

GREEN PRODUCT STANDARDS

SUMMARY

The Green Product Standards industry develops and promotes standards to certify various products as "Green". Currently there are numerous players involved (a few depicted) and approaches taken to certify a product as "Green".

In general, certification standards can be:

- Single attribute, multi-attribute, or cover the life cycle of a product
- Consensus based and transparent or developed and managed solely by industry trade associations
- Updated and changed when required following defined processes or protected from change
- Tiered to differentiate those products that go the extra mile to develop best practices or based on meeting a "good-enough" standard resulting in no product differentiation
- Used to evaluate a product by an independent third party or by the product manufacturer with no oversight

As a result of this variability, incomplete assessments, confusion, and green-washing abound in the market place.

Fortunately, progress is being made on a number of fronts to mitigate these challenges and shortcomings.

- Consensus based and transparent standards have evolved. These standards typically address a single or few attributes and are for a specific product category. Examples include the Forest Stewardship Council and Certified Organic Products.
- Organizations are defining and evolving green product certifications from a Life Cycle Assessment perspective. These assessments take into account the environmental impacts from raw material extraction through to end-of-life and disposal.
- Existing organizations are evolving their certifications to incorporate a Life Cycle Assessment perspective. An example of this is the USGBC's hopefully future incorporation of Life Cycle Assessments into their certification process.

The remainder of this document will:

- Briefly cover single and multi attribute standards
- Describe Life Cycle Assessment Standards in a bit more detail
- Conclude with a list of links that can be referenced for additional detail



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CONTACT

Peter Locke, MBA, LEED AP
Managing Director
TerraLocke Sustainability Consultants
773.551.0761
peterlocke@terralocke.com

STANDARDS

Standards are typically grouped into one of three categories: Single Attribute, Multi Attribute, or Life Cycle Assessment Standards.

SINGLE ATTRIBUTE STANDARDS

Single Attribute Standards address only one aspect of a material's impact, such as indoor air quality or recycled content. An example is CRI's Green Label and Green Label Plus Standard. This standard addresses low chemical emissions with the goal of ensuring good indoor air quality.



MULTI ATTRIBUTE STANDARDS

Multi Attribute Standards, as the category name suggests, address any of a number of attributes such as human toxicity, energy conservation, ozone depletion, recycled content, indoor air quality to name a few. Examples include Scientific Certification System (CSC) and DGS



LIFE CYCLE ASSESSMENT STANDARDS

Life Cycle Assessment Standards chart a range of environmental impacts of products in every state of their life from raw material extraction to disposal. The commonly acknowledged 12 Environmental Impact Categories and 7 Stages, also called Process Elements, are listed below. Reference Appendix A for a process flow diagram of the 7 Stages / Process Elements.

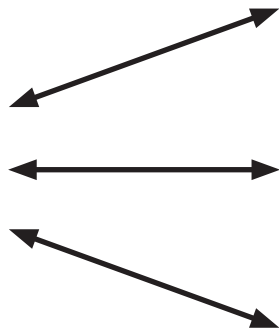
As part of a Life Cycle Assessment, each of the 12 environmental impacts would be assessed during each of the 7 stages.

PROCESS ELEMENTS

- Raw Materials
- Pre-Processing
- Production
- Distribution
- Installation
- Use & Maintenance
- Composting, Recycling, Disposal

ENVIRONMENTAL IMPACT CATEGORIES

- Global Warming
- Acidification
- Eutrophication
- Habitat Alteration
- Natural Resource Depletion
- Solid Waste Generation
- Ecological Toxicity
- Human Toxicity
- Ozone Depletion
- Smog Formation
- Indoor Air Quality
- Embodied Energy Content



INTERNATIONAL ORGANIZATION OF STANDARDS

The International Organization of Standards (ISO) is the main source for a Life Cycle Assessment Standard. Currently ISO has the following 5 published Environmental Management – Life Cycle Assessment standards.

- ISO 14040: Principles and Framework
- ISO 14044: Requirements and Guidelines
- ISO 14047: Examples of application of ISO 14042 (Withdrawn standard - Life Cycle Impact Assessment)
- ISO 14048: Data Documentation Format
- ISO 14049: Examples of application of ISO 14041 (Withdrawn standard - Goal and Scope Definition and Inventory Analysis)



BUILDING FOR ENVIRONMENTAL AND ECONOMIC SUSTAINABILITY (BEES)

Characteristics of this standard include:

- Developed by the National Institute of Standards and Technologies (NIST).
- Environmental performance is measured utilizing the life cycle assessment approach specified by the ISO 14040 series of standards.
- Economic performance is measured using the ASTM standard life-cycle method.
- Environmental and economic performance measurements are combined using the ASTM standard for Multi-Attribute Decision Analysis.
- BEES' software provides a tool for selecting cost-effective, environmentally preferable building products.
- Contains actual environmental and economic performance data for 230 building products
- BEES 4.0 software package that can be downloaded from their website. Reference the LINK section below for details.

