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INTERNATIONAL STANDARD
NORME INTERNATIONALE

HORIZONTAL STANDARD
NORME HORIZONTALE

Preparation of information for use (instructions for use) of products – Part 1: Principles and general requirements

Élaboration des informations d'utilisation (instructions d'utilisation) des produits – Partie 1: Principes et exigences générales

IEC/IEEE 82079-1:2019-05(en-fr)

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Switzerland
Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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Case postale 56
CH-1211 Geneva 20
Switzerland
Tel.: +41 22 749 01 11
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Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue
New York, NY 10016-5997
United States of America
stds.info@ieee.org
www.ieee.org

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Élaboration des informations d'utilisation (instructions d'utilisation) des produits – Partie 1: Principes et exigences générales

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PREPARATION OF INFORMATION FOR USE (INSTRUCTIONS FOR USE) OF PRODUCTS –

Part 1: Principles and general requirements

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It is published as an IEC/ISO/IEEE triple logo standard.

It has the status of a horizontal standard in accordance with IEC Guide 108 [59].

This second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

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

a) The structure of this document has been rearranged in order to facilitate application of the standard and to make it easier to find information. Where possible, the language has been simplified.
b) Information for use is introduced as a generic term. Instructions for use is a synonym for information for use. Step-by-step instructions is used as a subset of information for use.
c) Clause 5 (principles) is revised and focuses on the purpose of information for use, the quality of information and the process for management of information.
d) The process for preparation of information for use is integrated in the normative part and addressed comprehensively.
e) Empirical methods for the evaluation of information for use are described in the normative part.
f) The professional competencies needed for the preparation of information for use are addressed more comprehensively.
g) Some aspects have been added to general requirements for information for use for complex systems of systems.
h) Consideration is given to instructions for self-assembly products.
i) An informative annex providing guidance on the fulfilment of specified requirements is introduced.

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

FDIS	Report on voting
3/1390/FDIS	3/1401/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.

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

A list of all parts of the 82079 International Standard, published under the general title *Preparation of information for use (instructions for use) of products*, can be found on the IEC website.

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INTRODUCTION

Information for use is a part of any type of product it supports. A product can be a system, a service, goods, software, information, or a combination thereof. People depend on the information provided to use products safely, effectively, and efficiently, unless they receive training from a human instructor or unless the functions are entirely intuitive. Confusing product information and inadequate instructions are major sources of frustration for consumers and skilled workers. Defective information can pose a risk of harm or loss, leading to prosecution or liability claims against the supplier or brand owner.

Information for use consists of three information types: conceptual information that the target audience needs to understand, instructional information to be followed or considered, and reference information to be consulted when needed. The information for use can include various information products that are selected, presented, and delivered on different media to meet the needs of different target audiences (Figure 1).

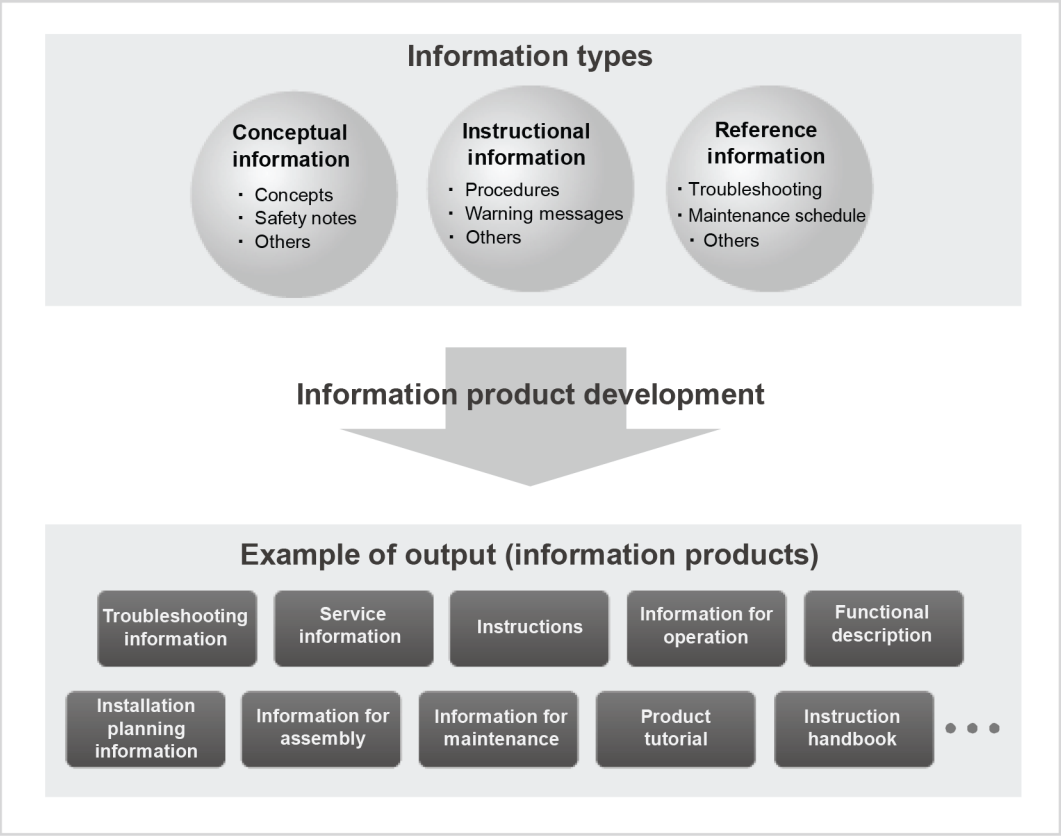

Figure 1 – Concept of information for use

Some product-specific information requirements (e.g. the wording of warnings or positioning of labels) are specified in standards for individual types or classes of products, but these do not provide a complete set of requirements for information for use. This document gives principles and general requirements for conveying information to users that are as applicable to complex and safety-critical systems (e.g. industrial plants), as they are to simple consumer products (e.g. a can of paint), to software, and to specialized testing equipment. Information for use is needed for anyone (skilled and unskilled) who encounters a product for the first time: whether to assemble from a kit, install, operate, maintain, or dispose of it.

The principles for preparing information for use of products are horizontally applicable across product sectors because all target audiences are human and subject to human error. The techniques found to be most effective to help such audiences to absorb new information are generally similar, as are their capabilities for misunderstanding language or images. What

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works best in information gathering and delivery (e.g. in content, wording, graphics, testing, and management of the whole process) has emerged from experience and practice in the fields of human factors and technical communication. This document is applicable on its own or can be referenced in product standards that include requirements to provide the target audience with information for use, for example, step-by-step instructions or other information products.

This document is addressed to those who prepare information for use; managers of organizations that produce or purchase products, systems, or services; human factors consultants; and product enforcement agencies.

It covers the following aspects:

- information content: conceptual information the target audiences need to understand, procedures they have to undertake, and the reference information they need to consult at some point;
- options for information to be provided as a single deliverable (e.g. a product manual) or across several types of information product, such as labelling on the product itself or packaging, accompanying electronic files, sheets, a website, booklets, printable files, videos, or searchable databases;
- effective use of language, text, illustrations, symbols, audio or video to communicate elements of information;
- processes and competencies involved in establishing content and preparing output; and
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PREPARATION OF INFORMATION FOR USE (INSTRUCTIONS FOR USE) OF PRODUCTS –

Part 1: Principles and general requirements

1 Scope

This part of 82079 International Standard provides principles and general requirements for information for the use of products.

