



**GUIDE 64**

**Guide for the inclusion of  
environmental aspects in  
product standards**

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ISO Guide 64:1997

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First edition 1997

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

ISO guides are intended essentially for internal use in ISO committees or in some cases for the guidance of member bodies when dealing with matters that would not normally be the subject of an International Standard.

ISO Guide 64 was drawn up by Technical Committee ISO/TC 207, *Environmental management*, and was approved by ISO and IEC national bodies.

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International Organization for Standardization  
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

## Introduction

Every product has some impact on the environment during its manufacture, distribution, use or disposal. These impacts may range from slight to significant; they may be short-term or long-term; and they may occur at the global, regional or local level. Provisions in product standards may have a significant influence on the extent of these environmental impacts.

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# Guide for the inclusion of environmental aspects in product standards

## 1 Scope

1.1 This Guide covers the consideration of environmental impacts in product standards. It is intended for standard writers; its purpose is

- a) to raise awareness that provisions in product standards can affect the environment in both negative and positive ways;
- b) to outline the relationship between product standards and the environment;
- c) to help avoid provisions in product standards that may lead to adverse environmental impacts;
- d) to emphasize that addressing environmental aspects during the development of product standards is a complex process and requires balancing competing priorities;
- e) to recommend the use of life-cycle thinking and recognized scientific techniques when addressing environmental aspects of a product being standardized.

1.2 In order to achieve the purposes listed in 1.1, this Guide

- a) sets forth some general considerations that should be taken into account when developing product standards that achieve a proper balance between product function and environmental impacts;
- b) outlines ways in which provisions in product standards may affect the environment during the stages of a product's life cycle;
- c) addresses techniques for identifying and assessing the environmental impacts of provisions in product standards;
- d) highlights some ways to reduce adverse environmental impacts resulting from provisions in product standards.

To reflect the diversity of environmental impacts that products can have, this Guide may need to be supplemented by sectoral guides.

## 2 References

ISO 14001:1996, *Environmental management systems — Specification with guidance for use*

ISO 14040 —,<sup>1</sup> *Environmental management — Life cycle assessment — Principles and framework*

ISO/IEC Guide 2:1996, *Standardization and related activities — General vocabulary*

IEC Guide 109:1995, *Environmental aspects — Inclusion in electrotechnical product standards*

## 3 Definitions

For the purposes of this Guide, the following definitions apply.

### 3.1 standard writer

any person taking part in the preparation of standards

### 3.2 environmental aspect

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

NOTE — A significant environmental aspect is an environmental aspect that has or can have a significant environmental impact.

[ISO 14001]

### 3.3 environmental impact

any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services

[ISO 14001]

### 3.4 life cycle

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

[ISO 14040]

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<sup>1</sup> To be published.

### 3.5 prevention of pollution

use of processes, practices, materials or products that avoid, reduce or control pollution, which may include recycling, treatment, process changes, control mechanisms, efficient use of materials and material substitution

NOTE — The potential benefits of prevention of pollution include the reduction of environmental impacts, improved efficiency and reduced costs.

[ISO 14001]

### 3.6 product standard

standard that specifies requirements to be fulfilled by a product or group of products, to establish its fitness for purpose

#### NOTES

1 A product standard may include in addition to the fitness for purpose requirements, directly or by reference, aspects such as terminology, sampling, testing, packaging and labelling and, sometimes, processing requirements.

2 A product standard can either be complete or not, according to whether it specifies all or only a part of the necessary requirements. In this respect one may differentiate between standards such as dimensional, material and technical delivery standards.

[ISO/IEC Guide 2]

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## 4 General considerations

**4.1** Every product has some impact on the environment. These impacts may occur at any or all stages of the product's life cycle and can be local, regional or global, or a combination of all three.

**4.2** Anticipating or identifying a product's environmental impacts is complex and agreement is occasionally lacking on environmental cause-and-effect relationships. Attempts to address a given environmental impact may have consequences at any or all of the stages of a product's life cycle.

**4.3** Despite the difficulties involved, a product's environmental impacts should be considered when product standards are developed. Prevention of pollution, resource conservation and other ways to reduce adverse environmental impacts should be considered. The intended use and reasonably foreseeable misuse of a product should also be considered.

**4.4** A product's environmental impacts should be balanced against other factors, such as product function, performance, safety and health, cost, marketability and quality; legal and regulatory requirements have to be met.

**4.5** Because the rate of innovation is high, review of product standards should be considered whenever the adverse environmental impacts might be significantly reduced by the application of new knowledge.

**4.6** Provisions in product standards that are too restrictive may have the unintended effect of stifling innovation and environmental improvements.

## **5 Influence of provisions in product standards on the environment**

**5.1** In developing product standards, it is important to recognize how products can affect the environment at different stages of their life cycle. The specific provisions of the product standard will, to some extent, determine the relevant environmental aspects peculiar to the product covered by the standard. In order to avoid excessive or inefficient material or energy use, provisions should be no more stringent than necessary to achieve the product's purpose throughout its expected life. Conversely, provisions that are unduly lax may force the product to be frequently replaced.

**5.2** When specifying requirements, such as descriptive requirements or performance requirements, provisions in product standards affect the choices made during the design and production of a new or improved product. For example, during all stages of the product's life cycle these choices can influence

- a) the inputs and outputs associated with production processes;
- b) the inputs and outputs associated with packaging, transportation, distribution and use;
- c) the options for reuse and recovery, including recycling or energy recovery of the product, as well as its ease of disassembly, repair and restoration;
- d) the options for disposal of the product and associated waste.