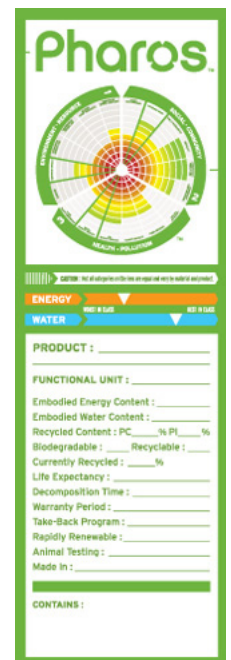


THE PHAROS PROJECT

The Pharos Project

- Seeks to define a consumer-driven vision of truly green building materials
- Looks to establish a method for evaluation that is in harmony with principles of environmental health and justice.
- Addresses a slightly different list of Environmental Impacts and includes some Social Impacts in its standard such as Occupational Health and Safety, Consumer Health and Safety, Fairness and Equity, Corporate Leadership, and Community Relations
- Does not incorporate specific ISO standards within its standard.

Pharos



SMART CONSENSUS SUSTAINABLE PRODUCTS STANDARD

Characteristics of this standard include:

- Instituted by The Institute for Market Transformation to Sustainability (MTS)
- Based on a set of 24 criteria that are grouped into one of three categories: Pollution Reduction Minimums, Reporting and Labeling Requirements, and Certification Process. For a list of the criteria reference Appendix B
- Covers Building Products, Fabric, Apparel, Textile, and Flooring
- Tiered system where products are evaluated and rated Sustainable, Sustainable Silver, Sustainable Gold, or Sustainable Platinum
- SMART Standard Consensus Process was Accredited by the American National Standards Institute (ANSI)
- SMART stands for Sustainable Materials Rating Technology



MINIMAL OR NO STANDARD

For those numerous products for which minimal or no certification standard currently exists, the following questions can be asked to help guide the decision making process when comparing two similar products.

- Which product is less hazardous?
- Which is reusable or more durable?
- Which is made from recycled materials? Do we really need to buy a virgin product when the recycled version is just as good?
- What happens to the product at the end of its life? Can it be recycled? Will the manufacturer take the product back? Will it need special disposal?
- Which conserves more energy or water?
- Which requires less to properly maintain and/or operate?

LINKS

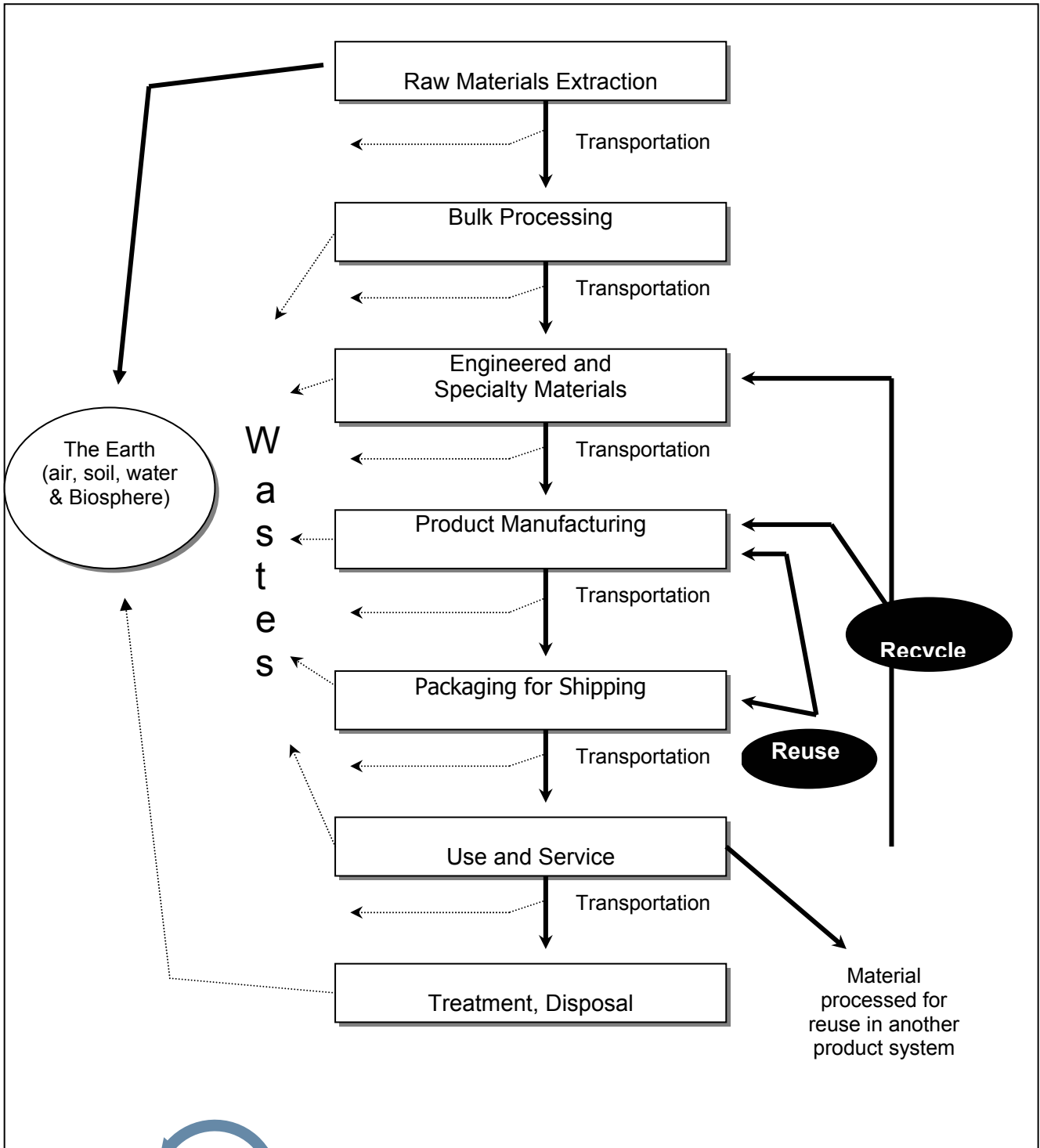
The following table provides links to a number of green product standard organizations. This list is in no way complete.