Information for use is:

- necessary for the safe use of a product;
- helpful for the efficient and effective use of a product; and
- often necessary to fulfil market, legal, and regulatory obligations.

Products include, for example:

- industrial products (e.g. machinery, components, devices, and equipment);
- consumer products (e.g. household appliances, audio-visual devices, communication devices, and do-it-yourself products);
- medical devices, equipment and systems;
- complex systems of systems (e.g. industrial plants, refineries, production sites, and data centres);
- means of transport (e.g. cars, trucks, ships, and airplanes);
- application software (e.g. office software and web applications);
- software for operation and automatic control of systems; and
- technical services.

Information for use of products applies to phases of the product life cycle such as transport, assembly, installation, commissioning, operation, monitoring, troubleshooting, maintenance, repair, decommissioning, and disposal, and the appropriate tasks performed by skilled and unskilled persons.

This document provides the common and fundamental aspects serving as the binding and generic framework for prospective additional parts of this document.

This document applies to information for use whether provided as electronic or printed information products, for example:

- service information for machinery, provided as PDF file for web download for trained service technicians;
- information for operation of software, provided electronically with the software as an online help;
- troubleshooting information for an operator, on a machine's on-screen display;
- functional description of a medical device on a website;
- information for assembly, printed and provided in the packaging of a piece of furniture for consumers;
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- installation planning information for a safety sensor, downloadable from a website for mechanical engineers;
- product tutorial as a web-based training aid;
- materials for product on-site training; and
- label for transportation personnel, printed on the packaging of a heavy containment vessel.

This document is intended for use by all parties responsible for or involved in the conceptualization, creation, maintenance, translation, localization, integration of content, production, provision and evaluation, acquisition and supply of information for use.

The parties concerned with information for use include the following:

- acquirers and suppliers of products;
- managers with process or product responsibilities;
- content owners and content creators such as technical writers, information developers, and illustrators;
- technical translators, localization and terminology experts; and
- authorities, agencies and authorized experts.

The aim of this document is to provide these parties with the common and fundamental basis for developing information for use of supported products of the required quality.

This document is intended to be applied and referenced in product-specific standards, including those that specify the content of information for use of those products, for example, IEC 60335 for all parts for household electrical products, ISO 20607* for machinery, and ISO/IEC 26514 for systems and software. It is intended as a basis to elaborate product-specific requirements for target audiences or product information.

* Under preparation. Stage at the time of publication: ISO/DIS 20607:2018.

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

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.

IEC 60417, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment)

IEC 60617, *Graphical symbols for diagrams* (available at http://std.iec.ch/iec60617)

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

ISO 3864 (all parts), *Graphical symbols – Safety colours and safety signs*

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ISO 5807, *Information processing – Documentation symbols and conventions for data, program and system flowcharts, program network charts and system resources charts*

ISO 7000, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment)

ISO 7010:2011, *Graphical symbols – Safety colours and safety signs – Registered safety signs*

ISO 9241-300, *Ergonomics of human-system interaction – Part 300: Introduction to electronic visual display requirements*

ISO 14617 (all parts), *Graphical symbols for diagrams*

3 Terms and definitions

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

IEC, ISO, and IEEE 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
- IEEE Standards Dictionary Online: available at http://ieeexplore.ieee.org/xpls/dictionary.jsp

3.1
accessibility
extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of user needs, characteristics, and capabilities to achieve identified goals in identified contexts of use

Note 1 to entry: Context of use includes direct use or use supported by assistive technologies.

[SOURCE: ISO 9241-940:2017, 3.1]

3.2
commissioning
procedures prior, or related, to the handing over of a product ready to be placed into service

Note 1 to entry: Commissioning may include final acceptance testing, the handing over of relevant documentation for the supported product or instructing personnel.

3.3
competent person
person who has acquired through training, qualifications or experience, or a combination of these, the knowledge and skills enabling that person to perform a specified task

Note 1 to entry: This document uses the term competent person in the context of the creation of the information for use and information management. See also definition 3.36, skilled person.

[SOURCE: ISO 17842-1:2015, 3.6, modified – Note 1 to entry added.]

3.4
component
product used as a constituent in an assembled product, system or plant

[SOURCE: IEC 81346-1:2009, 3.7]

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3.5
consequence
outcome of an occurrence of a particular set of circumstances

Note 1 to entry: There can be more than one consequence from one occurrence.

Note 2 to entry: Consequences can be expressed qualitatively or quantitatively.

3.6
consumable
any part or material that is necessary to be replaced or refilled for continuous use or maintenance of the product

3.7
consumer
individual member of the general public, purchasing or using products for private purposes

Note 1 to entry: For the purpose of the requirements of this document, a "consumer" is assumed to be a non-skilled person.

3.8
consumer product
product available to, intended for or likely to be used by consumers

3.9
customer
individual or organization that purchases or receives a product

Note 1 to entry: The term "customer" includes but has a broader meaning than "consumer" (3.7).

3.10
document
fixed and structured amount of information intended for human perception that can be managed and interchanged as a unit between users and systems

[SOURCE: IEC 61082-1:2014, 3.1.1, modified – The notes have been deleted.]

3.11
documentation
collection of documents related to a given subject

[SOURCE: IEC 61082-1:2014, 3.1.3, modified – The notes have been deleted.]

3.12
equipment
associated assemblies intended to achieve a defined final objective

[SOURCE: IEC 80416-1:2008, 3.3]

3.13
graphical symbol
visually perceptible figure with a particular meaning used to transmit information independently of language

[SOURCE: IEC 80416-1:2008, 3.4]

3.14
harm
injury or damage to the health of people, or damage to property or the environment

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[SOURCE: ISO/IEC Guide 51:2014, 3.1]

3.15
hazard
potential source of harm

[SOURCE: ISO/IEC Guide 51:2014, 3.2]

3.16
illustration
visually perceptible figure, artificially created to transmit specific information, excluding safety signs and graphical symbols

EXAMPLE Graphical image, picture, figure, photograph, line drawing, table.

3.17
information for use
instructions for use
information provided by the supplier that provides the target audience with concepts, procedures and reference material for the safe, effective, and efficient use of a supported product during its life cycle

EXAMPLE Step-by-step instructions, troubleshooting information, service information, operation and maintenance instructions, and assembly instructions.

Note 1 to entry: "Instructions for use, procedures for the safe, effective, and efficient use of a supported product", was the term formerly used to include all the content defined as part of information for use.

Note 2 to entry: Excludes supplementary information, which is outside the scope of information for use.

3.18
information model
representation of concepts, relationships and rules for a body of information

3.19
information product
information item
separately identifiable body of information that is produced, stored, and delivered for human use

Note 1 to entry: A document produced to meet information requirements can be an information product, or part of an information product, or a combination of several information products.

Note 2 to entry: An information product can be produced in several versions during a project or system life cycle.

[SOURCE: ISO/IEC/IEEE 15289:2017, 3.1.13, modified – "information product" has been added as a first preferred term and in the notes "information item" has been replaced with "information product".]

3.20
information quality
degree to which an information product satisfies the stated and implied needs when used under specified conditions

3.21
intended use
exhaustive range of functions or foreseen applications defined and designed by the supplier of the product

Note 1 to entry: Functions or applications not listed by the supplier are excluded from the intended use of the product.

