



UL 7002

Sustainability Standard for Household Portable and Floor Care Appliances

Sustainability Standard for Household Portable and Floor Care Appliances, UL 7002

First Edition, Dated August 22, 2014

Summary of Topics

This is the First Edition of the Sustainability Standard for Household Portable and Floor Care Appliances, AHAM 7002–2014/CSA SPE–7002–14/UL 7002.

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*AHAM 7002-2014/CSA SPE-7002-14/UL 7002
**Sustainability Standard for household
portable and floor care appliances***



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Commitment for Amendments

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Foreword

The Association of Home Appliance Manufacturers (AHAM), CSA Group, and Underwriters Laboratories Inc. (UL), as a Task Force, collaborated with experts and stakeholders to develop this non-consensus Standard for home appliances as the first step in a broader Product Sustainability Initiative. The overall goal of this family of Standards is to provide meaningful product sustainability information to consumers and stakeholders. It is intended for this initiative to drive innovation and continual improvement in the sustainability performance of home appliances. This Standard is based on product life cycle information and consideration for consumer expectations. It provides information for consumers, governments, retailers, and other program developers to help distinguish between products based on environmental criteria.

AHAM, CSA, and UL would like to acknowledge the assistance of *PE INTERNATIONAL* and *Five Winds Strategic Consulting* whose staff served as experts and project managers.



The Association of Home Appliance Manufacturers (AHAM) represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry in the U.S. and Canada. AHAM's membership includes over 150 companies throughout the world. AHAM is also a standards development organization, accredited by the American National Standards Institute (ANSI) and authors numerous appliance performance testing standards used by manufacturers, consumer organizations and governmental bodies to rate and compare appliances. AHAM administers several appliance rating verification programs, employing third party laboratories. AHAM's consumer safety education program has educated millions of consumers on ways to properly and safely use appliances such as portable heaters, clothes dryers, and cooking products.



Canadian Standards Association (operating as "CSA Group") is a not-for-profit membership-based association serving business, industry, government, and consumers in the global marketplace. As a solutions-oriented organization, we work around the world to develop standards that address real needs, such as enhancing public safety and health, advancing the quality of life, helping to preserve the environment, and facilitating trade.



Underwriters Laboratories Inc. (UL) is a global independent safety science company offering expertise across five key strategic businesses: Product Safety, Environment, Life & Health, Knowledge Services and Verification Services. Our breadth, established objectivity, and proven history mean we are a symbol of trust and enable us to help provide peace of mind to all. In addition to being a leader in safety science, UL is a world leader in standards development for safety, health, and sustainability. Through more than a century of involvement in the standards and conformity assessment community, UL is recognized for its unrivaled technical expertise and our Standards are used to evaluate and certify products and systems. UL Standards are used by manufacturers to help them design products and systems to meet the requirements for certification, by code development organizations that adopt and reference them in their codes, and by certification organizations that utilize UL requirements for their own certifications.

Preface

This is the first edition of AHAM 7002/CSA SPE-7002/UL 7002, *Sustainability Standard for portable and floor care appliances*. This is a non-consensus document.

The environmental performance of portable and floor care home appliances are commonly evaluated on a few environmental attributes such as electricity consumption during use or materials. This Standard on home appliance sustainability for portable and floor care products takes a broader, multi-attribute, and more holistic approach to assessing the environmental impacts of these small home appliances.

The multi-attribute approach was developed using life-cycle assessment (LCA) information along with other key factors such as hot-spot or hot-button analyses influencing product environmental performance. This approach, detailed in [Annex A](#), determined the environmental attributes of portable and floor care appliances for inclusion in this Standard.

