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**Graphic technology — Requirements  
for communication of environmental  
aspects of printed products —**

**Part 1:  
General printing**

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*Technologie graphique — Exigences pour la communication des  
aspects environnementaux des produits imprimés —*

*Partie 1: Impression en général*

ISO 22067-1:2022

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

A list of all parts in the ISO 22067 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

Introduction

This document provides requirements for effective communication of environmental aspects of products and processes for participants in print production supply chains. [Figure 1](#) provides an overview of the some of the elements to which it applies.

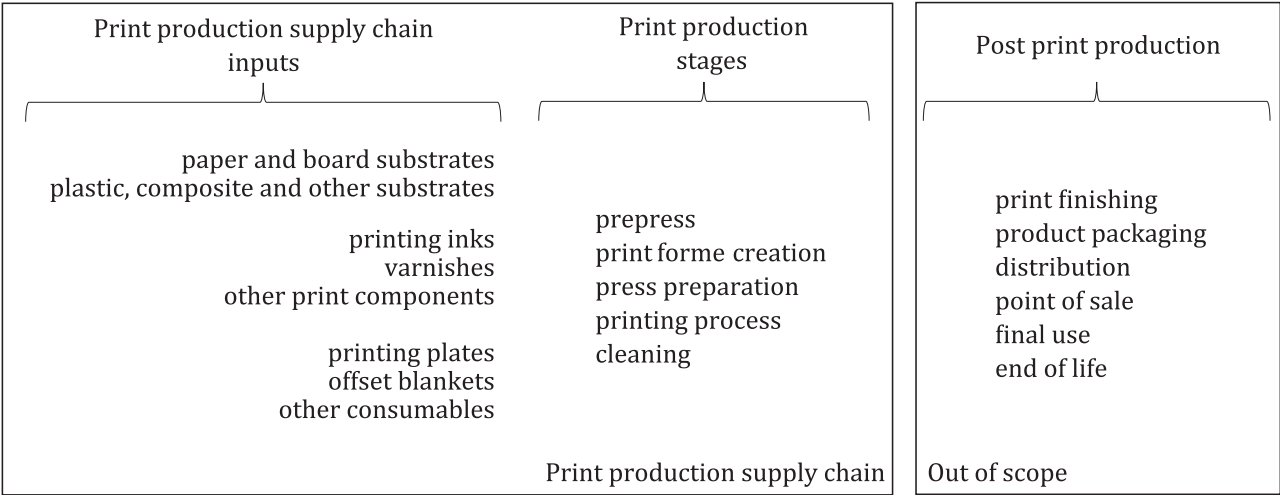
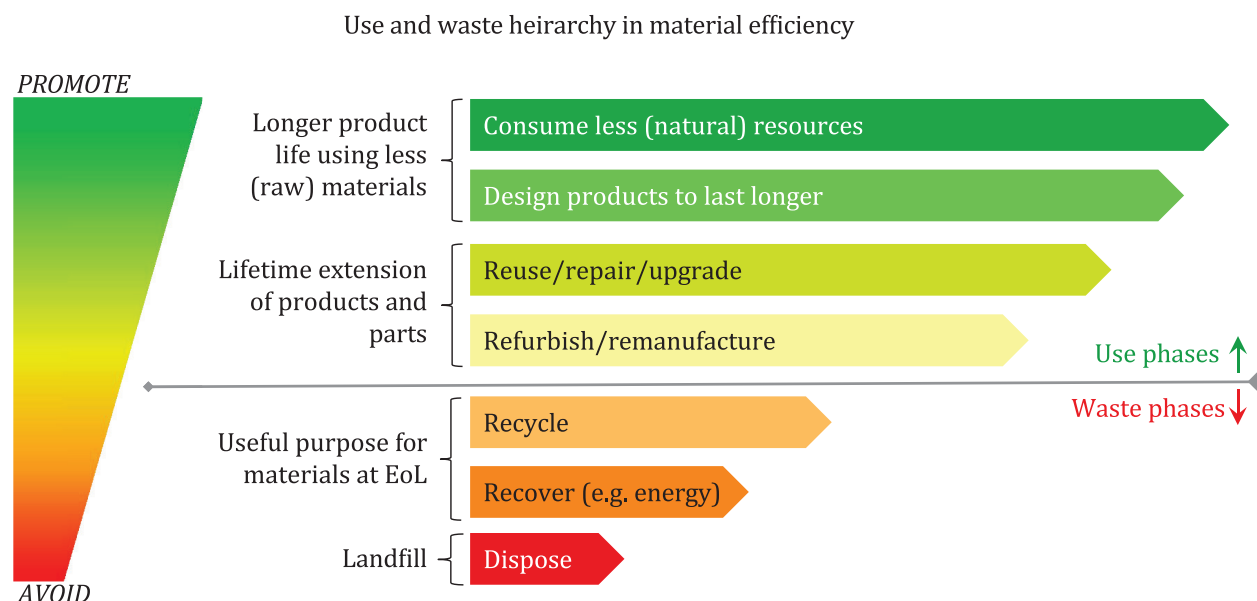