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Note 2 to entry: Additional or modified functions or applications resulting from modifications not sanctioned by the supplier of the product are excluded from the intended use.

3.22
label
item, attached to a product (if practicable) or its packaging, which displays information related to one or more characteristic(s) of the product

[SOURCE: ISO/IEC Guide 14:2018, 3.10, modified – changed "consumer product" to "product".]

3.23
maintenance
actions intended to retain a product in, or restore it to, a useful and safe condition, in which it can perform the intended use

3.24
marking
symbols, pictograms, warnings, logos or inscriptions on the product, label, or packaging to identify its type, which can also include short textual messages

[SOURCE: ISO/IEC Guide 14:2018, 3.12, modified – changed "consumer product" to "product".]

3.25
minimalism
principle that information for use includes critical information and the least amount of other information needed to be complete

3.26
personal protective equipment
any device or appliance designed to be worn or held by an individual for protection against one or more health and safety hazards

[SOURCE: IEC 60050-651:2014, 651-23-01, modified – The abbreviated term "PPE", the wording "whilst performing live working" and Note 1 to entry have been deleted.]

3.27
plant
assembly of different systems on a specific site

[SOURCE: IEC 61355-1:2008, 3.10]

3.28
product
intended or accomplished result of labour, or of a natural or artificial process

Note 1 to entry: Information for use is seen as a part of a product.

Note 2 to entry: A product can be a system, a service, goods, information, or a combination thereof.

3.29
product safety label
label on a product that informs of one or more potential hazards and describes the safety precautions and/or actions required to avoid the hazard(s)

[SOURCE: ISO 3864-2:2016, 3.9, modified –"the observer" has been deleted and Note 1 to entry has been deleted.]

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3.30
reasonably foreseeable misuse
use of a product or system in a way not intended by the supplier, but which can result from readily predictable human behaviour

Note 1 to entry: Readily predictable human behaviour includes the behaviour of all types of users. For more information, see ISO 10377.

[SOURCE: ISO/IEC Guide 51:2014, 3.7, modified – The wording "e.g. the elderly, children and persons with disabilities" has been deleted from Note 1 to entry. Note 2 to entry has been deleted.]

3.31
repair
corrective maintenance of defective or damaged parts or functions of a product

3.32
risk
combination of the probability of occurrence of harm and the severity of that harm

Note 1 to entry: The probability of occurrence includes the exposure to a hazardous situation, the occurrence of a hazardous event and the possibility to avoid or limit the harm.

[SOURCE: ISO/IEC Guide 51:2014, 3.9]

3.33
safety note
safety-related information that is collected or grouped in a document or section of a document in a meaningful organizational system to explain safety measures, raise safety awareness, and provide a basis for safety-related training of persons

3.34
safety sign
sign giving a general safety message, obtained by a combination of colour and geometric shape and which, by the addition of a graphical symbol, gives a particular safety message

[SOURCE: ISO 7010:2011, 3.3]

3.35
self-assembly product
flatpack product
ready-to-assemble product
product that is intended to be assembled or erected from separate components without the help of a supervisor or trainer and relying only on step-by-step instructions

Note 1 to entry: This includes both products supplied in the form of a kit of component parts and products that incorporate structural elements requiring folding, locking or tensioning (e.g. child pushchairs or camping equipment).

3.36
skilled person
individual with relevant technical education, training, or experience to enable perceiving risks and avoiding hazards occurring during use of a product

3.37
step
one element in a procedure that tells the target audience to perform an action

Note 1 to entry: A step is presented as a numbered list item.

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3.38
step-by-step instructions
procedure consisting of steps to be followed for the safe, effective, and efficient use of a supported product

3.39
supplier
individual or organization that provides products

Note 1 to entry: "Supplier" includes producer, manufacturer, integrator, vendor, distributor, retailer, agency, provider of information or their authorized representatives.

3.40
supported product
product to which the information for use relates

3.41
system
set of interrelated elements considered in a defined context as a whole and separated from their environment

[SOURCE: IEC 60050-151:2001, 151-11-27, modified – The notes have been deleted.]

3.42
target audience
group of persons for whom information for use is intended by the supplier

3.43
topic
coherent part of an information product with a heading that deals with a single subject

Note 1 to entry: In a printed document a topic is a section or subsection. In online documentation, a topic usually is the amount of information invoked by navigation (e.g. following a link) and completely accessible by scrolling.

3.44
usability
extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use

[SOURCE: ISO 9241-210:2010, 2.13 modified – "system or service" have been deleted.]

3.45
use
activity that the user may perform with or on the product during its whole life cycle

Note 1 to entry: "Use" covers the intended use and the reasonably foreseeable misuse in normal and reasonably foreseeable conditions of use.

3.46
use case
description of behavioural requirements of a system and its interaction with a user

[SOURCE: ISO/IEC/IEEE 26515:2018, 4.15]

3.47
user
person who interacts with the product

Note 1 to entry: "User" can include persons who install, operate, service, maintain, or dispose of the product.

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3.48
warning message
safety-related information that warns about hazards and instructs on how to avoid them

Note 1 to entry: Warning messages are normally given within step-by-step instructions related to hazardous tasks.

4 Fulfilment of requirements for information for use

4.1 General

The fulfilment of specified requirements in this document does not release suppliers from their obligations to assess the legal framework for product compliance within each separate distribution area. Inadequate product-related information can result in product safety and liability risks.

The requirements of this document are of two kinds:

a) requirements for information for use supporting a particular product in 5.2, 5.3, Clause 7, Clause 8 and Clause 9; and

b) requirements for information management processes in 5.4, Clause 6, and Clause 10.

A claim of fulfilment of requirements for information for use of a particular consumer product shall be made by a supplier only if the information products supplied (including information products supplied electronically) to support the product fulfil the requirements in a).

Claims of fulfilment of requirements other than for information for use supporting a consumer product shall only be made by a supplier if:

1) the processes established by an organization to prepare information for use fulfil b); or

2) the information for use supplied to support a particular product fulfil a).

A supplier may claim fulfilment of requirements for both the information for use supporting a particular product (a)) and for the information management process (b)).

Annex A provides guidance on evaluation.

4.2 Evaluation of information for use of consumer products

Evaluation of information for use of a consumer product should include an empirical effectiveness check. The empirical effectiveness check should involve not only skilled experts but also persons unfamiliar with the use of the supported product and its information for use. Where practicable, the supported product and preferably packaging should be available for the evaluation. This should be practicable for consumer products.

Annex A describes several methods for empirical effectiveness checks of information products.

4.3 Documentary evidence of evaluation

Where fulfilment of requirements in this document is claimed, the supplier shall retain records of the following:

a) the information for use and any packaging that were submitted for the evaluation;

b) the language version of the information for use which was assessed and approved as fulfiling the requirements in this document;

c) whether the product sample was supplied fully assembled or was assembled as part of the assessment of the information for use; and

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d) the name of the organization or person(s) that carried out the evaluation.

5 Principles

5.1 General

Clause 5 establishes principles for the selection of content, structure, and format for information for use, and the processes for the design and sustainment of information for use. The principles are concerned with:

a) the purpose of the information for use;

b) the quality of information in the information for use; and

c) the use of processes for the management of information.