In 2009, a number of AHAM members had contacted AHAM staff about the subject of sustainability and encouraged us to consider developing sustainability standards. By April 2010 a number of encouragements of this pathway were coming together from different directions. First, several AHAM members were asking for a way to rate the overall environmental performance of their products rather than have individual requirements based on energy and water use, packaging, end-of-life, Greenhouse Gas emissions, and chemicals used in the manufacture of the products. Second, government agencies such as Environment Canada, U.S. EPA, and quasi-governmental programs such as EPEAT for environmentally preferable purchasing were beginning to utilize sustainability standards or encouraging their use. Third, retailers were beginning to discuss the use of sustainability measures to determine the environmental performance of the products they carried. Fourth, several outside standards development organizations such as UL, CSA, NSF, US Green Building Council, and several trade associations were developing sustainability standards for products. Based on all these forces, the AHAM membership and the AHAM Board of Directors at the 2010 AHAM Annual Meeting voted unanimously to have AHAM develop sustainability standards using a collaborative process. The first meetings of the Portable and Floor Care Division were held in June 2010 on this subject and heard reports from several members as to their individual research on sustainability. From this, a Portable and Floor Care Sustainability Standards Task Force was formed, consisting of companies that wished to be part of the standards development process along with representative from UL Environment, CSA Group, and Five Winds Consulting.

It has been contemplated by all parties that this Standard will be updated within a few years in keeping with AHAM's Policy and Procedures Governing Technical Standards. Many of the measurements included within this Standard are unique and have not been conducted on other appliance categories. The Task Force expects to learn much from the application of this First Edition in the ensuing years. The use of this Standard and self-assessment by manufacturers will be used to improve the Standard in drafting the second and subsequent editions.

This Standard was written specifically for products placed on the market in the United States and Canada. At the present time, a number of the calculations are based on systems specific to North America.

This Standard was prepared by the Task Force on AHAM-CSA Group-UL Sustainability Standard for Portable and Floor Care Household Appliances, under the jurisdiction of AHAM's Portable and Floor Care Engineering Councils, CSA Strategic Steering Committee on Business Management and Sustainability, and UL Environment.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

CSA SPE-7002-14

Sustainability Standard for household portable and floor care appliances

1 Scope

1.1

This Standard covers portable and floor care home appliances intended for household use, including

- (a) air treatment appliances;
- (b) food and beverage preparation appliances;
- (c) counter top cooking appliances;
- (d) personal care appliances;
- (e) garment care appliances; and
- (f) floor care appliances.

See [Annex B](#) for a list of portable and floor care home appliances under these six headings.

1.2

This Standard does not cover air treatment appliances containing refrigerants or portable and floor care appliances intended for commercial use.

1.3

This Standard does not cover portable or floor care appliances that are powered by primary cell batteries.

Note: As defined by Merriam-Webster (www.m-w.com), a primary cell is “a type of battery that converts chemical energy into electrical energy by irreversible chemical reactions”. A common example of a primary cell is the disposable battery.

1.4

For purposes of this Standard, the product evaluation includes those consumables used as part of the normal function of the product as well as parts or accessories that are packaged with the product.

1.5

This document constitutes the First Edition of this Standard. Companies that will use this Standard in the beginning for assessment of the environmental performance of their products will begin with the First Edition. If and when subsequent editions of this Standard are published, these subsequent editions might carry an “effective date” that provides manufacturers with time to meet the new requirements and enables them to identify their products that have been assessed to the new edition.

1.6

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (nonmandatory) to define their application

2 Normative references

This Standard makes reference to the following publications.

American Chemistry Council

Plastics Resin Identification Code

<http://plastics.americanchemistry.com/Plastic-Resin-Codes-PDF>

ASTM International

ASTM D6400-12

Standard Specification of Compostable Plastics

ASTM D6868-03

Standard Specification for Biodegradable Plastics Used as Coatings on Paper & Other Compostable Substances

European RoHS Directive (Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment)

2002/95/EC

2005/618/EC

Federal Trade Commission

The Federal Trade Commission's Guides for the Use of Environmental Marketing Claims (October 1, 2012) at 16 CFR 260

GRI (Global Reporting Initiative)

