BS EN 82079-1:2012

BSI Standards Publication

Preparation of instructions for use — Structuring, content and presentation

Part 1: General principles and detailed requirements

raising standards worldwide™

National foreword

This British Standard is the UK implementation of EN 82079-1:2012. It supersedes BS 4884-1:1992, BS 4884-2:1993, BS 4884-3:1993 and BS EN 62079:2001 which are withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/3, Documentation and graphical symbols.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2012

ISBN 978 0 580 61751 5

ICS 01.110

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2012.

Amendments issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 82079-1

September 2012

ICS 01.110; 29.020

Supersedes EN 62079:2001

English version

Preparation of instructions for use - Structuring, content and presentation - Part 1: General principles and detailed requirements

(IEC 82079-1:2012)

Etablissement des instructions d'utilisation
-
Structure, contenu et présentation -
Partie 1: Principes généraux et exigences détaillées
(CEI 82079-1:2012)

Erstellen von Gebrauchsanleitungen -
Gliederung, Inhalt und Darstellung -
Teil 1: Allgemeine Grundsätze und ausführliche Anforderungen
(IEC 82079-1:2012)

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 82079-1:2012 E

Foreword

The text of document 3/1093/FDIS, future edition 1 of IEC 82079-1, prepared by IEC/TC 3 "Information structures, documentation and graphical symbols" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 82079-1:2012.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-06-12
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-09-12

This document supersedes EN 62079:2001.

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

Endorsement notice

The text of the International Standard IEC 82079-1:2012 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60073	NOTE	Harmonized as EN 60073.
IEC 60848	NOTE	Harmonized as EN 60848.
IEC 61082-1:2006	NOTE	Harmonized as EN 61082-1:2006 (not modified).
IEC 61310-1	NOTE	Harmonized as EN 61310-1.
IEC 61355-1:2008	NOTE	Harmonized as EN 61355-1:2008 (not modified).
IEC 80416-1:2008	NOTE	Harmonized as EN 80416-1:2009 (not modified).
IEC 81346-1	NOTE	Harmonized as EN 81346-1.
ISO 9000:2005	NOTE	Harmonized as EN ISO 9000:2005 (not modified).
ISO 10628	NOTE	Harmonized as EN ISO 10628.
ISO 15006	NOTE	Harmonized as EN ISO 15006.

Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60204-1 (mod)	2005	Safety of machinery - Electrical equipment of machines - Part 1: General requirements	EN 60204-1 + corr. February	2006 2010
IEC 60417	Data base	Graphical symbols for use on equipment	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 60617	Data base	Graphical symbols for diagrams	-	-
IEC 62507-1	-	Identification systems enabling unambiguous information interchange - Requirements - Part 1: Principles and methods	EN 62507-1	-
IEC/PAS 62569-1	2009	Generic specification of information on products - Part 1: Principles and methods	-	-
ISO/IEC Guide 51	1999	Safety aspects - Guidelines for their inclusion in standards	-	-
ISO/IEC Guide 71	2001	Guidelines for standards developers to address the needs of older persons and persons with disabilities	-	-
ISO 3864	Series	Graphical symbols - Safety colours and safety signs	-	-
ISO 3864-2	-	Graphical symbols - Safety colours and safety signs - Part 2: Design principles for product safety labels	-	-
ISO 7000	-	Graphical symbols for use on equipment - Index and synopsis	-	-
ISO 7010	-	Graphical symbols - Safety colours and safety signs - Registered safety signs	EN ISO 7010	-
ISO 9241	Series	Ergonomic requirements for office work with visual display terminals (VDTs)	EN ISO 9241	Series
ISO 11683	-	Packaging - Tactile warnings of danger - Requirements	EN ISO 11683	-
ISO 12100	-	Safety of machinery - General principles for design - Risk assessment and risk reduction	EN ISO 12100	-
ISO 14617	Series	Graphical symbols for diagrams	-	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PREPARATION OF INSTRUCTIONS FOR USE – STRUCTURING, CONTENT AND PRESENTATION –

Part 1: General principles and detailed requirements

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 82079-1 has been prepared by IEC technical committee 3: Information structures, documentation and graphical symbols, in liaison with ISO technical committee 10: Technical product documentation, and with the ISO Committee on consumer policy (COPOLCO).

This first edition cancels and replaces IEC 62079 published in 2001.It constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
3/1093/FDIS	3/1103/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC Web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

PREPARATION OF INSTRUCTIONS FOR USE – STRUCTURING, CONTENT AND PRESENTATION –

Part 1: General principles and detailed requirements

1 Scope

This part of IEC 82079 provides general principles and detailed requirements for the design and formulation of all types of instructions for use that will be necessary or helpful for users of products of all kinds, ranging from a tin of paint to large or highly complex products, such as large industrial machinery, turnkey based plants or buildings.

