be publicly available.

7.2.1 Equivalent Option. An equivalent option can be used satisfying § 7.1, in lieu of providing the express warranty above for general adherence to this standard. To do this, building product suppliers and manufacturers must certify in writing that their communications regarding this standard and applicable sections, comply with the Federal Trade Commission *Environmental Marketing Guides* at 16 C.F.R. Part 260 (1998) for accurate, reliable, and documented communications: http://www.ftc.gov/bcp/grnrule/guides980427.htm.

This certification must also state that "both the express and implied meaning of the certification about the data, responses to information, and provisions of the standard, is reasonable and based on competent and reliable scientific evidence prepared by qualified professionals in the relevant area, using procedures to produce accurate and reliable results." See 16 C.F.R. § 260.5. Further, such certification and its documentation will be publicly available.

7.3Auditing

7.3.1 Submittal, Data Audit & Approval: Building Product manufacturers and suppliers must submit to MTS, certification documentation and the required fee. All applications and necessary documentation submitted will undergo a certification and data audit and review conducted by MTS or its agent, and within 60 days a response for the data audit and review will be generated which can be if all required certifications are made, a letter of

compliance by MTS and right to use the label pursuant to section 5.2. This letter of compliance constitutes a recognized product certification.

One Hundred percent of all certifications will undergo this data audit and review.

7.3.2 Random field audits at no additional charge to the audited party, will be conducted as follows:

- **Sustainable Building Product Achievement:** 10% of certified population audited
- **Silver Sustainable Building Product Achievement:** 25% of certified population audited.
- **Gold/EPP Sustainable Building Product Achievement:** 100% of certified population audited
- **Platinum/EPP Sustainable Building Product Achievement:** 100%of certified population audited

The preceding field audit percentages are based on the greater need to validate the accuracy of higher level claims.

7.4Decertification

7.4.1 Upon a bona fide showing of noncompliance with the Standard including permitted labeling, MTS will require a certifier to demonstrate that its certification with the Standard is accurate and not misleading. A certification can be decertified by MTS where the certification is materially inaccurate or misleading, and after written notification, the certifier has not demonstrated to the contrary. A hearing may be requested by the certifier, and a appeal may be made to the MTS Board which will decide the matter within 30 days and whose decision is final with no right of review.

Appendix A (Informative)

Guidance on the Use of the Sustainable/EPP Building Product Standard

A.1 General Guidance

The leading stakeholders in the building product industry are striving to become more sustainable. The global building product Industry uses many chemicals and processes affecting human health and environment. Encouragingly, a number of corporate building product leaders have substantially reducing their environmental burdens, while improving social and economic equity throughout the supply chain.

This Sustainable/EPP Building Product Standard is a way for leaders in the industry to foster innovation and capture environmental, economic and social benefits associated with a transition to sustainability. Participants in this Standard recognize that a major transition is necessary given the "weight of evidence" regarding the condition of the global environment and need for improved economic and social prosperity. There is a great opportunity to create life-affirming sustainable products with substantial global value.

By applying this Standard, stakeholders throughout the building product supply chain will significantly and continuously improve their sustainable product performance realizing:

- Design innovation by thoughtful consideration of materials and resources.
- Value added materials and products designed for safe reclamation and reuse.
- Ecological restoration.
- Long term strengthened customer relationships by offering cutting edge solutions to environmental problems.
- A shared environmental agenda serving local communities.
- Reduced liability and need for regulation.
- Compatibility with other market trends such as clean vehicles, sustainable government procurement, and growing consumer demand for sustainable products.

A.2 Sustainably Produced Biobased Material Performance Attributes

- Enhance environmental quality and natural resources including local watersheds, native vegetation, habitat and forest ecosystems
- Reduce and eliminate toxic substances
- Reduce release of green house gases; nitrous oxide, methane, carbon dioxide
- Reduce reliance on non-renewable resources and increased use of renewable resources and energy
- Diversify crops (including livestock) and cultural practices to enhance the biological and economic stability of the farm

- Minimize reliance on purchased inputs; fertilizers, pesticides, irrigation water, energy, chemicals
- Develop biological systems which do not need high levels of material inputs
- Increase (vs. decline) soil productivity through; reduced topsoil erosion and compaction, replenishing soil organic matter, improving water holding capacity, biological activity; reducing soil salinization of soils
- Reduce or eliminate non-point source of water pollutants including sediments, salts, fertilizers (nitrates and phosphorus), pesticides, and manure
- Reduce eutrophication and "dead zones" due to nutrient runoff affecting many rivers, lakes, and oceans
- Minimize water quality impacts on surface water, ground water, drinking water supplies, loss of wetlands, wildlife habitat and fishery production
- Improve local market systems
- Minimize mono-culture commodities systems
- Improve rural prosperity
- Increase farm profitability and competitiveness (e.g. reduced or optimized costs of inputs vs. yield losses)
- Improve local economic development
- Reduce depopulation of farm communities
- Provide Healthy & Humane Care of Livestock. See these references:

http://www.sustainableagriculture.net/vision.php - National Campaign for Sustainable Agriculture
http://www.thefoodalliance.org/guidingprinciples.htm - Food Alliance
http://www.mtn.org/iasa/susagdef.htm - Alliance for Sustainability
http://www.hsus.org/ace/11527 - Humane Society of the United States
http://www.sd-commission.gov.uk/pubs/curry/01.htm - Sustainable Development Commission (UK) - see Box 1

A.3 Specific Guidance

Recycled Content Background. "[T]he materials that have been recovered or otherwise diverted from a waste stream, [can] be either during the manufacturing process (pre-consumer), or after consumer use (post consumer). To the extent the source of recycled content includes pre-consumer material, the manufacturer or advertiser must have substantiation for concluding that the pre-consumer material would otherwise have entered a waste stream. In asserting a recycled content claim, distinctions may be made between pre-consumer and post-consumer materials. Where such distinctions are asserted, any express or implied claim about the specific pre-consumer or post consumer content of a product or package must be substantiated (16 C.F.R. § 260.7 (e)."

For products or packages that are only partially made of recycled material, a recycled claim should be adequately qualified to avoid consumer deception about the amount, by weight, of recycled content in the finished product or package. (§ 260.7 (e)."

Notwithstanding the above, it is not the intent of this Standard to limit opportunities for recycling of any waste materials. Consequently, liquid or semi-liquid wastes will also receive the credit point(s) if they meet the above criteria established by the FTC for solid wastes.