Sustainable Reporting Guidelines, version 3.1 (2011)

IEC (International Electrotechnical Commission)

62301-2007

Household electrical appliances — Measurement of standby power

IPC (Association Connecting Electronics Industries)

1752A-2010

Materials Declaration Management

ISO (International Organization for Standardization)

11469:2000

Plastics — Generic identification and marking of plastics products

14020:2000

Environmental labels and declarations — General principles

14024:1999

Environmental labels and declarations — Type I environmental labelling — Principles and procedures

14025:2006

Environmental labels and declarations — Type III environmental declarations — Principles and procedures

14040:2006

Environmental management — Life cycle assessment — Principles and framework

14044:2006

Environmental management — Life cycle assessment — Requirements and guidelines

14050:2009

Environmental management — Vocabulary

14064-1:2006

Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

ISO/IEC (International Organization for Standardization/International Electrotechnical Commission)

17000:2004

Conformity assessment — Vocabulary and general principles

Guide 2:2004

Standardization and related activities — General vocabulary

UL (Underwriter's Laboratories)

ULe P113

United Nations

Report of the World Commission on Environment and Development: Our Common Future (1987)

World Commission on the Environment and Development

US Government

CFR Part 260 (63 FR 24240, May 1, 1998)

Federal Trade Commission's Guides for the Use of Environmental Marketing Claims

<http://www.ftc.gov/bcp/grnrule/guides980427.htm>

Energy Independence and Security Act (2007)

<http://www.gpo.gov/fdsys/pkg/BILLS-110hr6enr/pdf/BILLS-110hr6enr.pdf>

WTO (World Trade Organization)

World Trade Organization Barriers to Trade (WTO/TBT) Agreement

3 Definitions

The following definitions apply in this Standard:

Note: *The definitions in this Standard are based on ISO/IEC 17000:2004, ISO 14040:2006, and other relevant sources.*

AC mains power — the alternating current voltage delivered to household receptacles in residential locations.

Note: *In most of North America, the household circuits for portable and floor care appliances have voltages between 115 and 128 AC. In other countries this can vary from 220 to 250 V AC.*

Attribute — a characteristic of a product that has a direct influence on the environmental performance of the product.

Note: *For example, the ENERGY STAR® label is based on a single-attribute — it considers the energy efficiency of a product. This Standard is based on multiple attributes.*

Battery charger — a device intended to replenish the charge in a battery by connecting to the mains at the power input and to the battery at the output.

Note: *A battery charger can consist of multiple components, have more than one enclosure, and be all or partially contained in the battery-operated end-use product.*

Brand owner — a person, manufacturer, distributor, or importer who is the registered owner or licensee of the intellectual property rights to the brand of a product sold, offered for sale, or otherwise distributed.

Note: *This company may be an original equipment manufacturer (OEM) but may also purchase a finished product from an OEM and conduct sales, marketing, and management of the brand name.*

Collaborative process — partial or full agreement of the involved parties, steered by a chair or coordinator towards the broadest possible agreement on the issue at stake.

Note: *The involved parties consult with interested parties, and encourage dialogue across sectors in the development of this Standard. The involved parties maintain ultimate decision-making authority.*

Consensus process — general agreement, characterized by the absence of sustained opposition to substantial issues and by a process that involves seeking to take into account the views of interested parties and to reconcile any conflicting arguments. [ISO/IEC Guide 2]

Consumable — any part or material used in the operation of the appliance, which is intended to be replaced or disposed of by a consumer on a cycle more frequent than the life of the appliance but which is not consumed by a person.

Notes:

(1) *This can include, but is not limited to*

- (a) *air filters;*
- (b) *water in a steam iron;*
- (c) *replaceable bags;*
- (d) *primary cell battery;*
- (e) *humidifier wicks;*
- (f) *carpet shampoo;*
- (g) *pads;*
- (h) *blades for cutting appliances; and*
- (i) *foils used to shield blades.*

(2) *This does not apply to service replacement parts.*

Criteria — the environmental requirements that the product needs to meet in order to be awarded points. [ISO 14024]

Electrical enclosure — a surrounding case constructed to provide a degree of protection to personnel against incidental contact with the enclosed electrical components and to provide a degree of protection to the enclosed electrical components against specified environmental conditions.