5.2 Purpose of information for use

5.2.1 General

Information for use shall provide the necessary information for the target audiences to make safe, efficient, and effective use of a supported product.

To meet this purpose, information for use provides the following information types:

a) conceptual information: concepts, explanations and descriptions to enable the target audiences to perform tasks by understanding their purpose and the principles of operation of the supported product;

b) instructional information: procedures and task-oriented step-by-step instructions; and

c) reference information: detailed information which needs to be retrieved occasionally, such as troubleshooting information, commands or codes.

5.2.2 Information for use as part of the product

Information for use is an integral part of the supported product and shall be given the same attention and importance as every other part of the product.

If the information for use is defective (e.g. does not meet the requirements), the product as a whole is defective. Information for use shall be clearly and easily identifiable with the supported product.

5.2.3 Target audiences orientation

Information for use shall be usable and relevant for the target audiences with respect to their expected tasks and goals.

NOTE More information on target audience analysis can be found in ISO/IEC 26514.

5.2.4 Safe use of the supported product

Information for use shall promote the safe operation and maintenance of the supported product. Information for use contributes to reducing the risk of injury or illness to people or animals, and risks of damage, malfunction or inefficient operation of the product. However, information for use cannot compensate for design deficiencies or missing safety systems.

5.2.5 Product compliance through information for use

The framework for product compliance consists, in general, of the following areas of legal practice:

a) product safety;

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b) product liability; and

c) contracts.

Because the information for use is part of the supported product, the legal compliance of the information for use can be considered as part of the legal compliance of the product.

5.3 Information quality

5.3.1 General

Information for use shall meet the target audiences' needs for information quality: completeness, minimalism, correctness, conciseness, consistency, comprehensibility, and accessibility.

Information quality means that the information meets the requirements of all parties with an interest in the supported product with respect to the content; structure; means, format and media of information.

NOTE Poor information quality can cause legal defects.

5.3.2 Completeness

Information for use shall be complete. The completeness of information depends on the following being addressed:

a) the risks of using the product;

b) the tasks that the target audiences are intended or allowed to perform throughout the life cycle of the supported product;

c) the target audiences' need for information; and

d) legal and contractual requirements.

5.3.3 Minimalism

Minimalism shall be applied. Minimalism is an approach to information for use that includes critical information and the least amount of other information needed to be complete. Critical information includes the safe use of the product, the security of the information created with the product, or the privacy of the information created by or stored with the product.

NOTE Minimalism means that only relevant information is provided.

In contrast to minimalist information, excessive documentation of all possible product functions, for example, is wasteful. It can hinder users' comprehension of how to use a product for their common or critical tasks, and from discovering needed information quickly in their context of use. Minimalism balances the cost of developing and sustaining information for use with the needs of the target audiences to operate a product safely, effectively, and efficiently.

Critical information, such as safety-related information, shall be repeated where it is needed.

5.3.4 Correctness

Information for use shall be technically correct and contain the current information on the supported product to which the information for use relates. If the supported product is being modified, the need for changes in the information for use should be evaluated.

5.3.5 Conciseness

Information for use shall be concise with respect to format and media.

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Conciseness with respect to the content and presentation of the information means:

a) succinct wording;

b) text and illustrations without unnecessary details; and

c) videos as short as relevant.

5.3.6 Consistency

Information for use shall be consistent with respect to the content, format and media.

Consistency with respect to content means, for example, that the information is unambiguous and correct (e.g. consistent with the supported product). Consistency with respect to format and media means, for example, consistent terminology, units of measurement, structures and indications (i.e. headings, titles), symbols, warning messages, and use of colours.

To achieve consistency, systems for consistent formatting should be separated from systems for consistent content (presentation of topics). This is called the principle of separation of content and format.

NOTE Mark-up languages can help to achieve consistency.

Information for use should be consistent with other information for the supported product, such as that on or in product packaging, labelling, training materials, materials for customer support and user assistance, and promotional materials.

5.3.7 Comprehensibility

Information for use shall be comprehensible to the target audiences. This requires:

a) comprehensible text and terminology;

b) comprehensible illustrations, safety signs and graphical symbols; and

c) comprehensible methods of navigation and use of media.

NOTE Comprehensibility includes clarity and intelligibility. Comprehensibility depends on the context of use. The need for comprehensibility is especially important in emergency situations.

5.3.8 Accessibility

Information for use shall be accessible (e.g. technically available and legible) for the target audiences in the context of use and throughout the intended lifetime of the supported product.

5.4 Use of repeatable processes

Information for use shall be developed, produced, and sustained using defined, repeatable processes. The use of repeatable processes facilitates planning, implementing, checking, correcting, and improving the information for use.

These processes shall:

a) be planned so as to obtain sufficient competent human resources for information development and to make information accessible at the required time;

b) be quality managed and assured on the basis of clear and common quality objectives; and

c) use single-source information management to reduce inconsistencies and discrepancies.

Information content should be retained for reuse throughout the intended lifetime of the supported product, maintained to be current, and adaptable for use on similar products and future product versions.

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6 Information management process

6.1 General

The supplier shall implement information management processes for planning, designing, producing, and sustaining information for use. The information management process shall generate, obtain, confirm, transform, retain, retrieve, and disseminate information, as appropriate.

The information management process shall:

a) identify information to be managed;

b) define information representations;

c) obtain, develop or transform, store, validate, present, and dispose of information;

d) identify the status of information; and

e) make information available for use.

The development and sustainment of information for use are typically performed as a supporting information management process within the life cycle of the supported product.

Four process groups shall be addressed:

1) analysis and planning of information (6.2);

2) design and development, including review, editing, and testing (6.3);

3) production and distribution (6.4); and

4) sustainment, including maintenance and improvement (6.5).

6.2 Analysis and planning of information

6.2.1 General analysis

Analysis and planning of information shall begin with an organizational strategy and policy regarding the development and sustainment of information for use. Senior management should arrange the resources, schedules, and quality targets so as to enable the planning, preparation and delivery of information for use.

Instructional procedures shall be formulated based on a market analysis or an analysis of the characteristics, needs and intended tasks of the target audiences. The analyses shall be performed early in the life cycle of the supported product, and by collecting information about the product. This analysis should result in an understanding of the context of use (operational concept) and the nature of the target audiences. Decisions made during analysis should include the following:

a) the type of media to be used;

b) whether to segment information for various target audiences or language versions;

c) whether to include all information at one website, or in one document, or a series of documents; and

d) whether to include the information within or on the supported product or provide the information separately.

Factors affecting the information design for information for use shall include target audience analysis, media and languages, information sources, risk management, and legal considerations.

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6.2.2 Target audiences

Planning for information for use shall consider the skills and tasks required of the target audiences. In this context, there can be multiple target audiences, including users of the supported product, installers, technicians, administrators, operators, and those responsible for security, product disposal or recycling. The expected degree of knowledge and skills of the target audiences, and their expected frequency of use of the supported product should be defined.

Planning for information for use shall consider the characteristics of the target audiences. Each target audience should be defined by common characteristics, for example, similar work tasks.

The definition for each target audience should consider the following characteristics:

a) background, skills, experience, and training with respect to the relevant sectors, for example, mechanics, electrics, electronics, hydraulics, software, programming;

b) language familiar to the target audience;

c) tasks;

d) working environment, for example, climatic conditions, light, working in a team or alone;

e) available tools; and

f) available means for information access, for example, Internet access, audio services, phone or video remote services to get support, permission for information access, adequate device for displaying electronic information.

