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INTERNATIONAL STANDARD

NORME INTERNATIONALE

HORIZONTAL STANDARD

NORME HORIZONTALE

Environmentally conscious design – Principles, requirements and guidance

Écoconception (ECD) – Principes, exigences et recommandations

IEC 62430:2019-10(en-fr)

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Environmentally conscious design – Principles, requirements and guidance

Écoconception (ECD) – Principes, exigences et recommandations

INTERNATIONAL
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COMMISSION

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ENVIRONMENTALLY CONSCIOUS DESIGN – PRINCIPLES, REQUIREMENTS AND GUIDANCE

FOREWORD

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It is published as a double logo standard.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Scope is extended from electrotechnical product and systems to all products including services.
b) As a consequence of the scope expansion, non-electrotechnical products, services in particular, are taken into account to modify requirements.
c) Clause 6 is added as a guidance.

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The text of this International Standard is based on the following documents:

FDIS	Report on voting
111/536/FDIS	111/553/RVD

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

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

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

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

- reconfirmed,
- withdrawn,
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INTRODUCTION

The main purpose of this document is to set requirements and give guidance on how an organization can integrate environmentally conscious design (ECD) into their design and development. It is not a product standard and so does not describe requirements that apply to individual products, or a series of products.

This document uses the term ECD but other terminology used worldwide with the same meaning includes ecodesign, design for environment (DFE), green design and environmentally sustainable design.

This document covers physical goods, services, and a combination of the two, all of which are referred to as ‘products’.

ECD is not a separate activity; it is rather an integral part of an organization’s existing design and development. While this is not a management system standard, its requirements regarding ECD can be incorporated into an organization’s existing management system, such as created to support conformance with ISO 14001 and ISO 9001.

NOTE ISO 14001 links management of an organization's processes with environmental impacts, but it does not specify requirements for the management processes associated with design and development. Therefore, this ECD standard can be an addition for organizations which have ISO 14001 in place, as ISO 14001 does not specify how to incorporate ECD into products. ISO 14006 provides guidance on how to incorporate ECD into an environmental management system, however, it does not specify how to apply ECD.

Every product has environmental impacts, and these can occur during all stages of its life cycle. These impacts can range from slight to significant; they may be short-term or long-term; and they may occur at the local, national, regional or global level (or a combination thereof).

In order to minimize these impacts, it is essential to implement ECD within design and development. ECD is a systematic approach to achieve reduction of these adverse impacts of a product throughout its entire life cycle.

Multiple benefits can be achieved for the organization, its customers, and other stakeholders by applying ECD, such as an overall environmental improvement, a cost reduction, and better marketability.

This document is intended for those, directly and indirectly, involved in the implementation of ECD into the design and development.

This document does not preclude sectors from generating their own ECD specific standards or guidance. However, where such documents are produced, the authors are encouraged to use this document as a reference to ensure consistency across areas of various products and supply chains.

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ENVIRONMENTALLY CONSCIOUS DESIGN – PRINCIPLES, REQUIREMENTS AND GUIDANCE

1 Scope

This document describes principles, specifies requirements and provides guidance for organizations intending to integrate environmental aspects into the design and development in order to minimize the adverse environmental impacts of their products.

This document applies to processes on how ECD (environmentally conscious design) are integrated into the design and development. This document applies to any organization, regardless of its size, type or sector.

This document does not provide requirements for assessing the conformity of individual products.

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

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms related to design and development

3.1.1
environmentally conscious design
ECD
systematic approach which considers environmental aspects in the design and development with the aim to reduce adverse environmental impacts throughout the life cycle of a product

Note 1 to entry: Other terminology used worldwide with the same meaning includes ecodesign, design for environment (DFE), green design and environmentally sustainable design.

Note 2 to entry: This note applies to the French language only.

3.1.2
product
any goods or service

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

[SOURCE: ISO 14050:2009, 6.2, modified – Note 1 and 2 deleted and new Note 1 added.]

3.1.3
product group
group of technologically or functionally similar products where the environmental aspects can reasonably be expected to be similar

3.1.4
design and development
process that transforms requirements into a product

Note 1 to entry: Design and development usually follow a series of steps e.g. starting with an initial idea, transforming the idea into a formal specification, through to the creation of a product, its possible redesign and consideration of end of life.