Environmental management system (EMS) — part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects. [ISO 14050]

Exposure pathway — a contaminated environmental release potential that could reach a human population.

External power supply (EPS) — a device that

- (a) is designed to convert line voltage AC input into lower voltage AC or DC output;
 - (b) is able to convert to only 1 AC or DC output voltage at a time;
 - (c) is sold with, or intended to be used with, a separate end-use product that constitutes the primary load;
 - (d) is contained in a separate physical enclosure from the end-use product;
 - (e) is connected to the end-use product via a removable or hard-wired male/female electrical connection, cable, cord, or other wiring; and
 - (f) has nameplate output power that is less than or equal to 250 watts.
- [42 U.S.C. 6291(36)(C)(i)].

Greenhouse gas (GHG) — gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. [ISO 14050]

Greenhouse gas (GHG) scopes [14064-1] —

Direct greenhouse gas emission (scope I) — GHG emission from greenhouse gas sources owned or controlled by the organization.

Energy indirect greenhouse gas emission (scope II) — GHG emission from the generation of imported electricity, heat or steam consumed by the organization.

Other indirect greenhouse gas emission (scope III) — GHG emission other than energy indirect GHG emission which is a consequence of an organization's activities, but arises from greenhouse gas sources that are owned or controlled by other organizations.

Impact category — a class representing environmental issues of concern to which LCA results can be assigned.

Note: Commonly accepted LCA impact categories include

- (a) climate change potential (also known as global warming potential — GWP);
- (b) acidification potential (AP);
- (c) ozone depletion potential (ODP); and
- (d) eutrophication potential (EP).

For some impact categories, LCA might not be the most appropriate quantification tool. For example, the ecotoxicity (ET) and human toxicity (HT) impact categories are more commonly determined using chemical risk assessment.

Life cycle assessment (LCA) — compilation and evaluation of the inputs, outputs, and the potential environmental impacts of a product system throughout its life cycle. [ISO 14040]

Manufacturer — the company or business entity that performs the final assembly of the appliance unit under evaluation.

Material resource efficiency — the reduction of the mass of and/or number of materials used in the production of the final product.

Notes:

- (1) This does not include consumable materials used by the product in its use phase.
- (2) The Joint Task Force believes that "Material resource efficiency" is more appropriate than the term "Dematerialization." Material resource efficiency can occur with a more efficient use of raw materials or by reduction of parts or materials in the product, elimination of waste, or by utilizing higher performance materials.

Metric — quantification of the criteria that can be measured.

Packaging — a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use. Packaging is the material that contains the product, protects, preserves, and transports the product, and informs the customer. Packaging includes the customized containment intended for storage and protection of the appliance during its useful life.

Post-consumer — material that is an end product that has completed its life cycle as a consumer item and would otherwise have been disposed of as a solid waste.

Post-industrial — waste that is produced during the manufacturing process that is recycled back into the industrial process.

Pre-consumer — material that has been produced in a manufacturing process but has not made it into a consumer item and would otherwise have been disposed of as a manufacturing waste or byproduct.

Pre-consumer recycled content — any material that has been produced for some form of manufacturing but, however, was not used in its intended application due to quality, consistency, or other reasons, and was diverted from the waste stream by recycling.

Notes:

- (1) The reprocessed material must meet all requirements for its intended use.
- (2) Excluded is the reutilization of materials such as rework, reground, or scrap generated in a process and capable of being reclaimed within the same process that generated the material.

Product stewardship — product stewardship is a product-centered approach to environmental protection. It calls on those in the product lifecycle — manufacturers, retailers, users, and disposers — to share responsibility for reducing the environmental impacts of products.

