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Packaging — Label material — Required information for ordering and specifying self-adhesive labels

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National foreword

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Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
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Foreword

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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).

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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 122, *Packaging*.

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Introduction

Using and ordering label material of different kinds is not an easy task as what to use and how to use it depends on so many things, e.g. type of marking, surface, environment, treatment, information, printing technologies, etc.

Each label application is therefore unique and requires its own combination of ink, top coating, facestock and adhesive to serve its purpose. The label is to be seen as a vital and important part (component) of the product and there could be multiple labels on one product to serve different needs.

As there does not exists any standards in how to specify label materials, a guide was developed in order to provide useful information for those that are in need of a label material and those that are to supply the relevant label material.

This document can be used by both suppliers and users.

It provides guidance on what a supplier and user need to discuss and agree upon when specifying requirements of a label for a given application possibly to use as a request for a quote.

It also provides a harmonized template for specifying the parameters and characteristics of the label to enable information to be evaluated on common ground, possibly to use as a product specification.

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Packaging — Label material — Required information for ordering and specifying self-adhesive labels

1 Scope

This document provides guidelines for users and suppliers providing the required information for requesting and specifying self-adhesive labels. This document provides what to consider when defining and specifying label materials to be used for a given application.

It will ensure that the relevant information is provided so that the right material for the intended application can be requested or recommended, as well as ensure that label parameters and characteristics are specified in a similar format to permit label materials to be requested, specified and compared in a consistent manner.

This document applies to labels with adhesive (also named as self-adhesive or pressure-sensitive).

How to work and specify with other types of labels and marking are not addressed in this document, but may be the topic of subsequent documents. Also excluded is the information related to regulatory compliance.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21067-1 and ISO/IEC 19762-1:2016 and the following apply.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
adhesive
substance capable of holding materials together by surface attachment

[SOURCE: ISO 19952:2005, 3]

3.2
adhesive strength
sum total of the forces of attachment between a dry film and a substrate

3.3
facestock
paper that is used for making self-adhesive labels

Note 1 to entry: It is called “facestock” because it is the top or “face” of the laminate from which these labels are produced.

Note 2 to entry: Specialized companies laminate the facestock paper to a release liner after the latter has been coated first with an ultra-thin layer of silicon and then with an adhesive.

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Note 3 to entry: When the ready label is peeled off from the backing paper (=release liner), the adhesive transfers to the label because it is easily separated from the release liner because of the "non-stick" silicon.

3.4
final adhesion
force required to peel a strip of adhesive tape from a specified substrate at a specified angle and speed

Note 1 to entry: The force after at least 24 h.

3.5
imprint
local indentation caused by a foreign matter being pressed into a surface

[SOURCE: ISO 2074:2007, 6.7]

3.6
infringement
encroachment or trespass on a right

Note 1 to entry: Includes unauthorized use, use that exceeds the limitations stipulated in a licence, use that exceeds the parameters established for an exception, etc.

3.7
ink
material, which may or may not include colorant, designed for liquid state deposition on a substrate

[SOURCE: ISO/IEC 29142-1:2013, 3.28]

3.8
ink-jet
text and images formed on a substrate by electronically controlled formation and propulsion of liquid ink droplets

3.9
label
sign carrier made from flexible material

Note 1 to entry: The purpose of a label is to convey the necessary information (text or graphics) to the user.

Note 2 to entry: Information on other identification methods in relation to labels, such as tag, ticket, tape, mark and marking, are given in Annex D.

[SOURCE: ISO 9244:2008, 3.11, modified, Note 1 to entry and Note 2 to entry added]

3.10
mark
inscription, name, stamp, *label* (3.9), or seal placed on an article to signify ownership, quality, manufacture, or origin

3.11
marking
act of making *marks* (3.10), *signs* (3.20), texts, etc., visible on a surface of something

EXAMPLE Using a ribbon, label, tag, tape or other printing technology.

3.12
maximum application temperature
highest temperature at which the *label* (3.9) may be applied to the surface of the product, in order for the label material, in particular the *adhesive* (3.1), to perform to its given specification and correctly adhere to the product

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3.13
minimum application temperature
lowest temperature at which the *label* (3.9) may be applied to the surface of the product, in order for the label material, in particular the *adhesive* (3.1), to perform to its given specification and correctly adhere to the product

3.14
multilayer product
multiple layers attached to each other

3.15
peel adhesion
force required to peel a strip of adhesive tape from a specified substrate at a specified angle and speed

Note 1 to entry: The force after minutes or hours.

[SOURCE: ISO 29862:2007, 3.1, modified, Note 1 to entry added]

3.16
pressure-sensitive adhesive
adhesive (3.1) applied to create a bond between two surfaces by a simple application of pressure

[SOURCE: ISO 17398:2004, 3.4]

3.17
print direction
orientation of the printed information (text and graphics) on the *label* (3.9)

Note 1 to entry: Printing "with the web" is image production in the same direction as web movement.

Note 2 to entry: Printing "across the web" is image production at a 90° angle to the direction of web movement.

3.18
printer
output unit that produces a hard copy record of data mainly in the form of a sequence of discrete graphic characters belonging to one or more predetermined character sets

Note 1 to entry: Graphic characters can also represent graphic elements.

