



IEEE Standard for Environmental Assessment of Personal Computer Products, Including Laptop Personal Computers, Desktop Personal Computers, and Personal Computer Monitors

IEEE Computer Society

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IEEE Standard for Environmental Assessment of Personal Computer Products, Including Laptop Personal Computers, Desktop Personal Computers, and Personal Computer Monitors

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IEEE Computer Society

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Abstract: IEEE Std 1680-2006 provides a set of environmental performance criteria for notebook computers, desktop computers, and computer monitors. In addition, it defines the methods by which manufacturers may declare such products as conforming with the Standard and by which such conformance may be verified. The Standard provides a measure of environmental leadership in product design, manufacture, service and end-of-life management. It is intended for use by institutional purchasers to select personal computer products, and by product manufacturers who wish to sell such products. There are three levels of conformance with this Standard. To achieve the first level, the product shall conform to all of the 23 required environmental criteria. To achieve the second level, the product shall conform to all of the required criteria plus at least 50% of the 28 optional criteria, and to achieve the third level the product shall conform to all the required criteria and at least 75% of the optional criteria. It is intended that this Standard shall be a baseline for further environmental standards for additional electronic products and shall be updated and revised on a periodic basis to continue to set a higher performance standard for leadership products.

Keywords: computer, computer monitor, electronic product, electronic product design, environment, environmental leadership, environmental performance, notebook computer, personal computer

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Introduction

This introduction is not part of IEEE Std 1680-2006, IEEE Standard for Environmental Assessment of Personal Computer Products, Including Laptop Personal Computers, Desktop Personal Computers, and Personal Computer Monitors.

This Standard has been developed due to a growing demand by institutional purchasers for an easy-to-use evaluation tool that allows the comparison and selection of electronic products based on environmental performance.

This Standard is intended to be used by institutional purchasers in the selection of electronics products based on environmental performance, and by product designers and manufacturers who wish to sell products that meet environmental performance standards to institutional purchasers.

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IEEE Standard for Environmental Assessment of Personal Computer Products, Including Laptop Personal Computers, Desktop Personal Computers, and Personal Computer Monitors

1. Overview

1.1 Scope

This Standard defines environmental performance standards for personal computer products, including desktop computers, notebook computers, and computer monitors that are marketed to institutions, and includes key concepts and implementation procedures relating to reduction or elimination of environmentally sensitive materials, materials selection, design for end of life, life cycle extension, energy conservation, end of life management, corporate performance and packaging.

1.2 Purpose

This Standard provides a clear and consistent set of performance criteria for the design of personal computer products that are marketed to institutions, and provides an opportunity to secure market recognition for efforts to reduce the environmental impact of electronic products.

The environmental performance criteria of this Standard are intended to define a measure of environmental leadership in: the design and manufacture of personal computer products that are marketed to institutions; the delivery of specified services that are associated with the sale of the product to institutions; and in associated corporate performance characteristics.

This Standard is defined with the intention that the criteria are technically feasible to achieve, but that only products demonstrating the leading environmental performance currently available in the marketplace would meet them at the time of their adoption. As the environmental performance of products that are available in the marketplace improves, it is intended that the criteria will be updated and revised to set a higher performance standard for leadership products.

This Standard is intended to serve as a baseline for further environmental standards for additional electronic products to be developed in the future.

1.3 Application

The environmental performance criteria in Clause 4 apply to notebook personal computers, desktop personal computers, and personal computer monitors. The principles and procedures identified in Clause 1, Clause 2, and Clause 3 apply to personal computer products and will apply to future standards developed for additional electronic products.

Different configurations of a product, as defined in 3.1, may include options for processors, memory, hard disks, etc. A product, for the purpose of this Standard, is every configuration that could be offered in a specific marketing model and chassis type. If there is a specific configuration within a marketing model and chassis type that would change the environmental performance substantially, especially if that configuration would no longer meet a criterion, then the manufacturer could not claim conformance to this Standard for that configuration, even if the same model in other configurations did conform to this Standard. The manufacturer shall report such special configurations that do not conform to the Standard to the Product Registration Entity.

A product includes a desktop computer, a notebook computer or monitor, and all the peripherals that are integral to its operation. For example, the desktop computer together with the keyboard, the mouse, and the power cord would be a product.