Note 2 to entry: Design and development can include taking a product idea from planning to product provision and review of the product. It can include considerations on business strategies, marketing, research methods and design aspects that are used. It includes improvements or modifications of existing products.

3.1.5
process
set of interrelated or interacting activities which transforms inputs into outputs

[SOURCE: ISO 14001:2015, 3.3.5, modified – Note1 deleted.]

3.1.6
requirement
need or expectation that is stated, generally implied or obligatory

[SOURCE: ISO/IEC Directives, Part 1, Consolidated ISO Supplement, Annex L, Appendix 2:2019, 3.3, modified – Notes have been deleted.]

3.2 Terms related to product life cycle

3.2.1
life cycle
consecutive and interlinked stages of a product

Note 1 to entry: Examples of interlinked stages for goods include value proposition creation, design and development, manufacture of goods, delivery/installation of goods, use of goods, maintenance, repair, upgrade, re-use, remanufacture, end of life treatment and final disposal.

Note 2 to entry: Examples of interlinked stages of service include value proposition creation, design and development, preparation of enablers/capabilities to deliver the service, launch/delivery of the service, and service provision.

Note 3 to entry: The term “entire life cycle” refers to all life cycle stages that a product goes through, e.g. from raw material acquisition or generation from natural resources to the final disposal.

3.2.2
life cycle stage
life cycle phase
element of a life cycle

3.2.3
life cycle thinking
LCT
life cycle perspective
LCP
consideration of all relevant environmental aspects of a product during its entire life cycle

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Note 1 to entry: LCT does not imply undertaking a life cycle assessment.

Note 2 to entry: This note applies to the French language only.

Note 3 to entry: This note applies to the French language only.

3.3 Terms relating to those who control or influence ECD requirements

3.3.1
organization
person or group of people who have their own functions with responsibilities, authorities and relationships to achieve their objectives

[SOURCE: ISO/IEC Directives, Part 1, Consolidated ISO Supplement, Annex L, Appendix 2:2019, 3.1, modified – “that has” replaced with “who have” and “its” replaced with “their”.]

3.3.2
stakeholder
interested party
person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity

[SOURCE: ISO/IEC Directives, Part 1, Consolidated ISO Supplement, Annex L, Appendix 2:2019, 3.2]

3.3.3
value chain
entire sequence of activities or parties that create or receive value through the provision of a product

[SOURCE: ISO 26000:2010, 2.25, modified – “that provide” replaced with “that create”, “in the form of products or services” replaced with “through the provision of a product”, and notes deleted.]

3.4 Terms related to the environment

3.4.1
environment
surroundings which a product can affect, by its existence, including air, water, land, natural resources, flora, fauna, humans and their interrelations

Note 1 to entry: Surroundings can be described in terms of biodiversity, ecosystems, climate or other characteristics.

3.4.2
environmental aspect
element of an organization’s activities or products that interacts with, or can interact with, the environment

Note 1 to entry: An environmental aspect can cause (an) environmental impact(s). A significant environmental aspect is one that has or can have one or more significant environmental impact(s).

Note 2 to entry: Significant environmental aspects are determined by the organization applying one or more criteria.

Note 3 to entry: Activities of the organization are those related to design and development.

[SOURCE: ISO 14001: 2015, 3.2.2, modified – "or services" deleted and Note 3 added.]

3.4.3
environmental impact
change to the environment, whether adverse or beneficial, wholly or partially resulting from environmental aspects

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[SOURCE: ISO 14001:2015, 3.2.4, modified – “an organization’s” deleted.]

3.4.4
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.

3.4.5
objective
result to be achieved

Note 1 to entry: An objective can be strategic, tactical, or operational.

Note 2 to entry: An objective can be expressed in other ways, e.g. as an intended outcome, a purpose, an operational criterion, as an environmental objective, or by the use of other words with similar meaning (e.g. aim, goal, or target).

[SOURCE: ISO/IEC Directives, Part 1, Consolidated ISO Supplement, Annex L, Appendix 2:2019, 3.8, modified – Notes 2 and 4 deleted.]

3.4.6
environmental objective
objective set by the organization consistent with its environmental policy

[SOURCE: ISO 14001: 2015, 3.2.6.]

3.4.7
documented information
information required to be controlled and maintained by an organization and the medium on which it is contained

Note 1 to entry: Documented information can be in any format and media, and from any source.

Note 2 to entry: Documented information can refer to:

- the management system, including related processes;
- information created in order for the organization to operate (documentation);
- evidence of results achieved (records).