Figure 1 — Elements of print production

While the requirements and criteria in this document promote communication of environmental impacts from the technical aspects of general printed products, they are not in and of themselves a labelling system.

Eco-labelling systems confirm stated environmental performance claims and many environmental certification programs are relevant for graphic technologies and products, for example those endorsed by the global eco-labelling network (GEN). Such labels are convenient and widely used in various markets and, when tied to a robust scheme, can be very effective. However, these labels do not necessarily communicate application-specific environmental aspects and impacts. Potentially negative environmental aspects and impacts of printed products can be outweighed by other positive benefits, such as recyclability. Many eco certification schemes use a points-based inventory of checks to determine overall environmental aspects and impacts. In such schemes, certification is awarded when the overall number of points fulfils the certification scheme’s requirements, but such an approach can conceal negative impacts. In other words, although the scheme is convenient and easy for users of the final product to understand, these systems do not provide a complete picture of the environmental aspects and impacts of the product to the stakeholders.

In advanced initiatives, recycling is no longer considered to be the best option for environmental impact mitigation (see [Figure 2](#)). These approaches require the improvement of material efficiency, prolonging the life of products, and encouraging product designs that do not assume disposal. Considering the use cases of printed products, it is often not useful to extend their lifetime, and these approaches cannot be applied directly, but there are many things to learn from them.



NOTE In the IEC Webinar ACEA on circular economy and material efficiency<sup>[30]</sup>, the presentation material and video can be seen from "Past webinars". Find the webinar held on 2020-02-14.

**Figure 2 — Advanced concept to reduce the environmental impact**

Efficient use of materials is an aspect of production that applies to the printing industry. An example of such a consideration is that plastic film products may be designed to take into account when and how to end their lifetime. Such considerations may be extended to all printed products. At least, it should be possible to design in consideration for the recyclability.

Even if the printing industry is unable to reach such a level immediately, efforts should be made to avoid the use of environmentally harmful substances as the first step. Where the use of such substances cannot be avoided, it should be a priority that information on their environmental aspects and impacts is communicated along printing industry supply chains. Printing industry stakeholders must be able to accurately extract and use information on environmental aspects and impacts of production processes and materials. The ISO 22067 series is a means to contribute to this.

Currently, the graphics industry has no formal tools to stipulate which data relating to environmental aspects and impacts should be collected and communicated between stakeholders. Accurate data for production-related environmental aspects and impacts is therefore generally unavailable to interested parties in the supply chain. ISO 22067 is a multi-part document providing sector specific requirements for data to be used in environmental impact evaluation and aimed at solving this problem in the graphics industry. The series provides a means for quantifying printing systems specific environmental aspects and impacts, to encourage the communication and use of relevant and accurate environmental data. For example, the environmental information prepared by manufacturers of printing inks can be quantified in a standard way and made available to stakeholders considering recycling of printed materials.