**5.3** The impacts these choices have on the environment will vary from product to product. All products will not necessarily affect the environment equally at all stages of their life cycle.

**5.4** Because a product's environmental impacts are usually interrelated, an arbitrary emphasis on a single environmental impact may alter environmental impacts at other stages of the product's life cycle or in other aspects of the local, regional or global environment.

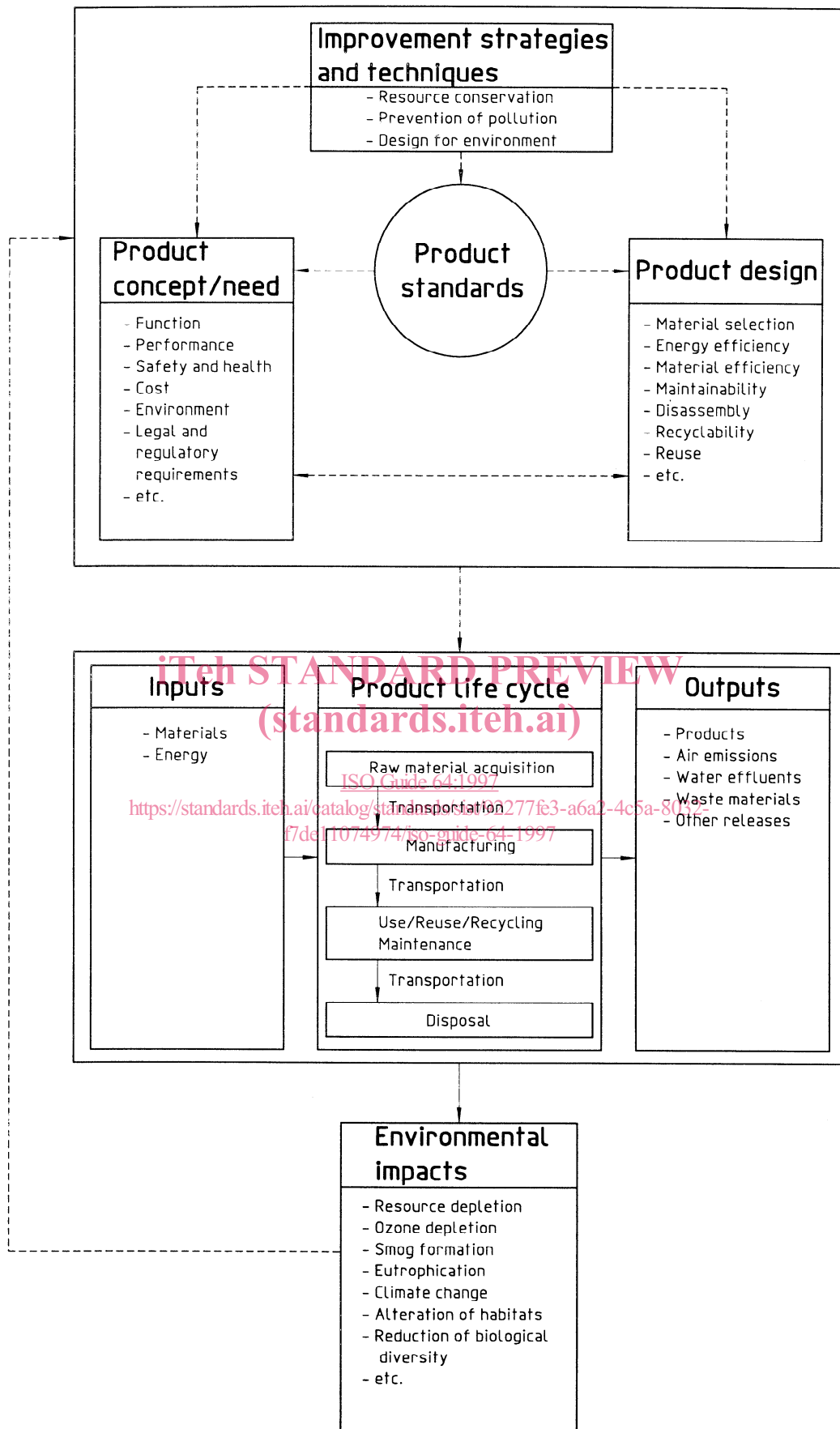
## **6 Inputs and outputs to be considered in the development of product standards**

**6.1** A product's environmental impacts are largely determined by the inputs that are used and the outputs that are generated at all stages of the product's life cycle. Changing any single input, either to alter the materials and energy used, or to influence a single output, may affect other inputs and outputs. (See figure 1.)

**6.2** Inputs fall into two broad categories: materials and energy.

**6.2.1** Material inputs to the raw material acquisition, manufacturing, transportation (including packaging and storage), use/maintenance, reuse/recycling, and disposal of products can produce a variety of environmental impacts. Material inputs used in product development should also be considered. These impacts can include depletion of renewable and non-renewable resources, detrimental land use, and environmental or human exposure to hazardous materials. Material inputs can also contribute to the generation of waste, emissions to air, effluents to water, and other releases.





**Figure 1 — Conceptual relationship between provisions in product standards and the environmental impacts associated with the product during its life cycle**