[SOURCE: ISO/IEC Directives, Part 1, Consolidated ISO Supplement, Annex L, Appendix 2:2019, 3.11]

4 Principles of environmentally conscious design (ECD)

4.1 General

The application of the following principles is fundamental to implement ECD:

- life cycle thinking;
- ECD as a policy of the organization.

4.2 Life cycle thinking

Life cycle thinking includes, but is not limited to, the following elements:

a) having an objective to reduce the overall adverse environmental impacts of the product while still taking into account other aspects such as safety, quality;

b) identifying the significant environmental aspects of the product;

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c) considering the trade-offs between different environmental aspects throughout all life cycle stages;

EXAMPLE 1: The trade-off between energy and material use when replacing an old product with a new one.

d) considering the trade-offs of a specific environmental aspect between life cycle stages.

EXAMPLE 2: Consider an automobile; selecting lightweight materials (e.g. high-alloy steel or aluminum) could require more energy to be expended in the manufacturing stage, but the trade-off would be lower fuel consumption during the use stage (due to the lower mass).

NOTE When a product is part of a system, the environmental performance of that product, during one or more life cycle stages, can be altered by other products in that system.

In order to include life cycle thinking within ECD, the above elements are considered as early as possible in the design and development, since that is when the greatest opportunities exist to make improvements to the product and to reduce any consequential adverse environmental impact.

4.3 ECD as a policy of the organization

The objective of integrating ECD into the policy of an organization and its implementing strategy is to ensure:

a) management understanding of and commitment to ECD;

b) early contribution and commitment of all relevant business functions to the environmental objectives for the product throughout its entire life cycle.

5 Requirements of ECD

5.1 General

5.1.1 Integrating ECD into the management system of the organization

The organization shall establish, implement, and maintain ECD as an integral part of design and development by integrating corresponding requirements into the related procedures and instructions.

ECD shall be reflected in the policy and strategy of the organization.

If an organization has a management system which includes design and development, the ECD shall be a part of that management system.

NOTE Management systems are described, for example, in ISO 9001 and ISO 14001. ISO 14006 provides guidelines for incorporating ECD into a management system.

5.1.2 Determining the scope of ECD

The organization shall determine the scope of ECD for a particular product or product group. This scope shall consider the relevant stakeholder requirements, and environmental aspects relevant to the product (or product group, as applicable) and the environmental sphere of influence of the organization.

NOTE 1 Depending on the nature of the organization's product, the scope can include manufacturing, remanufacturing, and service provision.

NOTE 2 The sphere of influence is the ability of an organization to affect other organizations through contractual, economic or other relationships to affect the decisions, activities or requirements of these other organizations.

5.1.3 Elements of ECD

Elements of ECD incorporated into the design and development are:

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a) identification and analysis of relevant stakeholder requirements (see 5.2);
b) identification and evaluation of environmental aspects and corresponding impacts (see 5.3);
c) incorporation of ECD into design and development (see 5.4);
d) review and continual improvement (see 5.5);
e) information exchange (see 5.6).

NOTE The above items from a) to d) correspond to a PDCA (plan, do, check and act) cycle as follows:

- steps a) and b) correspond to Plan;
- step c) corresponds to Do;
- step d) corresponds to Check and Act.

5.1.4 Documented information

The scope determined in 5.1.2 shall be maintained as documented information and be available to relevant stakeholders.

The results obtained from the elements listed in 5.1.3 shall be documented, including subsequent conclusions and responsibilities assigned.

5.2 Analysis of stakeholder environmental requirements

The organization shall establish, implement, and maintain a process to identify the following items regarding the product being designed and developed:

- the relevant stakeholders;
- the generic, sector specific, product group specific, and product specific environmental requirements of the stakeholders.

NOTE 1 Generic requirements are those requirements that are applicable to any product, e.g. energy saving requirements.

NOTE 2 Sector specific requirements are those requirements that are applicable to a specific sector, e.g. automotive sectors.

NOTE 3 Product (group) specific requirements are those requirements that are applicable to a specific product (group), e.g. vacuum cleaners.