Note: Product stewardship is described by the U.S. EPA at <http://www.epa.gov/epawaste/conservation/tools/stewardship/index.htm>.

Progress — the ability to show, based on empirical data, an increase or decrease in the relevant measurement over a specified time period. The default time frame is the preceding 5 years unless otherwise specified.

Recycle — the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials for the manufacture of new products (other than fuel).

Recyclable — materials used in a product that would otherwise be considered as waste that has the potential to be partially or fully reprocessed into raw materials to be used to produce into a new material or product.

Recycled — material that has been reprocessed from recovered [reclaimed] material by means of a manufacturing process and made into a final product or into a component for incorporation into a final product.

Refurbishment — to restore to freshness of appearance or good condition.

Note: Refurbished products include products that are returned by the customer within the return policy of the company which sold the product, without any defect with the product.
[Dictionary.com]

Remanufacturing — refurbishment (of a used product) by renovating and reassembling its components. [Dictionary.com]

Stakeholder — those groups or individuals

- (a) that can reasonably be expected to be significantly affected by the organization's activities, products, and/or services; or
- (b) whose actions can reasonably be expected to affect the ability of the organization to successfully implement its strategies and achieve its objectives. [GRI]

Standard — document approved by a recognized body, that provides, for common and repeated use, rules, guidelines, or characteristics for products or related processes and production methods, with which compliance is not mandatory. [WTO TBT Agreement]

Standby modes of power — any product modes where the energy using product is connected to a mains power source and offers one or more of the following user oriented or protective functions that usually persist

- (a) to facilitate the activation of other modes (including activation or deactivation of active mode) by remote switch (including remote control), internal sensor, or timer;
- (b) continuous function: information or status displays, including clocks; and
- (c) continuous function: sensor-based functions.

Task force — the AHAM-CSA-UL Task Force responsible for the development of, and revisions to, this Standard. The Task Force is composed of 31 manufacturers of portable and floor care appliances, AHAM, CSA Group, and UL Environment staff, and Five Winds International as a consultant and project manager.

Tier-one supplier — top-level supplier that provides components or parts to the original equipment manufacturer for integration into the final consumer product.

Weighting — assigning a weighting factor to each attribute, criteria, and metric in this Standard, depending on its relative importance.

4 General requirements

4.1 Units of measurement

For the purposes of this Standard, values should be reported in accordance with the requirements of the individual criteria and should be in SI (metric) units, where they exist.

If SI units of measurement are not available, the units used should be documented and justified as to the reason and relevance for that change.

4.2 Undated references

Any undated reference to a code or standard appearing in the requirements of this Standard shall be interpreted as referring to the latest published edition of that code or standard. The exception shall be in the case where the criteria explicitly state a certain version or date to be used.

4.3 Attributes

Eligible products shall be evaluated for their sustainability on all of the five following attributes [the first four attributes are required; Item (e), innovation, is a bonus attribute, and is therefore not required]:

- (a) materials;
- (b) manufacturing and operations;
- (c) energy consumption during use;
- (d) end of life; and
- (e) innovation (bonus attribute).

Product evaluations shall be conducted using the attribute evaluation criteria for each of the attributes outlined in this Standard.

Products shall receive points from the attribute categories in Items (a) to (d), according to the results of the evaluations, and may receive points from the innovation attribute category, Item (e).

4.4 Consumables

Many portable and floor care appliances utilize a consumable part or material as part of the appliance's basic function or maintenance. Certain appliance designs valued the use of consumables for convenience, safety, food preservation, or proper performance. Some appliance designs reduce the burden on the environment by offering the consumer an option of using a re-usable item in place of a consumable. Other products eliminate the use of consumables altogether. Other products need to continue to use consumables and cannot eliminate their use. This Standard addresses design considerations to reduce environmental burden of consumables in portable and floor care appliances, where it is appropriate.