The description of target audiences should consider that target audiences are often heterogeneous, i.e. including a range of capabilities.

The description of the tasks of the particular target audiences should consider the following aspects, if applicable:

1) why the task is carried out;

2) how frequently the task is carried out and how likely it is that the users will remember how to do it;

3) how long the task is expected to take, for example, minutes, hours, or days;

4) whether the task is carried out by one person, or is carried out as a process by more persons with one or more different job roles;

5) what the specific environmental conditions of the task are, for example, stress and mental pressure, climatic conditions;

6) how fault-tolerant the task is and how important it is that the user carries out the task correctly;

7) what discretion the user has in how or when the task is carried out;

8) what the prerequisites for the task are; and

9) how common the task is.

NOTE For further information on target audience analysis and the method of audience mapping matrix, see ISO/IEC 26514.

Target audiences with particular needs for accessible information include older persons; children whose use of the supported product requires supervision; persons unable to read the printed information for use; and persons with physical, visual or auditory disabilities.

6.2.3 Media

Analysis and planning of information shall include the choice of media for the information for use, such as electronic or printed media, provided as part of the supported product, its

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packaging, or separately. The supplier should consider the choice of media in view of the needs of the target audience for information accessibility. The produced (for example, printed) information for use should be usable for the intended lifetime of the supported product; for example, printed information for use should be provided on durable paper. Electronic information for use can be provided in combinations of audio, visual (i.e. illustration, video, or animation), or written forms, on separate media, through the Internet, for use on various stationary or mobile viewing devices, or embedded in the supported product.

6.2.4 Languages

Planning of information shall include identification of local language requirements for the information for use. These shall be identified and versions of the information for use shall be translated and provided accordingly.

NOTE 1 For further information on the translation management process, see ISO 17100.

Consideration should be given to conveying important installation and operational precautions and safety-related information by means of language-independent safety signs, graphical symbols and self-explanatory illustrations.

NOTE 2 It is usual for information for use to be supplied in the official language(s) of the country of sale.

6.2.5 Information sources

Planning of information shall include the identification of information sources and the most effective ways to use them. The following should be taken into account:

a) function, structure and life cycle of the supported product, similar products and requirements for information for use, possible problems and troubleshooting information, spare parts and options, compliance and conformance information;

b) the market(s) in which the supported product will be supplied, including characteristics of the market(s) and channels for distribution of the supported product;

c) legal and normative requirements for the markets in which the supported products will be supplied; and

d) the time when stable and reliable information will be available.

Sources for information for use should include interviews and observations by persons having experience with the supported product. Where information for use integrates several already documented systems or services as information sources, the supplier should decide whether to adapt the existing documentation using its own formats or incorporate the existing documentation by reference without change, using cross-references or hyperlinks.

6.2.6 Information sustainment

The needs for maintaining and supporting information during the life cycle of the supported product shall be taken into account when planning the preparation of information for use. Information shall be managed so that relevant information on product changes and new releases is available for inclusion in the process. Planning for information for use shall include identification of the expected duration and level of post-delivery support for the supported product and, therefore for the information for use, along with plans to store, retrieve, change, protect, and dispose of the information for use.

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6.2.7 Risk management

Analysis and planning of information shall be based on considerations of hazards inherent in the installation, operation, and maintenance of the supported product. The analysis of hazards shall consider tasks or use cases. Hazards include not only immediate risks to operators and users of the supported product, but also foreseeable future impact on others in the environment. Hazards also include the possibility of unfavourable or unexpected risks for the customer, such as loss of business or personal data. The supplier shall identify, analyse, and evaluate hazards for their impact, likelihood of occurrence, and availability of methods to avoid or limit them. Residual risks (risk remaining after risk reduction) shall be included in the information for use as limitations or special exceptions and addressed in warning messages.

The planning process shall include the treatment of risks in the information for use. This should be coordinated with the engineering and design functions to help ensure the safe intended use of the supported product. With respect to safety, the developer of the information for use should be involved in risk assessments so as to make clear the limits of information for use in ensuring safety, and to help build safety into the design of the supported product through inherent safety features, auxiliary safety devices, safety warnings in user interface messages, safety notes, training, and packaging.

NOTE ISO 12100, ISO 31000, ISO 14971 and ISO/IEC Guide 51 provide additional requirements for risk management and safety-related information.

6.2.8 Contractual agreements and legal constraints

Requirements regarding information for use resulting from contractual agreements and legal constraints shall be available for the information development process.

6.2.9 Project management and control

Managing projects shall include planning, developing, maintaining project schedules, performing resource management, and measuring and reporting the status of the project and the information for use. Planning should include the following:

a) adoption of policies for content management and reusability;

b) review and testing;

c) preparation of translated or localized versions;

d) resource management;

e) the involvement of competent persons;

f) quality assurance, project risk management, and configuration management;

g) obtaining infrastructure resources, such as a content management system and publishing system, or the use of an information management system integrated with the project's software development tools;

h) management of the communication within the project team, with information providers and with stakeholders; and

i) for complex systems, a delivery plan for the different information products.

Control shall include the responsibility for authorizing and closing projects, obtaining and communicating accurate and timely information on project status, and redirecting project activities and tasks to take advantage of opportunities or to correct deficiencies.

NOTE Information about management for information development can be found in ISO/IEC/IEEE 26511.

6.2.10 Configuration management

Defective configuration management can result in wrong or missing information in the information for use for a specific product. Persons in charge of configuration management shall establish baseline versions and manage changes to information for use under their control. They shall control work information, such as reusable content ("single source") for

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information for use, product components, plans and design artefacts. They should manage traceability between versions of information for use and supported products, so that it is possible to find the current or applicable version of the information for use at any given time after release throughout the life cycle of the supported product. They shall include activities to review and approve changes and releases.

NOTE ISO/IEC/IEEE 26531 includes requirements for content management and a component content management system.

6.2.11 Human resource management

Preparation of information for use shall include planning for, obtaining, and allocating the required competent human resources. This shall include training in the use of software tools and methods and familiarization with organizational procedures where necessary.

6.2.12 Quality assurance

When preparing information for use, quality assurance techniques and activities shall be identified and performed throughout the information development process.

NOTE ISO 9000 describes quality management terms and concepts.

6.3 Design and development, including review, editing, and testing

6.3.1 General

The development process shall include:

a) preparing information design concepts, templates or models;
b) gathering information;
c) selecting the content structure;
d) applying the information design to create the written and graphic content;
e) implementing the information in the specified media; and
f) editing and reviewing the content, and evaluating the information for use with the supported product.

Usability testing should be used to demonstrate that information for use allows the target audiences to perform the described tasks, or to point out defects.

6.3.2 Design, information gathering and development

A consistent design concept should be used for related information for use. A style guide or guideline for authoring and editing should be established and followed throughout the information for use, covering, for example:

- writing style;
- wording;
- consistent use of terms;
- form of addressing or referring to the target audiences;
- design of text and page layout including selection of typeface and font size;
- navigation and linking; and
- use of the structures for information types (e.g. safety notes and procedures).

Consistent terminology should be agreed, recorded, and communicated for use throughout the information for use. If translation is required, the translation provider should provide information showing how terms have been translated consistently for the target language.