In implementing the above, the organization shall ensure that:

a) requirements from relevant stakeholders are identified, for example, covering:
   – the different life cycle stages where the requirements are applicable;
   – environmental aspects of the product;
   – the intended geographic market of the product;
   – activities of the organization related to the design and development of the product.
b) current and emerging relevant stakeholder requirements are identified, reviewed and updated as needed;
c) an analysis of the requirements in a) and b) is performed, to identify the affected potential functions and life cycle stages of the product;
d) steps from a) to c) are periodically repeated to address new or changed requirements which occur during design and development.

NOTE 4 It is for the organization to determine what life cycle stages are included.

5.3 Identification and evaluation of environmental aspects

The organization shall establish, implement and maintain a process to identify and evaluate product-related environmental aspects. The process shall take into account environmental

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impacts corresponding to those environmental aspects of the product throughout the life cycle, and the scope of ECD determined in 5.1.2.

When assessing the environmental aspects of a product the steps below shall be followed:

a) identification of environmental aspects relevant to a product or product group;
b) evaluation of environmental impacts related to the identified environmental aspects;
c) determination of significant environmental aspects.

It is permitted to use qualitative or quantitative evaluation and prioritization of the environmental aspects. Where feasible, the quantitative approach is encouraged.

5.4 Incorporation of ECD into design and development

The organization shall establish, implement and maintain a process to ensure that the following tasks are carried out during design and development:

a) specify the functions to be provided by a product;
b) determine the relevant environmental parameters, taking into account legal and other relevant stakeholder requirements, and significant environmental aspects;
c) determine improvement strategies for the environmental parameters;
d) set environmental objectives for the environmental parameters based on the improvement strategies;
e) create a product specification addressing the environmental objectives;
f) create solutions to realize the specification while taking into account other design considerations.

NOTE 1 ECD is a multi-disciplinary set of activities and functions involved in design and development within an organization or value chain (e.g. design engineers, logistics, procurement, sales and suppliers).

The product solution resulting from design and development should achieve a balance between the various environmental aspects including relevant stakeholder requirements (see 5.2) and other requirements such as function, technical requirements, quality, performance, safety, economic aspects, ethical and social value, and technical and business risks.

NOTE 2 Further guidance on and definition of ethical and social value is provided in ISO 26000.

When compliance with regulations (e.g. health and safety) is required, these shall be met while considering the environmental objectives.

5.5 ECD review

5.5.1 Process review

The organization shall establish, implement and maintain a process to conduct reviews to ensure that the resulting system implements the requirements of this document correctly and fully.

Such reviews shall be conducted at planned intervals and additionally when necessary, to ensure that ECD is implemented and maintained in a suitable and effective manner.

Each review shall include assessing opportunities for improving how ECD is implemented resulting in a decision whether or not relevant policies and strategies of the organization need to be updated.

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5.5.2 Design review

The organization shall establish, implement and maintain a process to review the ability to further reduce significant environmental impacts of products.

These reviews shall be conducted at planned intervals or when necessary, to ensure that each life cycle stage is considered, taking into account changes in both internal and external factors (such as revised relevant stakeholder requirements).

Improvement actions shall be determined and implemented based on knowledge gained through the review if:

- the environmental objectives have not been met; or
- the environmental objectives are no longer appropriate or valid.

5.5.3 Documented information of reviews

Documented information obtained from the reviews specified in 5.5.1 and 5.5.2, including the assigned actions arising from the review, shall be created, retained and serve as a reference for the future development of the product and continual improvement activities.

5.6 Information exchange

As part of the ECD, the organization shall exchange information with relevant stakeholders in the value chain to achieve its environmental objective. If the information from the value chain is not available the organization shall take other measures to obtain the required information.

The information to be exchanged in the value chain should facilitate the reduction of adverse environmental impacts throughout the entire life cycle of the product.

6 Guidance on implementing ECD

6.1 General

6.1.1 Overview

Subclause 6.1 provides guidance on implementing 5.1. Annex A provides examples of how to apply ECD. Annex B provides information on how to select methods and tools for ECD. This document also applies to design and development in multiple organizations, and activities occurring in different locations, providing one organization has overall responsibility for design and development.

6.1.2 Integrating ECD into the management system of the organization

ECD should not be a separate activity, rather it should be an integral part of the design and development within an organization. Hence, the organization's policies and strategy determine the framework and objectives of the ECD, including the resource allocation (e.g. financial and human resources and time allocation for completing the tasks). The strategy also needs to cover engagement with relevant internal and external stakeholders to improve the organization's ECD.

