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Environmental standardization for electrical and electronic products and systems – Glossary of terms

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Normalisation environnementale pour les produits et les systèmes électriques et électroniques – Glossaire des termes

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ENVIRONMENTAL STANDARDIZATION FOR ELECTRICAL
AND ELECTRONIC PRODUCTS AND SYSTEMS –
GLOSSARY OF TERMS**

FOREWORD

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International Standard IEC 62542 has been prepared by IEC technical committee 111: Environmental standardization for electrical and electronic products and systems.

It has the status of a horizontal standard in accordance with IEC Guide 108.

The text of this standard is based on the following documents:

FDIS	Report on voting
111/302/FDIS	111/312/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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INTRODUCTION

The definitions noted in this International Standard are intended to be considered by all new and existing IEC standards under maintenance that are meant to fulfil standardization needs, associated directly or indirectly, with an environmental topic or which may reference environmental aspects/impacts, even if the standard is not exclusively an environmental one. In addition this standard aims to utilise and harmonize definitions in other related documents.

This standard will be updated periodically as relevant international standardization documents evolve.

Wherever possible, the terms and definitions included herein have been taken from other IEC or ISO deliverables, either verbatim or modified if appropriate so as to make them suitable for use in a wide range of IEC deliverables on environmental matters. This standard also contains definitions for terms that are likely to be required by IEC deliverables on environmental matters, but are not yet described elsewhere.

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ENVIRONMENTAL STANDARDIZATION FOR ELECTRICAL AND ELECTRONIC PRODUCTS AND SYSTEMS – GLOSSARY OF TERMS

1 Scope

This International Standard specifies generic terms and definitions that are related to environmental standardization within the IEC. It serves as a glossary of terminology to be considered for environmental aspects of relevant work in IEC.

The terms cover environmental issues that are relevant for electrotechnical products across all product life cycle stages, including but not limited to

- design and supply chain aspects in general,
- use and declaration of materials,
- analytics of environmentally relevant substances,
- aspects relating to climate protection,
- power consumption and energy efficiency,
- environmental information,
- end of life treatment.

This horizontal standard is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 108.

One of the responsibilities of a technical committee is, wherever applicable, to make use of horizontal standards in the preparation of its publications. The contents of this horizontal standard will not apply unless specifically referred to or included in the relevant publications.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Guide 108, *Guidelines for ensuring the coherency of IEC publications – Application of horizontal standards*

3 General terms relating to environmental protection and management

3.1 design and development

activities that take an idea or requirement and transform these into a product

Note 1 to entry: The process of design and development usually follows a series of defined steps starting with an initial idea, transforming that into a formal specification, and resulting in the creation of a working prototype and whatever documentation is required to support production of the goods or provision of the service.

[SOURCE: IEC 62430:2009, definition 3.1]

3.2 electronic assembly

set of components, at least one of which is an electronic component, assembled into a single unit

EXAMPLE Group of components mounted on a printed wiring board [printed circuit board].

3.3 electronic component

electronic device that cannot be taken apart without destruction or impairment of its intended use

EXAMPLE Resistors, capacitors, diodes, integrated circuits, hybrids, application specific integrated circuits, wound components and relays.

Note 1 to entry: Electronic components are sometimes called electronic parts, or piece parts.

3.4 emission

direct or indirect release from a product or process into the air, water or soil

EXAMPLE A release could include one or more substances, heat, light, sound, electromagnetic fields, etc.

3.5 environment

surroundings in which a product or system exists, including air, water, land, natural resources, flora, fauna, humans and their interrelation

[SOURCE: ISO 14001:2004, definition 3.5, modified – “in which an organization operates” replaced by “in which a product or system exists”]

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3.6 environmental aspect

element of an organization's activities or products that can interact with the environment

Note 1 to entry: A significant environmental aspect has or can have a significant environmental impact.

[SOURCE: IEC 62430:2009, definition 3.3]

3.7 environmental impact

any change to the environment, whether adverse or beneficial, wholly or partly resulting from environmental aspects

[SOURCE: ISO 14001:2004, definition 3.7, modified – “an organization's” before “environmental aspects” deleted]

3.8 environmental management system

EMS

part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects

Note 1 to entry: A management system is a set of interrelated elements used to establish policy and objectives and to achieve those objectives.

Note 2 to entry: A management system includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources.

[SOURCE: ISO 14001:2004, definition 3.8]

3.9

environmental parameter

quantifiable attribute of an environmental aspect

EXAMPLE Environmental parameters include the type and quantity of materials used (weight, volume), power consumption, emissions, rate of recyclability, etc.

[SOURCE: IEC 62430:2009, definition 3.5]

3.10

environmentally conscious design

ECD

systematic approach which takes into account environmental aspects in the design and development process with the aim to reduce adverse environmental impacts

[SOURCE: IEC 62430:2009, definition 3.6]

3.11

environmentally conscious design tool

formalized method which facilitates qualitative or quantitative analysis, comparison and/or solution finding during the ECD process

[SOURCE: IEC 62430:2009, definition 3.7]

3.12

life cycle

consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to the final disposal

[SOURCE: ISO 14040:2006, definition 3.1] <http://www.iso.org/iso/standards/sist/3fbc14c3-b7f5-499d-bad0-07b60da1308d/iec-62542-2013>

3.13

life cycle assessment

LCA

compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle

[SOURCE: ISO 14040:2006, definition 3.2]

3.14

life cycle stage

element of a life cycle

Note 1 to entry: The term "life cycle phase" is sometimes used interchangeably with "life cycle stage".