NOTE The term "product" as defined in 3.29 relates to consumer, non-consumer, electrical, electronic, electromechanical, mechanical and other products.

This part is intended for all parties involved in the preparation of instructions for use, for example:

- Suppliers, technical writers, technical illustrators, software designers, translators or other people engaged in the work of conceiving and drafting such instructions for use;

This part of IEC 82079 does not specify a fixed amount of documentation that has to be delivered with a product. This is obviously not possible because this part is applicable to all kinds of products. The amount of documentation required, will depend on the nature of the product, its complexity and the skills of the intended users.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60204-1:2005, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60417, *Graphical symbols for use on equipment*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60617, *Graphical symbols for diagrams*

IEC 62507-1, *Identification systems enabling unambiguous information interchange – Requirements – Part 1: Principles and methods*

IEC/PAS 62569-1:2009, *Generic specification of information on products – Part 1: Principles and methods*

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

ISO 3864-2, *Graphical symbols – Safety colours and safety signs – Part 2: Design principles for product safety labels*

ISO 7000, *Graphical symbols for use on equipment – Index and synopsis*

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

ISO 9241 (all parts), *Ergonomics of human-system interaction*

ISO 11683, *Packaging – Tactile warnings of danger – Requirements*

ISO 12100, *Safety of machinery – General principles for design – Risk assessment and risk reduction*.

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

ISO/IEC Guide 51:1999, *Safety aspects – Guidelines for their inclusion in standards*

ISO/IEC Guide 71:2001, *Guidelines for standards developers to address the needs of older persons and persons with disabilities*

3 Terms and definitions

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

NOTE Terms in italics are defined elsewhere in this clause.

3.1
accessible design product
product which is designed to maximize the number of potential users

3.2
braille
writing system using a series of two dimensional patterns of raised dots to be read with the fingers

3.3
commissioning
procedures prior, or related, to the handing over of a product ready for putting into service, including final acceptance testing, the handing over of all documentation relevant to the use of the *product* and, if necessary, instructing personnel

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

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

3.5
conformity
fulfillment of specified requirements

Note 1 to entry: The term “conformance” is synonymous but deprecated.

3.6
consequence
outcome of an occurrence of a particular set of circumstances

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

Note 2 to entry: Consequences can range from positive to negative. However, the consequences of not following safety requirements will always be negative.

Note 3 to entry: Consequences can be expressed qualitatively or quantitatively.

[SOURCE: ISO Guide 73:2009, definition 3.6.1.3 modified]

3.7
consumable
any part or material that is necessary for continued use or *maintenance* of the *product*

3.8
consumer
individual member of the general public, purchasing or using products, property or services, for private purposes

Note 1 to entry: For the purpose of the requirements of this part of IEC 82079, a “consumer” is assumed not to be a skilled person.

3.9
consumer product
product available to, intended for or likely to be used by consumers

Note 1 to entry: Consumer products include accessible design products.

3.10
customer
individual or organization that purchases or receives a *product*

Note 1 to entry: Examples are consumer, client, end-user, retailer, beneficiary and purchaser.

Note 2 to entry: The term "customer" includes but has a broader meaning than “consumer”.

[SOURCE: ISO 9000:2005, definition 3.3.5, modified]

3.11
display
device provided as part of a *product* for the purpose of visually or tangibly presenting information by human-readable text or graphics

3.12
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 61082-1:2006, definition 3.1.2]

3.13
documentation
collection of *documents* related to a given subject

[SOURCE: IEC 61082-1:2006, definition 3.1.4]

3.14
equipment
associated assemblies intended to achieve a defined final objective

3.15
graphical symbol
visual perceptible figure with a particular meaning used to transmit information independently of language

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

3.16
harm
physical injury or damage to the health of people or damage to property or the environment

[SOURCE: ISO/IEC Guide 51:1999, definition 3.3]

3.17
hazard
potential source of *harm*

[SOURCE: ISO/IEC Guide 51:1999, definition 3.5]

3.18
illustration
visually perceptible figure, such as graphical image, picture, figure, photograph, line drawing, etc., artificially created to transmit specific information, excluding *graphical symbols*

3.19
instructions for use
information provided by the *supplier* of a *product* to the *user*, containing all the necessary provisions to convey the actions to be performed for the safe and efficient use of the *product*

Note 1 to entry: Instructions for use of a single product comprise one or more documents.

[SOURCE: ISO/IEC Guide 14:2003, definition 2.8, modified]

3.20
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.

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.

3.21
label
item, attached to a *product*, which displays information related to one or more characteristic(s) of the *product*

[SOURCE: ISO/IEC Guide 14:2003, definition 2.9]

3.22
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*

3.23
manual
document containing information for the use of a *product*

Note 1 to entry: The definition D00014 in IEC 61355 defines the document type “XXX Manual”, where the letters XXX are intended to be replaced by the type of manual.