As an example, an organization could establish policies or strategies to improve the environmental performance of specific areas of its products. It could then have a mechanism to determine if these policies or strategies have been met. It is for the organization to determine the appropriate timescales, for example in short-term, medium-term and long-term action plans.

ISO 14006 provides guidance on how an organization can integrate ECD into their existing management system.

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Continual improvement refers to a recurring process to improve performance over time, according to a plan set by the organization. Using the plan-do-check-act (PDCA) cycle can facilitate continual improvement.

6.1.3 Determining the scope of ECD

The scope of ECD will usually have an impact on other parts of the value chain within an organization. Moreover, choices and decisions made during the design and development will modify the environmental impacts caused by a product throughout its life cycle.

The scope of ECD can vary depending on the organization, its relevant stakeholder requirements and environmental sphere of influence.

The scope of ECD is set by the organization carrying out the design and development. It will be dependent on the range of activities that the organization can influence through design and development. Decisions made in the design and development influence activities such as choice of raw materials, manufacturing methods, logistics, sale, use and maintenance arrangements for the product, and end of life. Some of these influences could be internal to the organization while others could be external to it.

Guidance concerning relevant stakeholder requirements are given in 6.2 and environmental aspects relevant to a product are given in 6.3.

The sphere of influence is also determined on a case by case basis. The organization can have influence over suppliers in the value chain. If this is the case, it can determine the scope of ECD including those suppliers. If this is not the case, it could be feasible for an organization to increase its influence over time as part of their continual improvement plan, working together with their suppliers. In many cases, an organization can influence downstream users (e.g. customers) through various kinds of communication (e.g. user manuals, call centres), which suggests the organization may include downstream users in the value chain into its scope of ECD. In particular, in the field of service provisioning, the business activities are carried out in the interactions with customers and they can naturally be covered in the scope of ECD.

6.1.4 Elements of ECD

No guidance is needed regarding this subclause.

6.1.5 Documented information

No guidance is needed regarding this subclause.

6.2 Analysis of stakeholder requirements

This subclause provides guidance on implementing 5.2.

The requirements of relevant stakeholders regarding a product can be appropriate for any life cycle stage.

There are many stakeholders and their associated requirements, which can be external or internal to the organization undertaking the ECD. Examples include:

- local, national, regional and international legal requirements;
- local, national, regional and international technical standards and voluntary agreements;
- customer requirements and specifications;
- requirements from internal functions of the organization (e.g. logistics, production/service/maintenance personnel, sales/marketing and procurement);
- benchmark and market analysis reports;

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- eco-label and sustainable procurement schemes;
- technical documentations from suppliers;
- societal, investor and media expectations.

When choosing which requirements are relevant, it is suggested to consider factors such as those that have to be met in all cases (e.g. those stemming from legal provisions which apply to the products under design or development) and those that are optional. The optional requirements can be then ranked by the organization into those which are, and are not, included in the specification for the design and development.

As stakeholder requirements change with time it is important to have a process to periodically check for changes that could affect the organization's products.

6.3 Identification and evaluation of environmental aspects

This subclause provides guidance on implementing 5.3.

A product has a range of environmental aspects that result in environmental impacts as described below.

The environmental impacts of goods are largely caused by the material and energy inputs and outputs that are generated at all life cycle stages. A service can cause environmental impacts through the use of goods associated with that service. Environmental impacts of a service can be caused by both the direct use of resources and also by managing and accessing infrastructures, which are needed to deliver the service. Furthermore, these environmental impacts can be influenced by the actions of the organization and individuals using the product.

For example, for every life cycle stage, a product has a range of environmental aspects that are related to:

- inputs (e.g. virgin or recycled material, substances, new/reused/remanufactured parts, subassemblies, spare parts, consumables, and energy);
- outputs (e.g. products, substances, parts, subassemblies, spare parts, consumables, semi-finished products, rejects, emissions to air, soil and water, wastes).

These aspects result in various environmental impacts (e.g. acidification, air/water/soil pollution, alteration of habitats, climate change, depletion of resources, eutrophication, ozone depletion, reduction of biological diversity, and smog formation).

Environmental aspects can result in risks and opportunities associated with either adverse impacts (threats) or beneficial ones (opportunities). Significant environmental aspects are those that have or can have significant environmental impacts.

As explained in 3.4.2, the significance is determined in accordance with criteria defined by an organization. It is important that the organization should develop relevant objective criteria and consistently use it throughout ECD.