1.4 Conformance with this Standard

In order to conform to this Standard, each unit of a product must satisfy all of the applicable requirements provided in Clause 4. A subclause of Clause 4 is applicable to the product if the product falls within the scope of products defined by the “Applies to” section of the subclause. A product satisfies the criterion if it meets the requirement shown in the “Product Criterion” section of the subclause. The “References and Details” section of the subclause provides critical information that is valuable for interpreting the requirements of the Product Criterion. The “Verification Requirements” section of the subclause specifies the data and information that a manufacturer must supply to a Product Registration Entity if requested for verification purposes.

The environmental performance criteria in this Standard are of two types:

- Required criteria that all products shall meet in order to be considered in conformance with the environmental standard
- Optional criteria that products may voluntarily meet in order to gain additional points so as to be rated at a higher level of environmental performance

All criteria, including the optional criteria, use the “shall” construct since the defined criterion shall be met if the applicant wishes to receive the credit. Note that in certain cases there are multiple optional criteria that address a single environmental attribute, such as the presence of recycled content, with increasing levels of environmental benefit. Points may be accumulated in these cases. For example, if the product has a 26% recycled content, then it would earn two points from two different criteria: one point for exceeding 10% and one point for exceeding 25%.

There shall be three levels of conformance with this Standard:

- To achieve the first level, the product shall conform to all of the required criteria.
- To achieve the second level, the product shall conform to all of the required criteria, plus at least 50% of the optional criteria.
- To achieve the third level, the product shall conform to all of the required criteria, plus at least 75% of the optional criteria.

Conformance with this Standard shall be demonstrated by the following process:

- a) Before declaring the conformance of products to this Standard, the manufacturer will sign a legally binding Agreement with a Product Registration Entity. This Agreement shall commit the manufacturer to providing accurate product and company information and shall provide for remedies should inaccuracies be discovered.

The Agreement shall provide that all units sold of a product that is declared to this Standard shall conform to the product declaration submitted by the manufacturer, and that all such units are subject to verification by the Product Registration Entity, according to 1.6.

The Agreement shall include a commitment to provide to the Product Registration Entity, within 30 d of a request, a set of verification data, as specified for each criterion, to be verified. Such verification data shall be held in confidence by the Product Registration Entity.

- b) The manufacturer may declare that the product meets the definition and intent of each required criterion, and as many optional criteria as wished. These declarations shall be of two types, as specified in Clause 4 for each criterion:
 - 1) *Product criteria* are those that apply to each specific product, and are declared to in the product application process.
 - 2) *Annual report criteria* are those that apply to a program or an offering of the manufacturer in general, and are not exclusive to the specific product. These criteria are declared in an annual report to the Product Registration Entity.

1.5 Product Registration Entity and Market Surveillance Entity

A Product Registration Entity shall perform the activities defined in 1.4 and 1.6 to ensure that products are in conformance with this Standard. A Product Registration Entity shall make available the documents referenced in this Standard that are not otherwise readily accessible and for which copyright protection does not apply. A Product Registration Entity should submit the products that have been declared to them to be in conformance with this Standard to the Market Surveillance Entity to be posted on the Electronic Product Environmental Assessment Tool (EPEAT) Registry.

The Market Surveillance Entity shall maintain a Web site at <http://www.epeat.net/> that will make available for purchasers the EPEAT Registry of all products that have been declared to be in conformance with this Standard. A Product Registration Entity that submits a listing of products to be displayed on the EPEAT Registry shall demonstrate to the Market Surveillance Entity that such products have been declared to be in conformance with the Standard, according to procedures described in 1.3 and 1.4, and that the Product Registration Entity operates a declaration verification system that conforms with 1.6.

1.6 Verification of conformance with this Standard

A subset of qualified products will periodically be selected by the Product Registration Entity to verify their conformance with this Standard. A subset of criteria, as they apply to many products, may also be selected for verification. The Product Registration Entity will contact the manufacturer who will be required to provide all the data listed in the “Verification Requirements,” as specified for each criterion to be verified. In the event that a declared product cannot be shown to meet the criteria, the Product Registration Entity will follow the corrective process established in the Agreement that will initially focus on correcting the problem, but may ultimately include disqualifying the product or, upon the event of repeated product disqualifications, disqualify the manufacturer.

A Product Registration Entity shall maintain a Product Verification Committee that is responsible for making final decisions regarding product verifications described in this subclause. The Product Verification Committee shall be independent of any and all financial benefit that results when products are verified to be