3.24
marking
logo, inscription, *graphical symbo*l, pictogram, tactile indicator, warning sign on the *product* to identify its type or to give directive

Note 1 to entry: Marking may also include short textual messages.

[SOURCE: ISO/IEC Guide 14:2003, definition 2.4, modified]

3.25
modification
changes made to a *product* in order to alter its *specified intended use*

3.26
organization
group of individuals and facilities with an arrangement of responsibilities, authorities and relationships

EXAMPLES Company, corporation, firm, enterprise, institution, charity, sole trader, association, or parts or combination thereof

Note 1 to entry: An organization can be public or private.

[SOURCE: ISO 9000:2005, definition 3.3.1, modified]

3.27
personal protective equipment
special device or appliance designed to be worn or held by an individual for protection against one or more health and safety *hazards*

3.28
plant
assembly of different systems on a specific site

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

3.29
product
intended or accomplished result of labour, or of a natural or artificial process, which could be a good or service

Note 1 to entry: Instructions for use are seen as a part of a product.

3.30
product safety label
label on a *product* that informs the observer of one or more potential hazards and describes the safety precautions and/or actions required to avoid the *hazard*(s)

[SOURCE: ISO 17724:2003, definition 3.58]

3.31
reasonably foreseeable misuse
use of a *product* in a way not described as *intended use* in the *instructions for use*, but which may result from readily predictable human behaviour

[SOURCE: ISO/IEC Guide 51:1999, definition 3.14, modified]

3.32
repair
part of corrective *maintenance* in which actions are performed on a product including replacement of worn-out parts and reworking of defective or damaged parts or functions

3.33
risk
combination of the probability of occurrence of *harm* and the severity of that *harm*

[SOURCE: ISO/IEC Guide 51:1999, definition 3.2]

3.34
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 users

3.35
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, definition 3.3]

3.36
service
result of activities between a *supplier* and a *customer*, and the internal activities carried out by the *supplier* to meet the requirements of the *customer*

[SOURCE: ISO/IEC Guide 14:2003, definition 2.2, modified]

3.37
skilled person
individual with relevant technical education, training and/or experience enabling him or her to perceive *risks* and to avoid *hazards* occurring during use of a *product*

[SOURCE: IEV 195-04-01, modified and IEC 60204-1:2005, definition 3.53, modified]

3.38
supplied accessory
part packaged with the *product* (or as optional extra) that is necessary for certain operations or *maintenance* of the *product*

3.39
supplier
individual or *organization* that provides *products* and related *documentation*

Note 1 to entry: Examples of supplier are producer, manufacturer, integrator, vendor, distributor, retailer, agency, provider of information or their authorized representatives.

[SOURCE: ISO/IEC Guide 14:2003, definition 2.16, modified and ISO 9000:2005, definition 3.3.6, modified]

3.40
target group
group of persons for which *instructions for use* are intended

3.41
use
activity that the *user* may perform with or on the *product* during its whole life cycle

3.42
user
individual or *organization* that uses *products*

Note 1 to entry: In this part of IEC 82079, the term “user” means “end user” except when otherwise noted

3.43
warning message
safety-related information that warns *users* about *hazards* and instructs on how to avoid them

Note 1 to entry: Warning messages are normally given within instructions for use related to tasks in which the hazards may occur.

4 Principles

4.1 Provision of instructions for use

4.1.1 General

The level of description and details of information shall be adapted to the knowledge of target group(s). Instructions for use shall ensure the completeness of relevant information at a sufficient level of detail based on the ascertained needs of the target group.

4.1.2 Instructions for use are part of the product

A product shall be accompanied by instructions for use which promote its intended use and contain all information that a user needs to know when using the product. Where instructions for use comprise more than one document, these shall be arranged in a meaningful and organized system and support navigation. The way in which third party documents are integrated shall be based on customer requirements and user needs.

Instructions for use shall when followed by the user contribute to reducing the risk of injury or illness to people or animals, and risks of damage, malfunction or inefficient operation of the product. Instructions for use cannot compensate for design deficiencies or missing safety systems (see ISO/IEC Guide 37).

4.1.3 Consistency of information

All information in instructions for use shall be consistent within itself, with the product and with all other information relating to the same product issued by the supplier, such as advertising or packaging and any warranty and Web based information. Information in instructions for use must also be consistent with any legal requirements which may result from any warranty stipulations. Consistent terminology shall be used in the instructions for use, on the product and its packaging, and in supplementary materials, all training and promotional materials including markings, labels and transport packaging.

4.1.4 Product warranty

The product warranty shall include all relevant terms and conditions (for example, date of expiry, service conditions, allowed modifications, availability of spare parts), and shall be provided together with the instructions for use.

It may be appropriate to put the product warranty into a separate document especially when the terms vary between different sales channels or countries.