The manufacturer or brand owner of the portable or floor care appliance shall declare the use of any consumable at the outset of the sustainability assessment process. In instances where a manufacturer or brand owner declares a product's use of a consumable, the points awarded for the four attributes shall be calculated, and then set to a scale of 95 by multiplying the point total for those attributes by a factor of 0.95. For products that utilize one or more consumable, the impact of those consumables shall be evaluated according to the Consumables Attribute ([Clauses 8.6.1 to 8.6.4](#)). A manufacturer may be awarded up to 5 points under the attribute listed in Item (e) of [Clause 4.3](#), thus keeping the overall scale at 100 points.

For those appliances that do not utilize a consumable, the point totals shown in [Table 1](#) shall apply to the appliance itself.

5 Point allocation system

Note: This First Edition point allocation system is based on LCA and hot spot analysis conducted at the time of drafting using information available on European and North American Portable and Floor Care Appliances. It is quite possible that at the time of the Second Edition, the points allocated to the Attributes might change.

5.1 General

5.1.1

A product shall be awarded points based on evaluation of the five product attribute areas (i.e., four cores and one bonus). Points shall be awarded on each attribute through a combination of prerequisites and optional points. The maximum points achievable for each attribute are different based on whether the product is a high, medium, or low-energy using product.

5.1.2

In instances where points are awarded for demonstrating progress, reduction, or some equivalent language that implies a reduction in the product's overall environmental burden, the points shall not be awarded unless that progress or reduction is significant.

Note: The interpretation of whether or not an action is significant should be in keeping with the General Principles of The Federal Trade Commission's Guides for the Use of Environmental Marketing Claims (October 1, 2012). In 16 CFR 260.3, the Guides provide examples of claims that overstate an environmental attribute. Section 260.3(c) states "[a]n environmental marketing claim should not overstate, directly or by implication, an environmental attribute or benefit. Marketers should not state or imply environmental benefits if the benefits are negligible." Further, section 260.4(c) states that to "avoid deception, marketers should use clear and prominent qualifying language that limits the claim to a specific benefit or benefits. Marketers should not imply that any specific benefit is significant if it is, in fact, negligible."

5.2 Evaluation and assessment criteria

5.2.1

The points available vary by whether the product is a low energy-using product, a medium energy-using product, or a high energy-using product. Any appliance regardless of category will be designated as a low, medium, or high energy using product based on its actual estimated annual energy consumption. Manufacturers should determine, based on the individual product, the energy used to perform the work and usage patterns to determine the annual energy consumption. The designations are as follows:

- (a) High Energy Using Product (HEUP): Equal to or greater than 100 kWh/year.
- (b) Medium Energy Using Product (MEUP): Greater than 20 kWh/year and less than 100 kWh/year.
- (c) Low Energy Using Product (LEUP): Less than or equal to 20 kWh/year.

5.2.2

A product that does not utilize a consumable material shall be evaluated based on the criteria and metrics within the Attributes of materials, Manufacturing and operations, Energy during use, End-of-life, and Innovation using the scoring as shown in [Table 1](#).

Table 1
Total points available for products by energy use classification
 (See [Clauses 4.4](#) and [5.2.2.](#))

Attribute	Low energy-using product (LEUP)	Medium energy-using product (MEUP)	High energy-using product (HEUP)
Materials	42	24	18
Manufacturing and operations	20	20	20
Energy during use	18	36	42
End of life	20	20	20
Total	100	100	100
Innovation	10	10	10

5.2.3

A maximum of 10 Innovation points may be added to the product score if it is less than 100. The product score shall not receive Innovation points that would result in a total score above 100.

A product that uses a consumable shall have the score sub-totaled and multiplied by 0.95. The points available through the section on Consumables shall be added to the sub-total for a total score.

6 Prerequisites

6.1

Prerequisites shall be met as the minimum performance level. There are two types of prerequisites:

- (a) attribute level; and
- (b) criteria level prerequisites.

