



UL 7003

SUSTAINABILITY STANDARD

Household Clothes Washers

Standard for Sustainability for Household Clothes Washers, UL 7003

Second Edition, Dated February 11, 2016

Summary of Topics

This revision of AHAM 7003/CSA R7003-16/UL 7003 dated November 30, 2022 is being issued to remove the ANSI logo and approval from the title page. No other changes have been made.

As noted in the Commitment for Amendments statement located on the back side of the title page, UL, AHAM, and CSA are committed to updating this harmonized standard jointly. However, the revision pages dated November 30, 2022 will not be jointly issued by UL, AHAM, and CSA as the revisions address a UL administrative change.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

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Association of Home Appliance Manufacturers
AHAM 7003-2016
Second Edition



CSA Group
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First Edition



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UL 7003
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February 11, 2016

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I

Commitment for Amendments

This standard is issued jointly by the Association of Home Appliance Manufacturers (AHAM), the Canadian Standards Association (operating as "CSA Group"), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to AHAM, CSA Group, or UL at anytime.

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Preface

This is the first edition of CSA R7003, the second edition of UL 7003, and the most recent version of AHAM 7003, Sustainability Standard for Household Clothes Washers.

This harmonized standard was prepared by the Association of Home Appliance Manufacturers, (AHAM), CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the Technical Harmonization Committee are gratefully acknowledged.

This standard was prepared by CSA Technical Committee on Sustainability of Household Appliances under the jurisdiction of CSA Strategic Steering Committee on Business Management and Sustainability and has been formally approved by the CSA Technical Committee.

The environmental performance of clothes washing home appliances is commonly evaluated on the single environmental attribute of electricity consumption during use. This Standard takes a multi-attribute, life cycle approach to measuring a broad spectrum of environmental and social impacts of refrigeration home appliances as a means of assessing sustainability performance. The multi-attribute approach was developed using representative product life cycle assessment (LCA) information along with other key factors such as hot-spot or hot-button analyses influencing product environmental performance. The attributes and criteria in this Standard are drawn from a much larger list and reflect the understanding of the attributes and criteria that are most prominent in sustainable performance and over which the manufacturers of these products have control. This approach, detailed in Annex A, determined the environmental attributes of refrigeration appliances for inclusion in this Standard. The authors acknowledge that revisions to this standard will be considered periodically and that future editions may consider a broader range of sustainability criteria.

It has been contemplated by all parties that this Standard will be updated to reflect new U.S. Department of Energy or Natural Resources Canada minimum energy performance standards for refrigeration products. Many of the measurements included in this Standard are unique and have not been conducted on other appliance categories. The Standard's committees expect to learn much from the application of this Second Edition in subsequent years. The use of this Standard and self-assessment by clothes washing products manufacturers and external third-party assessment bodies 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 and designs of products in North America.

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Foreword

The Association of Home Appliance Manufacturers (AHAM), CSA Group, and Underwriters Laboratories Inc. (UL), as a Task Force, under the jurisdiction of the AHAM Major Appliance Engineering Council, CSA Group Strategic Steering Committee on Business Management and Sustainability, and UL Environment, collaborated with experts and stakeholders to initiate development of product standards 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 performance information to consumers and stakeholders. It is intended for this initiative to drive innovation and continual improvement in the sustainability performance of home appliances by empowering consumers. 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 Group, and UL would like to acknowledge the assistance of PE INTERNATIONAL and Five Winds Strategic Consulting whose staff served as experts and project managers.

AHAM

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.

CSA GROUP

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.

UL

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.

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1 Scope

1.1 This Standard covers clothes washing appliances for household and residential style commercial use (e.g., a coin-operated appliance in an apartment building) included within the scope of the U.S. Department of Energy (DoE) and Canadian federal Energy Efficiency Regulations minimum energy performance requirements. This includes the following product categories:

- (a) top loading, compact [less than 45 L (1.6 ft³) capacity];
- (b) top loading, standard;
- (c) front loading, standard; and
- (d) front loading, compact [less than 45 L (1.6 ft³) capacity].

Note: *The Task Force intends to expand the scope to include combination all-in-one washer-dryers in future editions. New product categories and information on the environmental performance of the additional categories might be considered in order to determine the scope of future editions. DOE standards and Canadian Federal Efficiency Energy Regulations cover stacked washer-dryer units, and therefore they are within the scope of this Standard.*

1.2 This Standard does not cover semi-automatic or suds-saving clothes washers, as the U.S. Department of Energy and Natural Resources Canada (NRCan) are unaware of any models currently on the market.

2 General

2.1 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 (non-mandatory) to define their application.

3 References

3.1 Normative references

3.1.1 Where reference is made to any Standards, such reference shall be considered to refer to the latest editions and revisions thereto available at the time of printing, unless otherwise specified.