The ISO 22067 series relates to the production of print media products, but not their entire life cycle. This document specifies general requirements and criteria for the data to be collected and communicated between stakeholders to quantify environmental risks for materials, equipment and products used for general printed products. Participants in the print production process, whether as a supplier of materials, a printer, a print buyer, consumer, recycler or re-user of printed materials can use the information gathered according to this document to consider the environmental aspects and impacts associated with all stages of the print production process.

When providing data to the supply chain, participants in the supply chain require those data to be credible. Since this document has been developed in harmony with the ISO 14020 series it can be used to quantify more accurately environmental aspects and impact data related to print media production of interest to consumers, print buyers, printers, regulatory agencies, environmental agencies and other

stakeholders. All stakeholders can use print industry sector specific documents that conform with ISO 22067 to provide clear communication of environmental aspects and impacts to other interested parties throughout supply chains.

Due to the nature of security printing, communication of environmental aspects of components or processes used may pose a security risk or otherwise weaken the security of the final product. For this reason, security printing is excluded from the communication requirements of this document.

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# Graphic technology — Requirements for communication of environmental aspects of printed products —

## Part 1: General printing

### 1 Scope

The ISO 22067 series specifies requirements and criteria for communication of environmental aspects within the print production supply chain. This document specifies requirements for environmental communication on print production, including all processes and print components used for the production of the final printed materials. This document is applicable for most printing methods but excludes, due to their unique processing requirements, printing on textiles and ceramics.

NOTE Recognising established environmental communication, provision is made (see [Clause 4](#)) to permit communication of environmental information for paper, board or other substrates based on requirements and guidelines provided by standards organizations or industry bodies.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14067, *Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification*

ISO 16759, *Graphic technology — Quantification and communication for calculating the carbon footprint of print media products*

ISO 18605:2013, *Packaging and the environment — Energy recovery*

### 3 Terms and definitions

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

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

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

#### 3.1

##### **organic recycling**

controlled microbiological treatment of biodegradable plastics waste under aerobic or anaerobic conditions

Note 1 to entry: The term “biological recycling” is used synonymously.

[SOURCE: ISO 15270:2008, 3.23]

### 3.2

#### **environmental statement**

collection of sector and application specific environmental performance data communicated between stakeholders

### 3.3

#### **ecolabel**

label which can be used to identify environmentally preferable choices within specific product categories

### 3.4

#### **environmental aspect**

element of a product or its production process that, during its life-cycle, can interact with the environment

Note 1 to entry: ISO Guide 64 has a similar definition that does include production processes as these aspects are out of its scope.

[SOURCE: ISO Guide 64:2008, 2.9, modified — "or its production process" and Note 1 to entry have been added.]

### 3.5

#### **environmental impact**

any change to the environment, wholly or partially resulting from a product *environmental aspect* (3.4)

[SOURCE: ISO Guide 64:2008, modified — The original term is "product environmental impact"; this document uses "environmental impact" synonymously.]

### 3.6

#### **environmentally hazardous substances**

materials that can pose a risk to ecosystems, humans, flora, fauna and other forms of life

### 3.7

#### **allocation**

assigned portion of the input or output of a component, process, production machine or system under study

Note 1 to entry: Input or output values are allocated across one or more similar entities

### 3.8

#### **life cycle**

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

Note 1 to entry: "Final disposal" includes recycling which is the preferred method of disposal. Processes such as refurbishment and reuse are encouraged in order to extend life cycle of a product and reduce its environmental impact.

[SOURCE: ISO 14025:2006, 3.20, modified — A note to entry has been added.]

### 3.9

#### **waste**

substances or objects which the holder intends or is required to dispose of

Note 1 to entry: This definition is taken from the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (22 March 1989), but is not confined in this International Standard to hazardous waste.

[SOURCE: ISO 14040:2006, 3.35]

**3.10****hazardous waste**

waste (3.9) containing substances with potentially harmful polluting properties

Note 1 to entry: Harmful polluting properties mean that a substance is flammable, combustible, ignitable, corrosive, toxic, reactive or injurious to human beings, wildlife, flora or the environment.

[SOURCE: ISO 37100:2016, 3.1.10, modified — The harmfulness is generalized so that it is not limited to human and property. Note 1 is added to explain it concretely.]