4.1.5 Information provided after sale of products

After the product has passed into the user’s possession, it can be helpful to provide, via Internet based message exchange or other means of communication to users and target groups, reference copies of the instructions for use (including any subsequent additions or revisions) and other information that will be beneficial to the user. When safety-critical revisions are made to instructions for use after the sale of products, then – in addition to updating the version on the Web site – the users should be informed individually or by mass

media announcements in order to fulfil the supplier's duties under local legislation covering safety recalls or product liability.

4.1.6 Security aspects

Inclusion of security aspects shall be in accordance with ISO/IEC Guide 81.

4.2 Quality of communication

The preparation of instructions for use, including checking and proofreading, shall be the responsibility of expert writers or specialists. They must have:

- advanced competencies in communication, particularly technical communication ;
- solid competencies in the original language;
- familiarity with the subject area;
- knowledge of the process chain for the preparation of instructions for use and are competent in the application of the requirements of this part of the 82079 series in the process chain.

Instructions for use should be contextually edited by qualified persons specialised in writing for the target groups.

4.3 Minimizing risks

Instructions for use are an integral part of the safe operation and maintenance of a product. They shall provide information to avoid any unacceptable risk for the user or other parties, damage to the product itself or other products, malfunction or inefficient operation. Instructions for use shall provide users with the necessary information to allow them to identify and avoid reasonably foreseeable misuse. This requires that the product supplier ensures that the following are taken into account:

- risk assessment of use, i.e. the analysis of the process from risk analysis to risk evaluation, shall be undertaken by the supplier in accordance with ISO 12100 and/or IEC 60204-1 if applicable;
- result of the risk assessment, that is residual risk, shall be taken into account in the instructions for use as safety-related information in accordance with ISO/IEC Guide 51 and any relevant standards for safety-related information;
- reasonably foreseeable misuse and risks arising from the use of the product shall be covered.

See also 5.5.

NOTE As a matter of principle, the supplier has an obligation to include safety-related information, in fact it is a legal requirement in most countries.

4.4 Target group(s)

When preparing instructions for use, the needs and capabilities of the intended target group shall be addressed. Usually they will be the type of people likely to use the product, defined for example by age range, language, technical knowledge, or technical discipline. See also 4.8.2 and 4.8.3.

If instructions for use are directed to more than one target group (for example consumers and persons responsible for installation, repair or certain types of maintenance), they shall be separated into relevant sections that are clearly and appropriately marked. The target groups shall be defined at the beginning of the content.

4.5 Special precautions

Attention should be drawn to the need for special protective measures, such as adult supervision or the wearing of special clothing, needed to protect users and bystanders.

Dangers to particularly vulnerable groups such as children, older persons and persons with disabilities (including, for example, users with heart pacemakers, or who suffer allergic reactions to specific chemicals or are sensitive to strobe lighting effects) should also be highlighted (see ISO/IEC Guide 37 and ISO/IEC Guide 71).

4.6 Short-life products

For products which have an intended limited life, for example, for safety reasons, quality or economic performance, information shall be provided about the year of manufacture, date of expiry and/or hours of operation.

4.7 Considerations to the nature of instructions for use

4.7.1 General

With respect to the nature of instructions for use, the following shall be taken into account:

- writing style, for example avoiding the use of discriminatory or offensive language;
- legal requirements and standards;
- specialized technology available for preparing instructions for use;
- relevant international standards addressing the needs of older persons, persons with disabilities and accessibility issues. See ISO/IEC Guide 71.

4.7.2 Location

Instructions for use shall be given in one or more of the following locations as appropriate:

- inside the packaging together with the product;
- on or within the product itself;
- on the packaging, but not only on the packaging;
- on the Web sites provided by suppliers: see 4.7.5, 5.7 and 6.7, but not only on the Web sites.

However, where it is not appropriate or practical for instructions for use to be located as described above, then they should be supplied as collateral documentation.

Where instructions for use are complex, it is helpful that certain important messages are additionally given or displayed on the product, for example by means of short reference or reminder cards, stickers, illustrations or labels.

4.7.3 Means of communication and media

Means of communication and media shall be chosen as appropriate according to the environment and types of target groups (including child users, older users and users with disabilities). The decision about the media shall ensure that the target groups can have permanent and easy access to all information necessary during use under foreseeable circumstances, especially for safety, intended use, installation, getting started, commissioning, putting into service, troubleshooting, maintenance and disposal.

In most cases, such as for consumer products, a printed version of the instructions for use is necessary. Supplying instructions for use only in electronic format is not permissible in many cases, such as for compliance with legal requirements.