AHAM (Association of Home Appliance Manufacturers)

ANSI/AHAM-HLW-1-2013
Clothes Washers

CSA Group

CAN/CSA-C360-13
Energy performance, water consumption and capacity of household clothes washers

CAN/CSA-ISO 14021-00 (R2014)
Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling)]

European Parliament and the Council of the European Union

Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (cited as Directive 2002/95/EC)

2005/618/EC: Commission Decision of 18 August 2005 amending Directive 2002/95/EC of the European Parliament and of the Council for the purpose of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment (cited as Commission Decision 2005/618/EC)

Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) (cited as EMAS Regulation)

GRI (Global Reporting Initiative)

Sustainability Reporting Guidelines, Version 3.1

Government of Canada

Energy Efficiency Regulations, SOR/94-651

Canadian Competition Bureau

Competition Act, R.S.C. 1985, c. C-34

Consumer Packaging and Labelling Act, R.S.C. 1985, c. C-38

Precious Metals Marking Act, R.S.C. 1985, c. P-19

Textile Labelling Act, R.S.C. 1985, c. T-10

Government of USA

Code of Federal Regulations, Title 16, Part 260 (63 FR 24240), Guides for the Use of Environmental Marketing Claims

IPC (Association Connecting Electronics Industries)

1752A

Materials Declaration Management

IPCC (Intergovernmental Panel on Climate Change)

AR4:

IPCC Fourth Assessment Report

http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html

http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

ISO (International Organization for Standardization)

11469

Plastics – Generic identification and marking of plastics products

14001

Environmental management systems Requirements with guidance for use

14020

Environmental labels and declarations – General principles

14024

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

14025

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

14040

Environmental management – Life-cycle assessment – Principles and framework

14044

Environmental management – Life-cycle assessment – Requirements and guidelines

14050

Environmental management – Vocabulary

14064-1

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

14064-2

*Greenhouse gases Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements***ISO/IEC (International Organization for Standardization/International Electrotechnical Commission)**

6107-2

Water Quality – Vocabulary – Part 2

17000

Conformity assessment – Vocabulary and general principles

Guide 67

*Conformity assessment – Fundamentals of product certification***SAE (Society of Automotive Engineers)**

J 1344

Marking of Plastic Parts

UL (Underwriters Laboratories)

UL ECVP 2799

Environmental Claim Validation Procedure for Zero Waste to Landfill

UL 2157

Electrical Clothes Washing Machines and Extractors

UNEP (United Nations Environment Programme)

Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer

http://ozone.unep.org/Publications/MP_Handbook/MP-Handbook-2009.pdf

United Nations World Commission on Environment and Development

Report of the UN World Commission on Environment and Development: Our Common Future, 1987

WTO (World Trade Organization)

World Trade Organization Agreement on Technical Barriers to Trade (TBT Agreement)

3.2 Informative references

3.2.1 A list of informative references to laws and regulations for clothes washing products is provided in Annex [B](#).

4 Definitions

4.1 The following definitions shall apply in this Standard:

4.2 **Accreditation** – third-party attestation related to a conformity assessment body conveying a formal demonstration of its competence to carry out specific conformity assessment tasks.

Note: These tasks include sampling and testing, inspection, certification, and registration. [ISO/IEC 17000, Conformity assessment – Vocabulary and general principles]

4.3 **Attestation** – issue of a statement, based on a decision following review, that fulfillment of specified requirements has been demonstrated. [Reprinted from Conformity assessment – Vocabulary and general principles, ISO/IEC 17000]

4.4 **Attribute** – a characteristic of a product that has a direct influence on the sustainable use of resources and environmental impact of the product.

4.5 **Brand owner** – a company that manages a brand name. This company might or might not have engineering, manufacturing, or quality assurance activities. This company might be an original equipment manufacturer (OEM) but might also purchase a finished product from an OEM and conduct sales, marketing, and management of the brand name.

4.6 **Certification** – third-party attestation related to products, processes, or persons that convey assurance that specified requirements have been demonstrated. [Reprinted from Conformity assessment – Vocabulary and general principles, ISO/IEC 17000]

4.7 Consumable – any part or material used in the manufacturer's recommended operation of the appliance that is intended to be replaced or disposed of by a consumer on a cycle more frequent than the life of the appliance. This may include, but is not limited to, detergent, bleach, or fabric softener.

Note: *This does not apply to service replacement parts.*

4.8 Cradle-to-gate – term commonly used to identify the extent of a system boundary of a given LCI data set or LCA study. Suggests that all inventories and impacts associated with the goods are captured up to the point of sale or exchange; therefore, a cradle-to-gate data set or study does not include the use or disposal of that good or service (e.g., a component that is used in another product).

4.9 Cradle-to-grave – implies that the entire life-cycle has been captured from raw material extraction to end-of-life and all stages in between (e.g., LCA of a consumer product).

4.10 Criteria – the requirements used to assess the performance of the product as found in the Standard. [Environmental Labels and Declarations – Type I Environmental Labelling – Principles and Procedures, ISO 14024]

4.11 Dematerialization – the reduction of the mass of and/or number of materials used in the production of the final product.