The process of identifying and evaluating environmental aspects of a product should explicitly include its life cycle to be designed or redesigned. The purpose is to determine which aspects have or could have a significant impact on the environment. This generally follows the steps as follows:

a) Understanding the life cycle of the product.

b) Identification of the environmental aspects associated with all the life cycle stages of the product within the scope of ECD determined by the organization (see 5.1):

   For each life cycle stage of the product being designed or developed, the organization should identify environmental aspects, both inputs and outputs (see Clause A.1) that result

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in environmental impacts. An arbitrary emphasis on a single environmental aspect or a single life cycle stage should be avoided.

c) Evaluation of environmental aspects to determine their significance:

In order to determine what aspects are significant, the organization should establish a method, based mainly on environmental criteria, which should take into account as many types of environmental impacts as possible. The result of the evaluation should be reproducible and repeatable.

When designing or redesigning a product, the evaluation of the significance of its environmental aspects can be performed on the basis of a previous model of the product, a similar product on its market, or a prototype.

A quantitative approach can be judged by a numerical value and so should be capable of being determined in a repeatable and reproducible manner. A qualitative approach involves distinctions based on qualities and so it is important that it is based on objective criteria.

6.4 Incorporation of ECD into design and development

This subclause provides guidance on implementing 5.4.

When considering both environmental and other requirements, as identified in 5.2 and 5.4, it is for the organization to decide which of these, possibly contradictory, requirements are incorporated into the product specification.

The organization evaluates various design and development approaches with the aim of reducing the adverse environmental impacts caused by the product over its entire life cycle. The following provides examples of possible design and development considerations:

a) determine product function considering opportunities for multiple functions and modularity, and consider dematerialization comparing the environmental performance to that of product's tailored for a specific use;

b) define significant environmental parameters based on stakeholder requirements determined in accordance with 6.2 and environmental aspects determined in accordance with 6.3;

c) consider the significant environmental parameters determined in b) and decide what design and development strategies will deliver an improvement in them (these can be long-term or short-term);

d) set environmental objectives based on the environmental parameters determined in c);

e) develop a design specification of the product addressing the environmental objectives determined in d);

f) any guidance on the applicability of technical solutions and concepts would be product-specific and so is outside the scope of this document.

6.5 Review

6.5.1 Process review

This subclause provides guidance on implementing 5.5.1.

In comparison with a design review, the process review addresses the overall appropriateness of ECD and does not focus on specific products.

6.5.2 Design review

This subclause provides guidance on implementing 5.5.2.

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As part of the ECD, an appropriate procedure for reviewing the significant environmental aspects and resulting impacts of products throughout their life cycle should be defined including the timing of these reviews. For example, these could be initiated:

- at the completion of a major design stage;
- when new information on major aspects or uses of the product are emerging;
- when a significant environmental aspect is affected by emerging relevant stakeholders requirements;
- when new information concerning the interaction of the product with the environment arises;
- when the strategy of the organization changes; including the changes in the environmental objectives set by the organization.

Information concerning the product's environmental aspects or inputs can change after the product launch. Consequently, design reviews should, as part of continual improvement, include checking the appropriateness and validity of environmental objectives.

The organization should establish a process in the case where the environmental objectives for a product have not been met. The organization could choose to launch the product together with an improvement action plan. In such cases, a product review should confirm that the planned improvement actions have been implemented.

6.5.3 Documented information of reviews

This subclause provides guidance on implementing 5.5.3.

The documented information from reviews can be in any form or format. Determining an appropriate retention period is the responsibility of the organization undertaking the ECD.

6.6 Information exchange

This subclause provides guidance on implementing 5.6.

Information exchange between relevant stakeholders within the value chain supports collaboration which can support the analysis and improvement of environmental aspects and associated impacts covering the whole life cycle of a product.

Communication and information exchange across the value chain can be facilitated by standardized formats.

NOTE 1 IEC 62474 describes the exchange of information on material declarations.

Information exchange for cooperation among the relevant stakeholders involved should start as early as possible in the ECD.

Information to be exchanged can include:

a) resources used and recovered during the entire life cycle of the product;
b) emissions and waste generated by the product during its entire life cycle;
c) end of life treatment instructions to recyclers;
d) guidance to achieve or improve environmental performance of the product;
e) environmental labels and declarations relevant to the product.

NOTE 2 ISO 14020 provides information on environmental labels and declarations.

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