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NOTE For further information on terminology work see ISO 704.

Empirical tests (see Table 1 in 6.3.3) should be carried out if there are any doubts that technical terms will be understood by the target audience.

The underlying terminology should be defined and documented before drafting the content of the information for use.

6.3.3 Reviewing, editing and testing

Reviewing and testing of the information for use should be performed throughout the information development process.

Evaluations should be performed using methods such as peer reviews, walkthroughs and inspections by experts outside the team responsible for development of the supported product. Interactive empirical evaluation of the information for use should be carried out by a panel representing the range of target audiences. Informal or controlled usability testing should also be carried out. Editing should be performed by persons other than those involved in writing or translating the information for use.

The source text should be reviewed for accuracy, consistency, and usability before it is translated. Translations should be reviewed for technical and linguistic accuracy and clarity by competent persons; details are given in 10.4.

Empirical evaluation (e.g. usability testing) should be used as a means for determining whether the information for use achieves its purpose. Table 1 shows examples of empirical methods.

Table 1 – Examples of empirical methods

Empirical method	Scope and objectives of the method
Interviews for opinion survey	analysis of satisfaction by those involved in the preparation or presentation of the information for use target audience analysis identification of information regarding the context of use of the product (for example why, where, how often) identification of target audiences' needs assessment or evaluation of information for use comparison of different information products
Focus groups for opinion survey	identification of target audiences' needs assessment or evaluation regarding handling of and working with the information for use comparison of different styles and formats
Usability testing	identification of gaps and weaknesses in the information for use testing of information for use or comparison of different versions testing of comprehensibility and usability
Self-assessments and checklists	assessment of quality according to technical criteria checklists relating to standards
Expertise, expert reviews and certification	assessment of information for use according to defined criteria analysis of weak points attention to legal concerns
Feedback, recommendations, or observations from independent award or merit schemes	evaluation of a product according to generally accepted guidelines comparison with other information products

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Empirical method	Scope and objectives of the method
Feedback from complaints management, hotlines and service information	continuing improvement process optimization of request handling improvement of the information product

Improvements should be incorporated into the style guide in order to continually improve the quality of information for use. Errors discovered during reviews and testing shall be recorded, analysed for severity and time and cost to correct, and resolved.

NOTE 1 For example, a minor spelling error can be immediately corrected, but an error affecting safety-critical systems could cause a project shutdown until the problem is resolved.

Project schedules should allow time for reviews and correction of significant defects, with repeated reviews if needed. A designated person shall be the review authority for determining whether the information for use has met its review criteria and can proceed to the next stage.

NOTE 2 ISO/IEC/IEEE 26513 provides detailed requirements for review and test of information for users.

6.4 Production and distribution

Production of information for use shall comprise the integration, preparation, reproduction, packaging and distribution of physical media or electronic copies of the information for use. Suppliers should identify the information for use for the supported product in their logistics and order processing systems.

6.5 Sustainment, maintenance and improvement

Sustainment shall include continuing target audience feedback, in order to keep the information for use current for different versions of a supported product throughout the life cycle of those products, including feedback on modifications relating to improved usability.

The supplier shall establish a method for receiving information on changes, updating information for use, and making updates available to the target audiences.

Information on customer satisfaction should be used to amend information for use as appropriate. Such information can be found from customer complaints, service reports, analyses of causes of accidents and injuries, and reviews of products posted on the Internet.

After the sale of the product, the target audiences should be informed of safety-critical revisions to information for use via websites, e-mails, or mass media announcements.

Suppliers should encourage target audiences to provide feedback on experiences with using the information for use and the supported products.

Suppliers can consider related information published by third parties to identify improvements or missing content in the suppliers' information for use.

7 Content of information for use

7.1 General

The order of subclauses in Clauses 7 and 8 does not imply that the information for use should be developed in this order or presented to the target audiences in this order.

The content of the information for use shall cover the needs of the target audiences for the safe, effective and efficient use of the product, applying the principle of minimalism.

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Information for use shall describe the intended use of the product and provide information that helps the target audiences avoid unacceptable safety risks, malfunction of or damage to the supported product, or inefficient operation. Information for use shall provide the target audiences with the necessary information to identify and avoid reasonably foreseeable misuse of the product as identified in accordance with 6.2.7.

7.2 Identifiers

7.2.1 Identification of information for use

Information for use can be supplied through a set of information products. Each information product shall be unambiguously identifiable. It shall be designated by a unique identifier and reference information, including, where applicable:

a) title of the information product;

b) identification number;

c) date of issue;

d) revision number and date of issue of the revision of the information product, where applicable; and

e) identifier for the language.

NOTE ISO 639-2 provides standard codes for the names of languages, which can identify the various languages in information for use.

7.2.2 Identification of the supported product

Information for use shall clearly identify the supported product. The information for use shall display the unique identifier of the supported product, including, where applicable:

a) name;

b) serial number, type number or lot number;

c) version number;

d) information about the configuration; and

e) illustrations.

Where the product is in conformance with an international standard, this should be indicated. Where more than one product version is addressed by the information for use, the identifier of a specific version shall be clearly recognizable in the information for use and on the product, to facilitate identification. The relationship between content and operational features of different product variants should be unambiguous.

NOTE For information about identification requirements, see IEC 62507-1.

7.2.3 Identification of the supplier

Information for use shall indicate the supplier of the supported product. It shall therefore display:

a) name and address;

b) contact details such as telephone numbers, email address, hyperlinks and other possible means of communication; and

c) contact details of providers of special tools, material, authorized service centres for the product and technical assistance, if offered.

7.3 Importance of retaining printed information for use

If the information for use is delivered in paper form, the target audience's attention shall be drawn to the importance of retaining it for the intended lifetime of the supported product by a statement as shown by the two examples in Figure 2:

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Example 1:

IMPORTANT
Read carefully before use.
Keep for future reference.

Example 2:

For safe and proper use,
follow these instructions.
Keep them for future reference.

IEC

Figure 2 – Examples for notice to retain information

NOTE For the safety sign, see ISO 7010-M002:2011-05.

Replacement copies of information for use shall be made available from the supplier (for example, from a website) throughout the intended lifetime of the supported product.

7.4 Presentational conventions

Presentational conventions used in information for use shall be listed and explained when this convention is essential to understand the information, for example, the use of a particular typeface for text to be entered by the user, keyboard keys, or menu items.

7.5 Terminology

Consistent terminology shall be used throughout the information for use, on the supported product, and on its packaging. Ambiguities shall be avoided. Colloquial expressions and untypical regional variations of names and product features should be avoided.

Unless the supported product is intended for use by a target audience with specialist knowledge, terminology shall be explained, for example by adding definitions, links, references or glossaries.

If the information for use of a system contains documents from various other suppliers, consistency of all terms in all documents cannot always be achieved. In this case the supplier shall explain the meaning of the differing terms so that the target audience can easily relate the different terms in different documents.

7.6 Acronyms, abbreviations and technical terms

Unavoidable acronyms, abbreviations and technical terms not readily understood by the target audience shall be listed and explained.

7.7 Explanation of safety signs, graphical symbols and markings

Safety signs, graphical symbols, pictograms, and markings placed on the supported product and packaging shall be explained.

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7.8 Product description

7.8.1 General description

Information for use shall contain a general description of the supported product so that the target audience can understand the essential functions of the product in the contexts in which it is intended to be used. The intended uses of products shall be clearly and unambiguously described, including the technical limits and conditions within which the product is intended to be used.