Note: *Prerequisites are identified under each attribute heading.*

6.2

Products shall meet all prerequisites in a particular attribute in order to be eligible for evaluation using the points system in that attribute. Products shall meet all prerequisites in a particular criterion to be eligible for evaluation using the points system in that criterion. If a product does not meet one or more of the prerequisites in a particular attribute or criteria level, it shall not be evaluated against that attribute or criterion, or receive any points from that attribute or criterion. The product may still be assessed and receive points against the other attributes or criteria, provided their associated prerequisites are met.

7 Audit scope and boundaries

7.1 General

There can be significant differences in the term “manufacturer” with regard to vertical integration. Some companies purchase products and have no assembly facilities. Other companies control the design and production through to the level of component production. It is obvious that the manufacturer that actually operates an assembly factory is able to more quickly gather information on its sustainability-related activities compared to one that is only a brand owner and has no direct control on how its products are manufactured. Therefore, the point allocation needs to be fair and reflective of the real scope of the “manufacturer”. In addition, the sustainability of the product is a property of the product and the lifecycle history that its parts have experienced.

The requirements in [Clauses 7.2](#) to [7.5](#) shall apply.

7.2 Manufacturer responsibility

The manufacturer controls the process of ordering, engineering, assembling, and quality control of the parts that make up the product as defined at the point where assembly is complete. The manufacturer shall be responsible to provide all necessary documents to support the points allocated

7.3 Organizational constructs

Several organizational constructs can exist in the market and their impact is described as follows:

- (a) A brand owner is a person, manufacturer, distributor, or importer who is the registered owner or licensee of the intellectual property rights to the brand of a product sold, offered for sale, or otherwise distributed:
 - (i) In this case, the sustainability analysis is performed for all attributes by the original equipment manufacturer's (OEM) engineering organization.
 - (ii) The analysis includes the assembly process at the OEM's manufacturing operation. Full documentation is provided to the brand owner for all criteria.
 - (iii) The sustainability score(s) are provided to the OEM manufacturing operation to apply to the product.
- (b) The design, engineering, and testing are performed by the brand owner at a location that is separate from the OEM's manufacturing operation:
 - (i) In this case, the sustainability analysis is performed for all attributes by the brand owner's engineering organization.
 - (ii) The analysis includes the assembly process at the OEM's manufacturing operation. The point value earned for the attributes is either evaluated by the brand owner or evaluated by the OEM with full documentation provided to the brand owner for all criteria.
 - (iii) The sustainability score(s) are provided to the OEM's manufacturing operation to apply to the product.
- (c) The brand owner provides the design, testing, and manufacture of the product:
 - (i) In this case, the sustainability analysis is performed for all attributes by the brand owner's engineering organization.
 - (ii) The analysis includes the assembly process at the manufacturing operation. The point value earned for the attributes is evaluated by the brand owner with full documentation provided for all criteria.
 - (iii) The sustainability score is provided to the manufacturing operation to apply to the product.

7.4 Absence of documentation

If the documentation on the analysis is not available, the points shall not be awarded.

7.5 Multiple manufacturing locations

In the case of multiple manufacturing locations for the same model, the analysis for each product shall include the assembly process at the manufacturing operations where the model is produced. The point value earned for the attributes shall be evaluated by the engineering organization for each manufacturing location as a shipment weighted average based on the production volume at each location.

8 Attributes, criteria, and metrics

8.1 Materials attribute

8.1.1 General

The maximum points available under the materials attribute are defined in [Table 2](#).

[Table 2](#) presents the criteria and the points that shall be awarded for the identification of the materials being used and the use of more environmentally compatible materials within the product.

Products shall be evaluated on the basis of the environmental and human health impact of materials used during the process phase (e.g., subassembly, molding, pre-final assembly) within the final assembly of the product and in the packaging of the product.

Table 2
Attribute

(See [Clauses 8.1.1](#) and [8.1.5.4](#).)