Note: *For appliances, a more appropriate measure is the more efficient use of raw materials.*

4.12 Direct greenhouse gas emission (scope I) – see "Greenhouse gas (GHG) scopes" Clause [4.23](#).

4.13 Efficient use of raw materials – the reduction of the mass of and/or number of materials used in the production of the final product. Some standards use the term "Dematerialization."

4.14 Energy indirect greenhouse gas emission (scope II) – see "Greenhouse gas (GHG) scopes" Clause [4.23](#).

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

4.16 EU eco-management and audit scheme (EMAS) – an environmental performance management tool covered in the EMAS Regulation (EC) No. 1221 of the European Parliament and of the Council of 25 November 2009.

4.17 Eutrophication – enrichment of water, both fresh and saline, by nutrients, especially compounds of nitrogen and phosphorus that will accelerate the growth of algae and higher forms of plant life.

4.18 First party – generally the person or organization that provides the object. In the case of this Standard, the first party is the appliance manufacturer. Also see "Third party", Clause [4.44](#).

4.19 First-party declaration – procedure by which a first party conveys assurance (self-declaration) that the object of conformity fulfills specified requirements. [Reprinted from Conformity assessment – Vocabulary and general principles, ISO/IEC 17000]

4.20 Gate-to-gate – suggests that the data set or study only covers the boundary of one company and that nothing upstream or downstream of that organization is considered.

4.21 Global warming potential (GWP) – factor describing the radiative forcing impact of one mass-based unit of a given GHG relative to an equivalent unit of carbon dioxide over a given period of time.

4.22 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. [Environmental management – Vocabulary, ISO 14050]

4.23 Greenhouse gas (GHG) scopes –

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

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

Other indirect greenhouse gas emission (WRI scope III) – GHG emission, other than energy indirect GHG emissions, which is a consequence of an organization's activities, but arises from greenhouse gas sources that are owned or controlled by other organizations. [Greenhouse gases Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, ISO 14064-1]

4.24 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.

4.25 Industrial scrap – materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it

4.26 Interested party – a person or group that has a stake in the success or performance of this Standard, that might be influenced by the development and use of this Standard, or that might have an influence over it.

Note: Examples of interested parties include customers, suppliers, NGOs, government, consumer groups, or members of the general public. Interested parties are also referred to as stakeholders.

4.27 Life-cycle assessment (LCA) – compilation and evaluation of the inputs, outputs, and potential environmental impacts of a product system throughout its life cycle. [Reprinted from Environmental management Life cycle assessment – Principles and framework, ISO 14040]

4.28 Life-cycle inventory (LCI) – the step in conducting a life cycle assessment that involves data collection and modeling of the product system, as well as description and verification of data. This encompasses all data related to environmental (e.g., CO₂) and technical (e.g., intermediate chemicals) quantities for all relevant unit processes within the study boundaries that compose the product system.

Note: Examples of inputs and outputs quantities include inputs of materials, energy, chemicals, and "other" and outputs of air emissions, water emissions, or solid waste. Other types of exchanges or interventions such as radiation or land use can also be included. [ISO 14040 and ISO 14044]

4.29 Metric – quantification of the criteria that can be measured.

4.30 Original equipment manufacturer (OEM) – the manufacturer or assembler of the complete clothes washer. The OEM could include fabrication of components, molded or stamped parts, or partial assemblies. The OEM also refers to the location where the completed clothes washer is assembled for shipment to the retailer or end customer.

4.31 Packaging – material that is used to protect or contain a product during transportation, storage, marketing, or use.

Note: For the purposes of this Standard, the term "packaging" also includes any item that is physically attached to, or included with, a product or its container for the purpose of marketing the product or communicating information about the product.

4.32 Post-consumer material – material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

4.33 Pre-consumer material – material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

4.34 Product certification – an activity by which a third-party certification body gives written assurance that a product fulfills specified requirements. [Reprinted from Conformity Assessment – Fundamentals of Product Certification, ISO/IEC Guide 67]

4.35 Product stewardship – product stewardship is a product-centered approach to environmental protection. It calls on those in the product life cycle – 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/conserve/tools/stewardship/index.htm>

4.36 Progress – the ability to show, based on empirical data, an increase or decrease in the relevant measurement over a specified time period. The specified time period is to be annually, unless otherwise specified in the individual clauses of the Standard.

4.37 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).

4.38 Registration – third-party attestation related to systems that convey assurance that specified requirements have been demonstrated. Such systems include those established for the management of product, process, or service quality and environmental performance. [Reprinted from Conformity assessment – Vocabulary and general principles, ISO/IEC 17000]

4.39 Stakeholder – those groups or individuals

(a) who 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. [Reprinted from GRI]

4.40 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. [Reprinted from WTO, TBT Agreement]