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Packaging and the environment — Organic recycling

Emballage et environnement — Recyclage organique

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 18606 was prepared by Technical Committee ISO/TC 122, *Packaging*, Subcommittee SC 4, *Packaging and environment*.

Introduction

Packaging plays a critical role in almost every industry, every sector, and every supply chain. Appropriate packaging is essential to prevent loss of goods and as a result decrease impact on the environment. Effective packaging makes a positive contribution towards achieving a sustainable society by, e.g.:

a) meeting consumer needs and expectations for the protection of goods, safety, handling, and information;

b) efficiently using resources and limiting environmental impact;

c) saving costs in the distribution and merchandising of goods.

An environmental assessment of packaging should include the manufacturing and distribution system, the wastage of packaging material and goods, the relevant collection systems, as well as recovery or disposal operations. This group of ISO standards and supporting reports provides a set of procedures which aim to:

d) reduce environmental impact;

e) support innovation in product, packaging, and the supply chain;

f) avoid undue restrictions on the use of packaging;

g) prevent barriers and restrictions to trade.

A package should be designed to provide a number of functions for users and producers such as: containment, protection, information, convenience, unitization, handling, delivery, or presentation of goods. A major role of packaging is prevention of damage to or loss of goods. (See ISO 18601 Annex A for a list of the functions of packaging.)

ISO 18601 defines the interrelationships within the family of ISO standards which cover the environmental impact of packaging throughout its life cycle (see Figure 1). These standards will help define whether the selected packaging can be optimized and whether the packaging needs to be modified to ensure it can be reused or recovered after use.

Third-party certification is not required to demonstrate the requirements of these standards are met.

There are different methods to which public claims on the environmental attributes of packaging are discussed. Some of these are technical aspects on reuse or recovery, others relate to access by the population to reuse or recovery systems or the amount of packaging placed on the market for recovery. This series of standards addresses the technical aspects of the packaging. They do not address the requirements of ISO 14021 needed to support a claim or label.

This International Standard does not use the term “and/or” but instead the term “or” is used as an inclusive disjunction, meaning one or the other or both.