	Low energy using product (LEUP)	Medium energy using product (MEUP)	High energy using product (HEUP)
Maximum points that can be attained in the materials attribute.			
Points are broken down in sections below.	42	24	18
8.1.2 Materials of concern			
8.1.2.2.1 Policy	3	2	2
8.1.2.2.2 Pathway procedure	2	1	1
8.1.2.2.3 Phase-out targets	3	2	2
8.1.2.2.4 Reductions	4	3	2
8.1.2.2.5 RoHS	3	1	1
Total # of points that can be attained for 8.1.2 Materials of concern	15	9	8
8.1.3 Recycled content of product			
8.1.3.2 Develop and implement plan to increase recycled content	3	2	1
8.1.3.3 Minimum value for recycled content	5% = 2 10% = 5 15% = 7	5% = 1 10% = 3 15% = 4	5% = 1 10% = 2 15% = 3
Total # of points that can be attained for 8.1.3 Recycled content of product	10	6	4
8.1.4 Recycled content of packaging			
8.1.4.3.2 Use of recyclable fiber based packaging materials	4	2	1
8.1.4.3.3 Use of recycled fiber based packaging materials	5	3	2
8.1.4.3.4 Use of post-consumer recycled plastic packaging	1	1	1
Total # of points that can be attained for 8.1.4 Recycled content of Packaging	10	6	4

(Continued)

Table 2 (Concluded)

	Low energy using product (LEUP)	Medium energy using product (MEUP)	High energy using product (HEUP)
8.1.5 Resource efficiency			
8.1.5.1 Inventory	3	1	1
8.1.5.2 Reductions	4	2	1
Total # of points that can be attained for 8.1.5 Resource Efficiency	7	3	2

8.1.2 Criteria: Materials of concern

Note: For all the following criteria, the product under evaluation will receive the appropriate number of points as found in [Table 3](#) depending on whether the product is a High energy-using, Medium energy-using, or Low energy-using product.

8.1.2.1 Prerequisite

The manufacturer or brand owner shall show documentation that a process is in place to cross-reference its materials and comply with regulations in effect for the intended jurisdictions into which the product is placed on the market.

8.1.2.2 Materials impact assessment

8.1.2.2.1 Policy

A product shall receive the appropriate number of points if the manufacturer or brand owner establishes a Materials of concern (toxic and restricted chemicals) policy approved by Senior Engineering and/or Technology Management. The Policy shall include tracking of regulatory status for the intended jurisdictions into which the product is placed on the market, whether currently in force or pending actions, and should also cover chemicals that have been typically used for the specified product.

To comply with these criteria, the manufacturer or brand owner should be able to

- show the development and use of an internal company policy that tracks the requirements of the intended jurisdictions into which the product is placed on the market and references these requirements in the policy;
- demonstrate that the policy is kept current;
- demonstrate that internal or external evaluations of the product, materials, suppliers, bills of materials, or other documents show reference to the policy; and
- show evidence that the suppliers are aware of the policy and demonstrate that the supply chain is meeting these requirements

Complying may involve demonstrating audit of suppliers, review of material substance documentation, IPC forms for components and materials.

8.1.2.2.2 Pathway procedure

A product shall receive the appropriate number of additional points if the manufacturer or brand owner creates and/or adopts an existing assessment procedure for identifying the pathways of greatest exposure to the consumer and the environment during the use phase, and greatest exposure to the environment at end of life. Pathways of greatest exposure to the consumer during the use phase could include exposure of particular materials to food, ice, or water intended for consumption, frequent consumer touch contact, or inhalation potential. Pathways of greatest exposure to the environment at end of life could include the materials used in the product, cleaning chemicals provided with the product, or decomposition products of particular materials following disposal. The assessment procedure shall include the source, exposure point, and how the exposure could be transported to the defined location of the human(s). One methodology that may be used is found in ULe P113, Section 4.2.