Category	Organization	URL	Additional Information
LCA	International Organization of Standards (ISO)	www.iso.org	Is an international standard for LCA
LCA	The Pharos Project	www.pharoslens.net/	
LCA	Building for Environmental and Economic Sustainability	www.bfrl.nist.gov/oa/soft-ware/bees/bees.html	Provides database of 230 products.
LCA	The Institute for Market Transformation to Sustainability	www.mts.sustainableproducts.com	Develops the SMART buildings product standard
Multi	Green Seal	www.greenseal.org	Certifies a range of building products
Single	Carpet and Rug Institute	www.carpet-rug.org	Certifies carpets
Product	Forest Certification Resource Center	www.certifiedwood.org	Certifies wood
Product	Forest Stewardship Council	www.fscoax.org	Certifies wood
Product	US Green Building Council	www.usgbc.org	Certifies buildings
Product	Leonardo Academy	www.cleanerandgreener.org	Cleaning Products
Product	California Gold Sustainable Carpet Standard	www.green.ca.gov/EPP/standards	Certifies carpets
Product	Organic Trade Association	www.ota.com	Certifies organic products
Product	Clean Car Campaign	www.cleancarcampaign.org	Provides a standard for cleaner cars
Product	Green-e	www.green-e.org	Certifies renewable energy and greenhouse gas reductions in retail market
Product	Patagonia	www.patagonia.com	Site depicts supply chain impacts for a few products

APPENDIX A
PROCESS FLOW OF THE 7 STAGES OF A PRODUCT LIFE CYCLE

California Gold Sustainable Carpet Standard - 2006

Figure A.1 – The General Product Life Cycle



APPENDIX B CRITERIA FOR SMART CONSENSUS SUSTAINABLE PRODUCTS STANDARD



1. Sustainable: Triple Bottom Line
2. Consensus: ANSI Accredited Process
3. ISO Compliant Life Cycle Assessment (LCA)
4. Independent Certification
5. Third Party Global Auditing: Manufacturer & Supplier Facilities
6. Climate Change Pollution Reductions
7. Encourages No or de Minimums Toxins Including Endocrine Disruptors
8. Eliminates Stockholm Treaty Toxic Chemicals
9. Decertification of Noncompliance
10. Rules Preventing Industry Trade Association Dominance
11. Approved Standard
12. Performance Based: Tangible Impact Measures
13. Reasonable Costs Associated with Use & Implementation
14. Accessibility: Multiple Products Across Multiple Platforms
15. Multiple Level of Compliance / Certification Certified, Gold, Platinum
16. Environmental Protection Agency (EPA) Requirements for Environmentally Preferable Purchasing (EPP) Product Certifiers
17. Requires Product Performance Durability
18. Federal Trade Commission (FTC) Environmental Marketing Requirements
19. Public Access to Criteria & Methodology
20. ISO 14020 Environmental Label Principles
21. Requires Continuous Improvement
22. Requires Product Reuse / Reclamation Consistent with FTC Requirements
23. ISO 14024 Environmental Label Requirements
24. ISO 14021 Environmental Label Requirements



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