**3.11****circular economy**

economy that is restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles

[SOURCE: ISO 20400:2017, 3.1]

**3.12****volatile organic compound****VOC**

organic compound which is liquid at room temperature (20 °C) and which has a boiling point below 250 °C at standard atmospheric pressure

Note 1 to entry: VOCs with a boiling point lower than 180 °C are considered low-boiling.

**3.13****reuse**

use of a pre-existing artefact

[SOURCE: ISO/IEC 19501:2005, 0000\_58]

**3.14****synthetic micro fibres**

environmentally damaging short filaments of material made from synthetic or bio-derived polymer

Note 1 to entry: These fibres, sometimes known as micro plastic fibres, are typically less than 1 mm in length or become (much) smaller after degradation.

**3.15****GHS hazard statement**

standard references for chemical substances and mixture classifications

Note 1 to entry: GHS is abbreviation of Globally Harmonised System of classification and labelling of chemicals.

**3.16****calorific gain**

positive difference between the energy released on combustion of a material and Ha

[SOURCE: ISO 18605:2013, 3.3]

Note 1 to entry: Ha means required energy, which is defined as "energy necessary to adiabatically heat the post combustion substances of a material and excess air from ambient temperature to a specified final temperature" in ISO 18605:2013, 3.2.

**3.17****carbon footprint**

net amount of greenhouse gas emissions removals, expressed as CO<sub>2</sub> equivalents

[SOURCE: ISO 16759:2013, 3.1.1]

### 3.18

#### **print production supply chain**

linked and interdependent processes and components used to produce a printed product

Note 1 to entry: This does not include print finishing, converting or other post print processing.

## **4 General principles**

Declaration of environmental aspects and impacts through the use of eco labels clearly confirms that a product complies with a reference ecolabelling scheme's requirements. Tied to a robust scheme, such labels are convenient communication tools and are widely used in various markets around the world to determine the environmental performance of products and services. However, these labels cannot communicate all the factors that impact the environment. The graphic industry requires tools to provide accurate quantified data on the factors that impact the environment and communicate the detailed information, which assist ecolabelling models. This document is intended to prepare those tools which will encourage environmentally responsible print media production.

NOTE 1 A product's potentially negative environmental aspects and impacts can be outweighed by other positive benefits, such as reduced waste or emissions in production and over a product's lifespan. Many eco certification schemes often use a points-based inventory of checks to determine overall environmental aspects and impacts that do not necessarily reflect such nuances. In such schemes, the overall number of points can fulfil the certification scheme's requirements, outweighing negative impacts. For example, the use of an ink recipe containing substances without a negative impact on the environment can result in less waste, less energy consumption and less carbon emissions to produce the package, and yet it is possible that this information will not be fully reflected in an exclusively points based evaluation.

Environmental statements promoting this communication prepared in accordance with this document shall relate to all aspects of print production and be based on comprehensive and reliable data. The environmental statements prepared according to this document shall be available to all stakeholders in the supply chains of printed products. However, the supply chains of security printing are excluded, because the protection of information about materials and processes can outweigh the worth of environmental communication.

NOTE 2 Country or regional laws, regulations and international trade agreements can apply where it can be necessary to provide additional related statements.

Communication of environmental information on paper, board or other substrates may be restricted to requirements and guidelines provided by standards organizations or industry bodies. Where such a restriction has been applied, references to the guidelines and standards used shall be provided.

Environmental communication shall be clear. Where data provided is accumulated over a production period, the communication should clearly indicate that these are "typical values".

## **5 Criteria and parameters**

### **5.1 Data collection of materials and consumables**

All environmental information on materials used in the process of producing print products, including consumables, shall be collected and evaluated to determine the quantifiable environmental aspects and their potential impacts. When potential environmental impacts are identified in products, they shall be described according to [Clause 6](#).

### **5.2 Supplier requirements**

Suppliers of prints and suppliers of materials to be used in the print production process shall ensure that environmentally hazardous substances used are stated. All known environmental impacts should be communicated including any known risks that can arise due to improper handling or management of the material.