Note 2 to entry: Examples of life cycle stages: raw material acquisition and production; manufacturing; packaging and distribution; installation and use, maintenance and upgrading and end of life.

[SOURCE: IEC 62430:2009, definition 3.10]

3.15

life cycle thinking

LCT

consideration of all relevant environmental aspects during the entire life cycle of products

[SOURCE: IEC 62430:2009, definition 3.11]

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3.16**process**

set of interrelated or interacting activities which transform inputs into outputs

Note 1 to entry: Inputs to a process are generally outputs of other processes.

Note 2 to entry: Processes in an organization are generally planned and carried out under controlled conditions to add value.

[SOURCE: ISO 9000:2005, definition 3.4.1, modified – "NOTE 3 A process where the conformity of the resulting product cannot be readily or economically verified is frequently referred to as a "special process". deleted]

3.17**product category**

group of technologically or functionally similar products where the environmental aspects can reasonably be expected to be similar

[SOURCE: IEC 62430:2009, definition 3.15]

3.18**product**

any goods or service

Note 1 to entry: This includes interconnected and/or interrelated goods or services.

[SOURCE: IEC 62430:2009, definition 3.14]

3.19**stakeholder**

individual, group or organization that has an interest in an organization or activity

Note 1 to entry: Usually a stakeholder can affect or is affected by the organization or the activity.

Note 2 to entry: "Interested party" is sometimes used as a synonym for "stakeholder".

[SOURCE: IEC 62430:2009, definition 3.16, modified – Note 2 to entry added]

4 Terms relating to determination and declaration of substances and materials**4.1****declarable substance and declarable substance group**

substance and substance group that meet the criteria stated in IEC 62474 and are specified in the IEC 62474 database

Note 1 to entry: Declarable substances and declarable substance groups are listed in the IEC 62474 database with either a mandatory or optional reporting requirement above the specified threshold in the IEC 62474 database.

[SOURCE: IEC 62474:2012, definition 3.2, modified – in the Note 1 to entry, "Such substances and substance groups" replaced by "Declarable substances and declarable substance groups"]

4.2**hazardous mixture**

hazardous preparation

mixture that has, according to defined classification criteria, the potential for adversely impacting human health and/or the environment

Note 1 to entry: The criteria for determining whether a mixture (or preparation) is classified as hazardous are defined by law or regulation.

4.3

material

substance or mixture within a product or product part

[SOURCE: IEC 62474:2012, definition 3.4]

4.4

matrix

substance or mixture and its form or state in which analyte is embedded or to which analyte is attached

4.5

mixture

preparation

mixture or solution composed of two or more substances in which they do not react

Note 1 to entry: An alloy is treated as a mixture.

[SOURCE: IEC 62474:2012, definition 3.6]

4.6

performance-based measurement system

PBMS

set of processes wherein the data needs, mandates or limitations of a program or project are specified, serving as criteria for selecting appropriate methods to meet those needs in a cost-effective manner

Note 1 to entry: The criteria may be published in regulations, technical guidance documents, permits, work plans or enforcement orders.

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[SOURCE: IEC 62321:2008, definition 3.1.11]

4.7

reporting threshold level

concentration limit at or above which the presence of a substance in a material or product is declared if declaration of the substance is mandatory according to the IEC 62474 database, or if it is agreed on to be declared

[SOURCE: IEC 62474:2012, definition 3.12]

4.8

screening

analytical procedure to determine the presence or absence of substances in the representative part or section of a product, relative to the value or values chosen as the criterion for presence, absence or further testing

Note 1 to entry: If the screening method produces values that are not conclusive, then additional analysis or other follow-up actions may be necessary to make a final presence/absence decision.

4.9

substance

chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition

Note 1 to entry: Definition is taken from *Globally harmonized system of classification and labelling (GHS)*: 2003, Chapter 1.2, Definitions and abbreviations.

[SOURCE: IEC 62474:2012, definition 3.13]

4.10

substance group

one or more substances, where in the case of multiple substances they share at least one chemical sub-structure, or chemical or physical property under a generic name

[SOURCE: IEC 62474:2012, definition 3.14]

5 Terms relating to energy efficiency and power consumption

The terms relating to energy efficiency and power consumption described in this clause are intended to be applicable to all electrotechnical products. Table A.1 provides a structured overview as an aid to understanding these concepts. Where particular product sectors need to define additional terms to fulfil their particular needs, they should aim to do so within the structure of these concepts.

5.1

disconnected

condition of the equipment during which all connections to power sources supplying the equipment are removed or galvanically isolated and no functions depending on those power sources are provided

Note 1 to entry: The term "power source" includes power sources external and internal to the equipment.

5.2

duty cycle

combined fractions of time a product spends in specific power modes representing a certain use case

5.3

idle mode

condition during which the equipment can promptly provide a primary function but is not doing so

5.4

mode

distinct condition

Note 1 to entry: Any transition of equipment from or towards a neighbouring mode, either through user intervention or automatically initiated, should not be considered to form part of either mode.

Note 2 to entry: Delay between a stimulus and a response might be traded against power consumption in the current mode.

5.5

network integrity function

function to maintain a communication path external to the equipment

Note 1 to entry: The communication could be via wired or wireless interfaces.

Note 2 to entry: In order to communicate, it is necessary for the equipment to have at least one network port activated.

Note 3 to entry: The equipment is also considered to offer a network integrity function even though the equipment is not connected to the respective network (e.g. network cable unplugged)

5.6

off mode

condition during which the equipment only provides tertiary function(s)