The following are examples of possible means of communication and media:

a) Means of communication
   1) graphical symbols;
   2) text, video (including auxiliary means such as audio and subtitles when appropriate), speech;
   3) Braille, large text, tactile figures, signs or other visible hand gestures;
   4) supplementary documentation (for example, leaflet, manual or information provided by Braille) or electronic-documentation (for example built-in manual, recorded media, or in Web sites).

b) Medium
   1) Web sites;
   2) appropriate tools using for example Radio Frequency Identification Devices;
   3) leaflets with text and illustrations;
   4) manuals for users and maintenance staff;
   5) a graphical user interface.

4.7.4 Durability

Instructions for use given on the product shall remain legible throughout the expected life of the product.

Instructions for use given on packaging or in materials accompanying the product (such as leaflets, manuals, data media, etc.) shall be produced in durable form. They shall be designed and made so as to survive frequent use during the expected life of the product in the environment where the product is intended to be used. For example that a fold-out made of thin paper will not be sufficiently durable if frequent reference to it is required.

4.7.5 Availability

Instructions for use shall be marked KEEP FOR FUTURE REFERENCE or its equivalent unless it is clear that there will be no circumstances in which they will be required during the product's operational life. The supplier of the product shall keep replacement copies of all instructions for use available throughout the expected life of the product. For each consumer product instructions for use should in addition be made available and easily found on Web sites (see 5.7 and 6.7).

Since packaging is often impermanent and destroyed in the unpacking process, the instructions for use which need to be kept for future reference should not be placed on the packaging only. Where this cannot be avoided (for example, for practical reasons), the advice to keep them for future reference shall be clearly indicated. If only a part of the packaging contains instructions for use, that part should be easily detachable from the rest of the packaging and have an appropriate form and size for being stored.

4.7.6 Electronic guidance systems

Where an electronic guidance system is provided, it shall allow a user to navigate through the structure of the system so that the users at any time know where they are in the structure. Users shall at any time be able to view on-screen the system structure, together with its nodes and associated information. The user shall be able to collapse or to expand the system structure as required.

Warning messages for foreseeable exceptional situations shall be assigned only to those nodes in the structure to which they are relevant.

4.7.7 User training

Where user training is required, this shall be specified in the instructions for use and, where appropriate also in the supply contract. However, user training courses cannot be a substitute for instructions for use but only complement them. User training courses should be provided where the instructions for use alone cannot fulfill the general requirements given in 4.1.1 because of the complexity of the product or the necessity for more comprehensive user information, or if sufficient knowledge on behalf of the user cannot be expected.

4.8 Creating instructions for use

4.8.1 Conformity with the product

4.8.1.1 Relationship between instructions for use and the product

Instructions for use shall unambiguously relate to the supplied product, therefore they shall contain information related to identification with which the product is marked. This shall as a minimum comprise name and address of the supplier, designation of series or type, product name, kind of document and, if applicable, serial number and a product illustration.

Where the product is in conformity with a recognized standard, this shall be clearly indicated. For identification requirements see IEC 62507-1. See also 5.3.

All instructions for use provided on media other then the product itself shall indicate their date of issue and should be identifiable by an appropriate revision or version number.

4.8.1.2 Variants of a product

If more than one product variant is addressed by a set of instructions for use, the identifier of a specific variant shall be clearly recognizable in the instructions for use and on the product to ensure unambiguous identification. The relationship between content and operational features of different product variants shall be unambiguous.

Where a single document covers multiple variants of one product, there are different ways to organize information, for example:

a) Each product variant has its own sections. Common parts are repeated in each product variant section. In this solution the amount of pages is large, but from the user's point of view it is easy to read (all content is applicable for the particular product variant) and the risk for misinterpretation is low. Identification of the applicable product variant is highlighted for example in footer or header of each page (see 5.3).
b) All product variants have one common section. Product variant specific information is highlighted using for example, sub-headings, different colours. This solution is compact, but special care needs to be taken when implementing and verifying instructions for use.

If option b) is used the result should be verified using empirical evaluation because there is a higher risk of misinterpretation.

4.8.1.3 Information on installation and maintenance

The parts of instructions for use dealing with installation and maintenance shall include as a minimum address of the supplier and authorized service centres for the product. The following information should be included as far as applicable: technical data, notes on warranties, trouble-shooting, a list of consumables and information about disposal.

4.8.1.4 Units of measurement

Quantities should normally be expressed in SI units (international system of units of measurement) or in derived SI units (see ISO/IEC 80000). However, quantities expressed in

instructions for use shall comply with those units of measurement used on the product. Where non-SI units of measurement are used, SI equivalents should be provided.

4.8.1.5 Optional modules and extras

Instructions for use concerning optional modules or extras should be kept clearly separate from common instructions for use and from instructions for use for other modules or extras (for example by using separate sections, headings, etc.) so that users are not confused by irrelevant information.

Where a product offers, for example, both the ability to charge re-chargeable batteries in the battery compartment or to use non-rechargeable batteries, the instructions for use should include paragraphs under separate headings for:

a) the use of re-chargeable batteries;

b) the use of non-rechargeable batteries.