[SOURCE: ISO/IEC 2382:2015, 2125683, modified, Note 1 to entry added]

3.19
remaliner
sprocket hole punching

3.20
sign
message conveyed utilizing pictorial or textual media or both

[SOURCE: ISO 6707-1:2014, 5.5.67, modified, Note 1 to entry removed]

3.21
storage temperature
recommended temperature (range) at which the label material and/or finished labels should be held before usage, in order to retain their specified properties

3.22
service temperature
temperature range at which the label material can be used without compromising its properties for its intended usage when applied

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3.23
tack adhesion
force required to peel a strip of adhesive tape from a specified substrate at a specified angle and speed

Note 1 to entry: The force after contact or seconds.

3.24
tag
identification *label* (3.9) attached to a container or container-related equipment which, among other things, gives the unique owner's code and serial number and which can be remotely read by electronic sensing devices

[SOURCE: ISO 830:1999, 8.3.4, modified, *inter alia* replaced by *among other things*]

3.25
tape
long narrow strip of a flexible material with *adhesive* (3.1) used for sealing, binding, tying, etc.

3.26
thermal printing
inkless thermochemical process using a print head consisting of heated elements, controlled by digital data to reproduce image areas onto heat-sensitive substrates

[SOURCE: ISO 12637-1:2006, 71]

3.27
thermal-transfer printing
system employing donor sheets or ribbons coated with wax based inks or coloured dyes that are transferred by heat and pressure produced by thermal print heads to reproduce images onto a coated substrate using thermal wax transfer and thermal dye transfer printing processes/methods

Note 1 to entry: Other ribbon types are available such as resin and wax/resin, etc.

[SOURCE: ISO 12637-1:2006, 72, modified, Note 1 to entry added]

3.28
ticket
piece of paper, cardboard, etc., showing that the holder is entitled to certain rights, such as travel on a train or bus, entry to a place of public entertainment, etc.

3.29
web
continuous length of paper, foil, film, or other flexible material that comes from a roll as it moves through a machine in the process of being formed, converted, or printed

4 Abbreviated terms

CMYK	cyan, magenta, yellow, key colour (black)
RFID	radio frequency identification
TT	thermal transfer
TTI	time temperature indicator

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5 Requirements

5.1 General

It is permitted to make copies of the sheets in Annex A and Annex C.

Electronic versions of the checklists presented in Annex A and Annex C are available at http://standards.iso.org/iso/18614.

5.2 Specification checklists for self-adhesive labels (end-user created)

The checklists in Annex A shall be used by the end-user to specify the requirements of the label(s) to be purchased. The output of Annex A will allow the responses from various suppliers to be compared on an equal basis.

Annex C shall be used by the supplier when replying to a received request (the output from Annex A).

5.3 Label material specification form (supplier response)

The checklists and specifications in Annex C shall be used by the supplier to provide response to the end-user request (output from Annex A). The output from Annex C will enable responses from various suppliers to be compared on an equal basis. By this means, misunderstandings and misinterpretations can be eliminated.

6 Considerations

6.1 Order request of label material

The questions in Annex A that need to be asked by the end-user (and answered by the supplier via Annex C) in order to get the label for the intended application.

Annex A is grouped as follows:

— application (how material will be used; see A.2.1);

— label characteristics (shape and size of label; see A.2.2);

— adhesive (characteristics for desired application; see A.2.3);

— print (when and with what to be printed; see A.2.4);

— facestock (characteristics of material and composition; see A.2.5);

— resistance (what environmental aspects are to be considered; see A.2.6);

— special features (security, special function, etc., requirements; see A.2.7);

— finishing (how is the label to be configured for use; see A.2.8);

— quotation (how to order and deliver; see A.2.9);

— other (see A.2.10).

Annex A should not be considered all inclusive.

Annex B can be used in support of completing Annex A.

6.2 Specifying of label material

Information to help in filling out Annex C is provided in Annex G and Annex H.

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If there is any variance to the original end-user request, a new end-user request shall be issued allowing suppliers to respond to the new request.

The material is to be tested and approved according to the methods given in Annex I.

Observe that given values in Annex C may change after de-lamination or re-lamination.

Annex C is grouped as follows:

— general purpose (see C.2);

— measurement tolerances (see C.3);

— characteristics (see C.4):

  — physical size and shape (see C.4.1);

  — properties (see C.4.2);

  — attributes (see C.4.3);

— printed text or graphics (symbols) (see C.5);

— finishing (see C.6):

  — placement and orientation (see C.6.1);

  — identification and quotation (see C.6.2);

— regulations/certificates (see C.7).

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Annex A
(normative)

Checklists for specification of characteristics for self-adhesive labels

A.1 General

An electronic version of the form presented in Annex A is available at http://standards.iso.org/iso/18614.

The form in its original format without any modifications can be used by the user for the purposes specified in this document.

A.2 Questions to be answered for specifying and ordering self-adhesive labels

The following set of questions is not in any particular order. If the question cannot be answered, state "not applicable" (N/A) or use "—" to mark that each question has been considered.

A.2.1 Application

Additional information is provided in Annex F and Annex H.

Table A.1 — Application

Question	Answer	Remark
What application is the label intended for, e.g. product decoration, logistic, other?		
Where will the label be applied (surfaces like plastic[a], metal[a], glass, corrugated, wood, aluminium[a], etc.)?		
What are the surface conditions (smooth or textured, flat or curved, clean, oily, etc.)?		
Applying conditions (temperature, moisture, etc.)?		
Dispensing conditions (manually or automatically, labelling speed, etc.)?		
Do you have a sample? If yes, do you want us to match your sample?		
Do you have a drawing (blueprint)? If yes, please provide.		
Is your application under some kind of regulation? If yes, please specify.		

[a] Not all surfaces can be mentioned so the actual surface to which the label is to be affixed shall be specified in more detail.

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