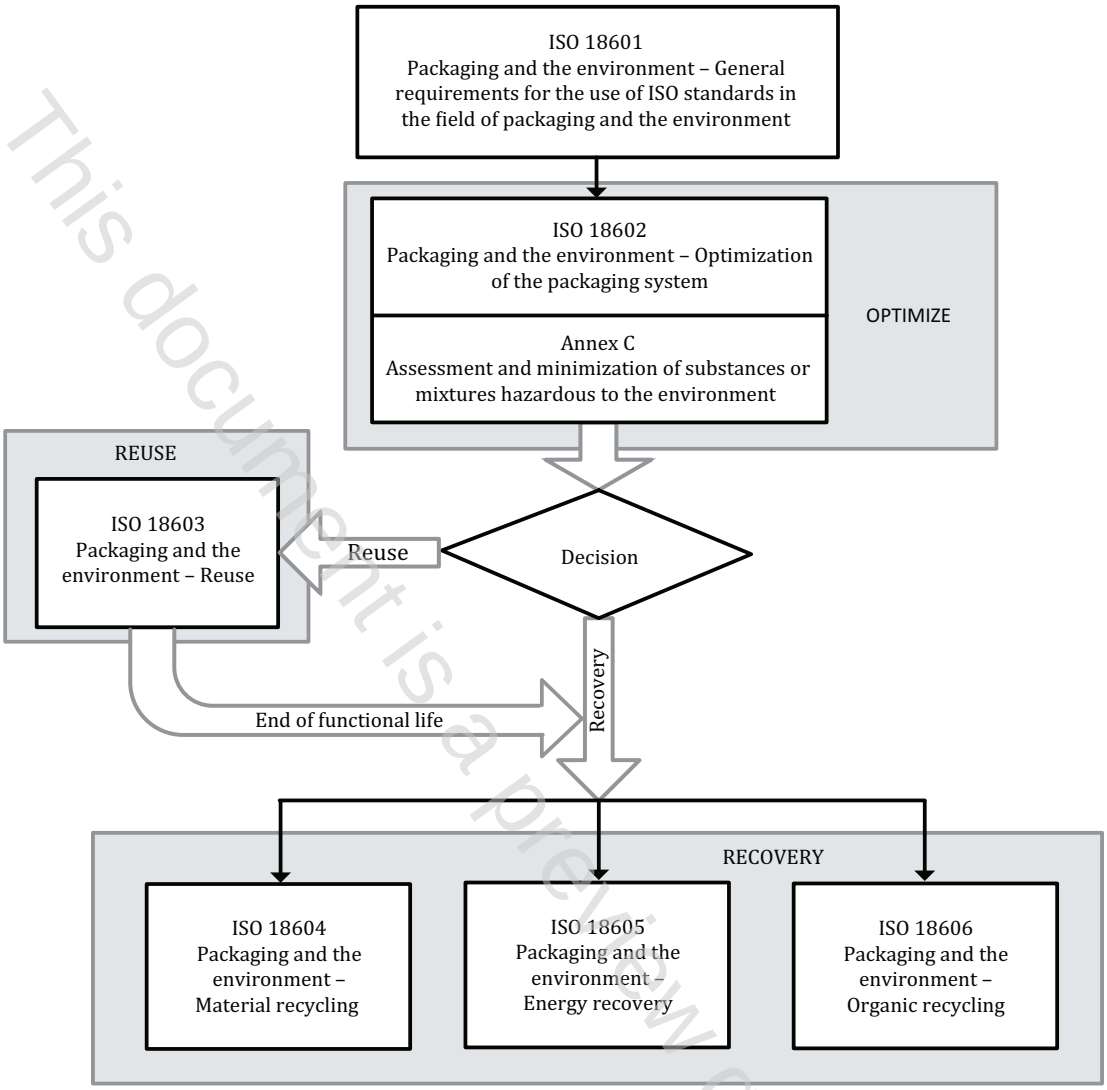

Figure 1 — Relationship of the Packaging and environment standards

The purpose of packaging is the containment, protection, handling, delivery, and presentation of products. In order to save resources and minimize waste, the whole system in which the packaging takes part should be optimized. This includes prevention as well as reuse and recycling of used packaging. Organic recycling by industrial aerobic composting or anaerobic digestion coupled with composting is an option for reducing the need for final disposal of used packaging while increasing the options for its recycling. This International Standard defines the standard specification to be met for packaging to be recovered by organic recycling.

Organic recycling, organic recovery, and biological recycling are interchangeably used to indicate biological waste treatment processes applied to used packaging to produce compost (in industrial composting plants) or compost and biogas (in anaerobic digestors). Examples of packaging suitable for organic recycling are provided in Annex E.

This International Standard presents a framework for self-assessment to determine whether the organic recycling has been met.

Packaging and the environment — Organic recycling

1 Scope

This International Standard specifies procedures and requirements for packaging that are suitable for organic recycling. Packaging is considered as recoverable by organic recycling only if all the individual components meet the requirements.

Therefore, packaging is not considered recoverable by organic recycling if only some of the components meet the requirements laid down in this International Standard. However, if the components can be easily, physically separated before disposal, then the physically separated components can be individually considered for organic recycling.

This International Standard is applicable to organic recycling of used packaging but does not address regulations that exist regarding the recoverability of any residual packaged goods.

This International Standard does not provide information on requirements for the biodegradability of used packaging which ends up in the soil environment as litter, because littering is not considered as a recovery option. This International Standard is also not applicable to biological treatment undertaken in small installations by householders.

For each of the packaging components the following four aspects are addressed:

a) biodegradation;

b) disintegration during biological waste treatment process (i.e. composting);

c) negative effects on the biological process;

d) negative effects on the quality of the resulting compost, including the presence of high levels of regulated metals and other substances hazardous to the environment.

This International Standard establishes the requirements for packaging suitable for organic recycling.

NOTE "Organically recoverable", "compostable", or "compostable packaging in municipal and industrial composting facilities" or "biodegradable during composting" are expressions considered to be equivalent to organically recyclable for the purposes of this International Standard.

The procedure for applying this International Standard is contained in ISO 18601.

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.

ISO 14851, *Determination of the ultimate aerobic biodegradability of plastic materials in an aqueous medium — Method by measuring the oxygen demand in a closed respirometer*

ISO 14852, *Determination of the ultimate aerobic biodegradability of plastic materials in an aqueous medium — Method by analysis of evolved carbon dioxide*

ISO 14855-1, *Determination of the ultimate aerobic biodegradability of plastic materials under controlled composting conditions — Method by analysis of evolved carbon dioxide — Part 1: General method*