4.8.1.6 Special tools, equipment, material

Instructions for use should include information for interconnecting accessories and other equipment including indication of suitable accessories, detachable parts and any special materials, as far as appropriate. The instructions for use should also contain the name and address of suppliers from whom special tools, materials, etc. and technical assistance can be obtained.

If necessary, information on repackaging should be provided for replacement, repair, reworking, refilling, etc.

4.8.2 Consideration of needs of target groups

4.8.2.1 Analyses of target groups

Consideration of the needs of target groups shall be based on analyses as set out in 4.4. For consumer products empirical tests are recommended. See also Annex E.

4.8.2.2 Target groups with particular needs

Where products are intended to be used by target groups with particular needs, instructions for use shall take them into account. Target groups with particular needs include, for example, older persons, children or other persons unable to use the product safely without supervision, persons with disabilities, adults supervising children and persons who are functionally illiterate.

4.8.2.3 Comprehensible terminology

Instructions for use shall be comprehensible by the general public unless the product is intended for use by a specific target group with specialist knowledge. Where the use of technical terms and expressions is unavoidable, their meanings shall be explained.

4.8.2.4 Meanings of signals

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

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

4.8.2.5 Supplementary information

Where supplementary information is provided, either for particular target groups or for a specific purpose, it shall clearly be indicated on the first page of the instructions for use.

Where supplementary information can be accessed via other media this shall also be indicated (see 4.7.3).

4.8.3 Languages

4.8.3.1 General

Instructions for use shall be supplied in the official language(s) of the country of sale in accordance with the local or regional legal requirements.

Selection of the additional language(s) of instructions for use should take into account the following:

a) Tourists, ethnic minorities and cross-border Internet buyers are likely to be a significant (and increasing) proportion of customers of many products on the markets of many countries.

b) A large number of target groups (for example, migrants and refugees) are non-native speakers of the official language(s) of the country they live in. They therefore will find themselves using products whose instructions for use are not written in a language they adequately understand.

Where instructions for use are given in several languages, they shall be distinguished by an appropriate designation, e.g. Code for the representation of name of languages according to ISO 639-2. In order to facilitate ease of use, instructions for use in different languages should be provided separately.

A single illustration may serve for more than one language provided the illustration is shown together with the text in each language and the illustration does not contain language specific elements.

In addition, important operation and safety precautions can be conveyed by language-independent means such as graphical symbols including safety signs and self-explanatory illustrations.

4.8.3.2 Graphical symbols, including safety signs and product safety labels

Graphical symbols, including safety signs and product safety labels shall be easily recognizable and comprehensible by the target group. Graphical symbols including safety signs used on the product or within the instructions for use which are neither readily comprehensible nor unambiguous shall be explained.

Because of the limited space generally available, placing instructions for use on a product may present problems in relation to languages, especially when the country where the instructions for use will be used has more than one official language. These problems can be solved by use of:

- graphical symbols, including safety signs and product safety labels (see 6.4) which are comprehensible;
- alpha-numeric codes, with an explanation of the meaning;
- certain words or abbreviations (for example STOP, MAX./MIN.) which are internationally acceptable.

NOTE 1 ISO 7010, IEC 60417 and ISO 7000 provide internationally standardized safety signs and graphical symbols.

NOTE 2 The ISO 9186 series of standards provides procedures for testing the comprehensibility of graphical symbols including safety signs.

4.8.3.3 Quality of translations

Where instructions for use are translated from the original language into others, expert translators or specialists shall be responsible for the translation including checking and proofreading, and:

- have basic competences in communication, particularly technical communication ;
- are familiar with the subject area;
- are fluent in the original and target languages, preferably native speakers in the target language.

Colloquial expressions and untypical regional variations of names and product features should be avoided.

The translated instructions for use should be edited by qualified persons specializing in writing and translating for the target groups.

5 Content of instructions for use

5.1 General

The functionality of products shall be described and user questions such as WHERE? WHO? WHAT? WHEN? HOW? WHY? should be anticipated and appropriate answers provided.

The information to be given depends on the target group(s) and the tasks that they are intended or allowed to perform throughout the life of the product.

If a product is supplied to markets where national laws prohibit the installation and maintenance by non-skilled persons, this shall be made clear in all the language versions of the instructions for use that are relevant to those markets.

5.2 Identification of instructions for use

Instructions for use shall have a unique identity designation including

a) identity number;
b) date of issue;
c) revision index and date of revision, if applicable;
d) name of the publisher of the instructions with address if different from the supplier.

5.3 Identification of the product

The specification or description of the product shall enable the user to identify the product by:

- product identification number, serial number, model and/or type, see IEC 62507-1;
- name/identifying information of the supplier together with the supplier’s contact details such as easily accessible telephone numbers, fax numbers, and any other possible means of communication;
- name, address, phone numbers, fax numbers, e-mail and Web addresses of providers of special tools, material, etc. and technical assistance.