7.8.2 Visualization

In addition to the general description, a visualization of the supported product should be provided to help the target audience identify the product and its main functions.

7.8.3 Specifications

The product description shall include the following specifications where applicable:

a) complete measurements, for example, of mass, volumetric capacity, and performance;

b) information regarding electrical ratings (e.g. input voltage);

c) information regarding energy consumption, energy efficiency rating, insulation category, and IP code;

NOTE IP Code is defined in IEC 60529.

d) communication interfaces and protocols;

e) gas supply (for example, type, pressure); water supply and other relevant information on items such as cleaning agents, lubricants, and fuses (for example, type, rated value and characteristics);

f) by-products of use under specified circumstances, such as emitted noise level, waste discharge rate;

g) electromagnetic compatibility (EMC);

h) description of the type of intended user and, especially in the case of accessible design products, a clear statement of any special precautions that should be followed by the user;

i) standards, and legal and regulatory obligations with which the supported product complies;

j) notes on intended use and reasonably foreseeable misuse of the supported product;

k) description of the user controls and indicators applicable to the relevant component(s);

l) acceptable environmental conditions, such as ambient temperature or humidity; and

m) information about the year of manufacture, expiration date, and limitations on hours of use, if supported products have an intended limited lifetime, for example, for safety reasons, quality or economic performance.

For principles and methods for detailed specification of products, see IEC 62569-1.

7.9 Supplied accessories, consumables and spare parts

7.9.1 Accessories supplied with the product

The following information, as required for each supplied accessory, shall be included in the information for use:

a) name, part number;

b) illustrations to allow the target audiences to identify the accessory and where to attach it;

c) description of its function and purpose;

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d) information needed to install the accessory, for example with an illustration, and how to use it; and

e) information needed to order a replacement.

7.9.2 Consumables

Where consumables are required, the following information shall be provided in the information for use:

a) description and recommended quantity of consumables and where applicable, the supplier's model name or part number, and a generic name;

b) an illustration showing the position of, or access to, the consumables (preferably in an exploded view);

c) information for removal and replacement or refilling;

d) information about disposal of consumables; and

e) information on when a consumable is no longer usable, for example, signs of material degradation or excessive storage time or number of allowable uses.

7.9.3 Spare parts

For products with replaceable parts, a list of spare parts shall be provided. The following information should, as appropriate, be provided for each spare part:

a) name, identification and serial number in the form used on the supported product;

b) supplier's part or type and version numbers as well as the name, reference and version numbers for branded parts, if different from the above;

c) illustration of the part and its position, preferably in exploded view;

d) sources of supply as well as alternative sources of supply for spare parts;

e) parts for which there is a refurbishing service available provided by the supplier or a service provider;

f) for industrial systems, identification according to IEC 81346-1 for components and locations where a spare part can be used as a replacement;

g) the year of manufacture or the year for the availability of the spare part if not given in a separate document; and

h) information about disposal of spare parts.

7.10 Information for use needed during the lifetime of the supported product

7.10.1 General

Where legal requirements, safety, or technical reasons prohibit the installation, operation, or maintenance of the supported product by non-skilled persons, this shall be made clear in the information for use. In such cases, the qualifications, competencies, and skills required shall be clearly stated in the information for use.

7.10.2 Re-packaging of the supported product

Where applicable, information for use shall include information on special precautions to be taken when repackaging.

7.10.3 Transportation and storage of the supported product

Where applicable, information for use shall include information for the protection of the supported product and the safety of persons during transportation and storage, for example:

- dimensions, mass, and centre of gravity;

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- methods of lifting, handling and transportation (e.g., by indicating gripping points and lock-down screws) that can prevent damaging impacts and can help avoid strain injury to the user;
- storage requirements with associated ambient conditions, for example, humidity, storing flat, avoiding direct sunlight;
- storage of the supported product during transport before and after use; and
- methods for securing the supported product against unexpected shocks.

7.10.4 Installation of the supported product

Where applicable, information for use shall include information on installation, as follows:

a) what to do if the product itself or the packaging is damaged or unintentionally opened before use;

b) methods for the removal of transport packaging restraints and transit clamps;

c) procedures for unpacking (provided on the outside of the packaging) and for the removal and safe disposal of protective and preservative packaging;

d) a checklist of items included in the package;

e) minimum space needed for use, maintenance and repair;

f) a layout plan;

g) an interconnection diagram or table;

h) conditions for assembly and installation including earthquake-resistant considerations;

NOTE For self-assembly products, see 7.12.

i) methods, precautions and legal restrictions for connecting the supported product to power and water supplies, drainage and other auxiliary supplies; and

j) checking whether the product is properly installed and ready to perform safely and as intended by the supplier.

If a product is supplied to locations that prohibit the installation by non-skilled persons, the information for use shall state that installation requires special expertise and specify the needed expertise.

7.10.5 Commissioning of the supported product

Information for use shall include the information necessary for the commissioning of the supported product prior to its handing over in working order.

7.10.6 Modification of the supported product

Where modification of a supported product is not permitted, this restriction shall be clearly stated in the information for use, together with information about possible consequences resulting from a modification. These consequences can include invalidation of warranties and access to support services.

Where modification of a supported product is permitted, the information for use shall clearly describe and illustrate how to undertake such modifications or direct the target audiences to a source of relevant information.

7.10.7 Operation of the supported product

7.10.7.1 General

Information for use shall provide information on the following:

a) normal operation; and

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b) exceptional and emergency situations.

7.10.7.2 Normal operation

Information for use shall, where applicable, include the following:

a) illustrations that clarify or reinforce understanding of the main functions and safety precautions;
b) information related to when and how the supported product should be used;
c) information about local or remote operation and how to switch between the two;
d) information about manual operation and automatic operation and how to switch between the modes of operation;
e) means of starting and stopping the supported product's operation;
f) initiating operations, checks, adjustments, or conditioning required prior to each occasion of normal use;
g) identification and correction of malfunctions; and
h) recommendations for waste disposal.

Information regarding operational control shall explain indicators of the operational state as appropriate regarding:

1) normal operation;
2) indications that the system has automatically switched to safe operation mode before a hazardous situation has been reached;
3) the current state of operation;
4) what to do when the control system itself has failed; and
5) whether the system is in manual, local, or automatic mode.

NOTE For software documentation for user guidance systems, refer to IEC 61506.

7.10.7.3 Exceptional and emergency situations

Information for use shall, where applicable, cover the following:

a) sequence of actions to be taken in the case of an unexpected interruption of power, cooling, control functions, or another emergency situation;
b) fault indication and its location;
c) restarting after an intervention;
d) the type of firefighting equipment to be used in the case of fire;
e) foreseeable emissions, leaks, or decomposition of harmful substances, together with associated warnings of the likely hazards and precautions for avoiding harm; and
f) first aid treatments recommended for foreseeable acute medical conditions that can result from the use of the supported product, for example, toxic shock, epileptic seizure or burns, and advice on subsequent professional medical treatment to be sought.

7.10.8 Indications of faults and warning device signals of the supported product

Recognizable indications of normal and abnormal operation and the recognition of signals from any warning devices shall be explained in instructional information that is accessible without the operation of the supported product.

Signals or displays intended to indicate impending risk of damage or imminent danger shall be readily comprehensible and unambiguous.

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7.10.9 Meanings of signals of the supported product

The meanings of signals, such as flashing indicators, colour changes or audible signals shall be explained so that they are easily recognized and understood by the target audience.

NOTE Examples of signal signs are found in IEC 60073, ISO 7731, ISO 11429, ISO 15006 and ISO TR 16352.

7.10.10 Maintenance of the supported product by non-skilled and skilled persons

7.10.10.1 General

Separate information shall be provided for maintenance that can be performed by non-skilled and skilled persons, preferably as separate information products or topics.

7.10.10.2 Maintenance by non-skilled persons

If non-skilled persons are allowed to perform maintenance, the information for use shall include descriptions of those tasks with appropriate illustrations and an explanation of the nature and frequency of those tasks.

If some maintenance tasks need to be performed more frequently than others (e.g. every day) they shall be distinguished from periodic (short-term and long-term) maintenance and inspection activities.

Materials and tools used for cleaning, for example, appropriate chemical substances, cleaning cloths and brushes, shall also be specified. Possible risks arising from the use of inappropriate materials and tools shall be clearly specified.

When there are maintenance tasks that should not be attempted by non-skilled persons, the tasks shall be identified and information shall be given on how to contact the supplier or others to obtain technical assistance.

7.10.10.3 Maintenance by skilled persons

Information on maintenance by skilled persons shall include:

a) the nature and frequency of inspections;
b) safety precautions and warnings for maintenance carried out on running or live equipment;
c) drawings and diagrams enabling maintenance to be done effectively;
d) regular checking of warning devices;
e) details of cleaning methods;
f) required tools and materials;
g) safety hazards or problems resulting from corrosion or weakening of structural parts of the supported product;
h) schedules for planned periodic maintenance, or predicted maintenance based upon the results of the condition monitoring of the systems and components involved, or any combination of both methods; and
i) contact details of the supplier or others from whom technical assistance can be obtained.

7.10.11 Maintenance of complex systems

An overall maintenance and service procedure for a complex system such as an industrial plant should be drawn up by combining the maintenance and service procedures for key components.

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Product maintenance includes procedures to prevent or correct errors. In systems, maintenance information includes the system as a whole as well as various subsystems and components, considering the required or expected system reliability and availability.

Maintenance information shall include the following:

a) safety precautions for performing maintenance such as complete or partial shutdown; and

b) procedures for accessing subsystems or components to perform maintenance, including means of emergency exit.

7.10.12 Troubleshooting and repair of the supported product by non-skilled and skilled persons

7.10.12.1 General

Separate information shall be provided for troubleshooting and repair that can be performed by non-skilled and skilled persons, preferably as separate information products or topics.

Contact details of the supplier or others from whom technical assistance can be obtained should be provided in a form that can be referred to without operation of the supported product.

7.10.12.2 Troubleshooting and repair by non-skilled persons

Where non-skilled persons are permitted to repair the supported product, the following information shall be provided:

a) method of repair without the risk of harm to persons or damage to the supported product; and

b) method for testing after the repair, if any test is required.

The information for use may include troubleshooting guidance or a list of frequently-asked-questions (FAQs), with appropriate illustrations, on the types of fault that non-skilled persons can reasonably be expected to attempt to repair.

7.10.12.3 Troubleshooting and repair by skilled persons

When repair of the supported product by skilled persons is permitted, the following information shall be provided:

1) method of repair; and

2) method for testing after the repair, if any test is required.

The following information shall be provided, where applicable:

a) list of indications for fault identification and its location;

b) list of indications of normal operation;

c) descriptions of built-in diagnostic systems to aid fault detection;

d) drawings and diagrams to enable troubleshooting to be carried out effectively;

e) directions for noting malfunctions of equipment, noting abnormal symptoms and indications, and recording operation of alarms and trips;

f) directions for starting standby or alternative systems, and for shutting down and isolating malfunctioning units;

g) repairs and adjustments;

h) aids for troubleshooting procedures, such as functionally identified maintenance systems, step-by-step fault diagnosis, algorithms, or, in complex systems, fault trees and computer-based fault diagnosis;

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i) clear definition of troubleshooting and repair tasks that should not be attempted; and

j) contact details of the supplier or others from whom technical assistance can be obtained.

7.10.13 Replacement of parts of the supported product by non-skilled and skilled persons

7.10.13.1 General

Separate information shall be provided on replacement of parts that can be performed by non-skilled and skilled persons, preferably as separate information products or topics.

Contact details of the supplier or others from whom technical assistance can be obtained shall be provided.

7.10.13.2 Information on replacement of parts

Where replacement of parts is permitted, the following information shall be provided:

a) method of replacement without harm to persons or damage to the product;

b) method for testing after the replacement, if any test is required; and

c) source of spare parts.

If a refit of labels is necessary during the intended lifetime of the product, information about the locations of the labels and their replacement shall be given.

7.10.14 Disassembly, recycling, disposal of the supported product

7.10.14.1 General

Information for use shall provide information on disassembly, recycling or disposal of the product.

7.10.14.2 Disassembly

If disassembly by the target audience is permitted, information shall be provided, taking into account safety and environmental considerations.

7.10.14.3 Recycling

Where specific procedures are necessary for recycling of the product or its components, this information shall be provided in accordance with the appropriate legal requirements and standards.

7.10.14.4 Disposal

Information on disposal shall be provided, taking into account environmental and safety considerations, and legal requirements.

For products containing data or intellectual property such as software, the supplier shall identify in the information for use:

a) responsibilities concerning disposal;

b) determination of ownership of stored data and IT assets;

c) procedures to remove and retain or to destroy data and IT assets; and

d) procedures to confirm that data has been removed from data storage devices before they are recycled, or to physically destroy the devices.

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7.11 Safety-related information

7.11.1 Types of safety-related information

Three types of safety-related information shall be separately identified:

a) safety signs and product safety labels;

b) safety notes; and

c) warning messages.

Safety-related restrictions concerning the use of the supported product shall be given in the information for use.

Safety-related information shall be incorporated into the information for the intended safe use of the product, including:

1) the intended environment;
2) type of application;
3) needed tools;
4) protective features of the product to be installed or activated;
5) safe use and disposal of the product;
6) working materials and consumables;
7) identification of permitted modifications of the product; and
8) procedures to maintain the product in a safe condition and to dispose of it safely.

7.11.2 Location of safety-related information

Safety notes shall be provided in a separate clause or section at the beginning of the information for use. This clause or section shall be identified and shall have a heading which emphasizes the importance of the content.

NOTE 1 It is not necessary and usually not helpful to place safety notes before the table of contents.

In step-by-step instructions, warning messages shall be given in the context in which a hazard is likely to occur.

If personal protective equipment is necessary, its information shall be described in the following places:

a) at the beginning of step-by-step instructions for a task that requires personal protective equipment; and

b) on the package and the product, where applicable.

NOTE 2 It is possible that product-related standards and legal regulations contain additional requirements.

7.11.3 Precautions for particular target audiences

Hazards for particularly vulnerable target audiences shall be identified at the beginning of the information for use. Such information shall be highlighted for emphasis. Vulnerable target audiences can include the following:

a) children;

b) older persons;

c) persons with disabilities;

d) persons with electrically controlled medical devices;

e) persons who suffer from allergic reactions to specific chemicals; and

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