Furthermore, the specification or description of the product shall provide a general overview on requirements, performance and features, and provide the following information as far as applicable:

- complete measurements, for example, mass, volumetric capacity, and performance;

- information regarding energy consumption and input voltage, insulation category (in case of insulation category II marking with graphical symbol IEC 60417-5172 (2003-02), in case of insulation category III marking with graphical symbol IEC 60417-5180 (2003-02)) and IP Code defined in IEC 60529;
- energy efficiency rating;
- requirements for 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);
- emitted noise level, waste discharge rate, etc. under specified circumstances;
- electromagnetic compatibility;
- 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 (see ISO/IEC Guide 71));
- standards and legal requirements to which the product complies;
- notes on intended use and reasonably foreseeable misuse.

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

Some product standards may require the use of particular marking or labelling on the product and/or associated instructions for use in order to show the product complies with particular requirements of these product standards.

5.4 Modification of products

Where a supplier does not allow for a product to be modified this shall be clearly stated in the instructions for use, including information about possible consequences resulting from a modification.

Where applicable it should be clearly stated that any modification of the product by the user is not recommended and any consequences will not be covered by support services or product warranties.

When a supplier allows users to modify a product, the instructions for use shall describe permissible (and non-permissible) modifications. Instructions for use shall clearly describe and illustrate how to undertake permissible modifications (or direct the user to a source of relevant information), so as to allow the user to modify the product correctly and to ensure continuing safe and efficient use.

5.5 Safety-related information

5.5.1 General

There are three types of safety-related information which should be separately identified:

- safety notes;
- warning messages;
- product safety labels/safety signs.

NOTE ISO 3864 series defines safety signs and product safety labels.

Safety-related information shall relate to the various phases of the life of the product.

Safety-related information shall include the following, if applicable:

- intended use of the product, the main function/purpose and scope of application and the essential safety principles to be observed;

- limits of application regarding, for example, place, time, environment and type of application, materials and additives, any necessary tools, as well as climatic conditions for operation and storage, such as temperature and humidity, explosive atmosphere, outdoor operation;
- clear and prominent information about personal protective equipment (for example, clothing, protective goggles) that is necessary to use the product safely;
- protective features that need to be installed or activated by users;
- potential hazards or precautions for specific groups of persons of which users shall be aware and which would not be immediately obvious without being pointed out;
- potential health consequences which may result from failure to observe precautions or avoid hazards if the risk or severity would not be immediately obvious;
- description of the user type, for example, skilled persons, or ordinary persons older than 18 years;
- information regarding restrictions on the personnel who are permitted to use the product together with any special skills required;
- specific indications that products are no longer safe to use, for example, due to wear, ageing or damage;
- information regarding safe disposal;
- explanation of graphical symbols used in safety-related information (see ISO 7000, ISO 7010, IEC 60417);
- restrictions and/or recommendations for safe use, for example, use in dry environments, or not to be used in bathrooms or other humid environments;
- signal words and/or graphical symbols including safety signs;
- warning messages on hazards;
- warning messages on reasonably foreseeable misuse;
- warning messages on radiation, including any sealed hazard, for example, sources of ionising radiation, laser (in accordance with IEC 60825-1), microwave, ultraviolet, infrared and lethal voltages;
- the need to prevent access by children or contact with pets, plants or insects.

Information about personal protective equipment should additionally be given on the packaging and/or on the product itself.

Restrictions concerning the use of the product shall be given clearly in the instructions for use, for example in specifications and in commercial brochures at the point of sale (see also ISO/IEC Guide 14).

NOTE Product-related standards and legal regulations may contain additional requirements.

5.5.2 Safety notes

Safety notes shall be presented in a meaningful organized system. They shall be provided in a separate clause or section at the beginning of the instructions for use. This clause or section shall be clearly identified and shall have a heading which emphasizes the importance of the content.

Safety notes shall as a minimum provide directions on the safe use of products, indicate potential hazards and how to avoid such hazards, and state the probable consequences of not avoiding them.

5.5.3 Warning messages

Warning messages shall be given in the context in which a danger may occur. They shall indicate potential hazards and state possible consequences if not avoided.

Warning messages shall be concise. They shall not contain complete procedures, but complement the procedures described elsewhere in the instructions for use. Information about avoiding the hazards shall be included. However, if the information about avoiding the hazard is clearly understood by the intended target groups, it may be omitted in the warning message itself.

5.5.4 Safety-related information for industrial plants

Safety-related information shall be provided with each component. Where an assembly of components might produce additional potential hazards, the relevant safety-related information shall be only provided at the relevant level of assembly. When integrating components to higher assemblies, safety-related information should be provided only at that level of aggregation where they occur.

5.5.5 Safety related information in quick-start guides

Quick-start guides shall include all safety-critical information relevant to the operations described. These shall also advice users why and when they need to read additional safety related information in the instructions for use.

5.6 Product compliance

Where applicable, instructions for use shall include information about legal and other requirements applicable to the product.

5.7 Importance of retaining instructions for use

The user's attention shall be drawn to the importance of retaining instructions for use for the life of the product by means of a statement such as

IMPORTANT

READ CAREFULLY BEFORE USE

KEEP FOR FUTURE REFERENCE.

Replacement copies of all such instructions for use shall be made available from the supplier on demand (for example, from a Web site), throughout the expected life of the product.

5.8 Preparing products for use

5.8.1 Transportation and storage

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

- dimensions, mass, and centre of gravity;
- methods of lifting, handling and transportation that are ergonomically efficient and will prevent damaging impacts (for example, by indicating gripping points and lock-down screws);
- storage requirements with associated ambient conditions (for example, humidity, laying flat, avoiding direct sunlight);
- storage of the product after use; and
- methods for securing the product against unexpected shocks.

5.8.2 Installation

For products which require installation, instructions for use shall if relevant include:

- methods for the removal of transport and packaging restraints, and equipment transit clamps;
- procedures for unpacking (provided on the outside of the packaging) and for the removal and safe disposal of any protective and preservative packaging;
- a checklist of items included in the package;
- minimum space needed for use, maintenance and repair;
- a layout plan;
- interconnection diagram and/or table;
- conditions for assembly and mounting; and
- methods, precautions and legal requirements for connecting the product to power and water supplies, drainage and other auxiliary supplies.

5.8.3 Commissioning

The instructions for use shall include all the information necessary for the commissioning of the product prior to its handing over in working order to the user.

5.9 Operation of products

5.9.1 General

The user shall be provided with information regarding normal and safe operation as well as abnormal operation of the product.

5.9.2 Normal operation

Instructions for use shall, if relevant, cover the following:

- information related to the operational environment;
- information on any manual operating techniques;
- information about local/remote operation and how to switch between the two;
- information about manual operation and automatic operation and how to switch between the two modes of operation;
- information regarding vibration for portable hand-held and hand-guided machinery;
- means of starting/stopping the product's operation;
- any initiating operations, checks, adjustments or conditioning required prior to each occasion of normal use;
- illustrations that clarify or reinforce understanding of the main functions and safety precautions;
- recommendations for waste removal; and
- identification and correction of malfunctions.

5.9.3 Additional information for automatic and remotely controlled products

User guidance systems shall provide the user in an on-line mode with additional information on the operational state of the products. For example:

- full information about normal operation;
- an indication that the system has automatically switched to safe operation mode before a hazardous situation has been reached;
- the current state of operation so that the user is made aware of this automatically guided function;
- what to do when the control system itself has failed;

- instructions on how to manage fault situations; and
- information regarding whether the system is in manual, local or automatic mode.

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

5.9.4 Indications of faults and warning device signals

Recognisable indications of normal and abnormal operation and the recognition of signals from any warning devices shall be explained in instruction media that can be referred to without operation of the product itself.

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

Appropriate warnings shall be provided where the use of the product in question might affect electrically controlled medical devices, such as heart pacemakers.

Advice shall be given to enable users to recognize any medical symptoms or adverse medical reactions that might arise from the use of the product and to understand what corrective actions or treatment to implement.

5.9.5 Exceptional/emergency situations

Where applicable, information on the following shall be provided:

- sequence of actions to be taken in the case of an unexpected interruption of power, cooling, etc;
- fault indication and its location;
- restarting after an intervention;
- in the case of possible fire, which type of fire-fighting equipment to be used;
- information about foreseeable emissions or leakages of substances with associated warnings of the nature of any hazard including precautions to avoid harm and, if possible, by which means the effects may be countered and the normal state of operation regained;
- first aid treatments recommended for any foreseeable acute medical conditions that might result from the use of the product, for example, toxic shock, epileptic fit or burns, and advice on subsequent professional medical treatment to be sought.

5.9.6 Troubleshooting and repair by non-skilled persons

If the user of the product can perform troubleshooting and repair tasks without risk of harm to him/herself, other people or safety of the product, the instructions for use shall provide a checklist of possible faults (or ‘frequently-asked-questions – ‘FAQs’). This checklist or the FAQs including appropriate illustrations shall give a clear indication of those faults which the user can attempt to repair. Directions for repairing faults should be limited to those tasks that a non-technical user could reasonably be expected to undertake.

Telephone, e-mail and Web contact details, for communicating a complaint or customer service query, should be provided in instruction media that can be referred to without operation of the product itself. A list of the locations and contact details of the supplier in the country or countries in which it is marketed shall accompany the product or be available on the supplier’s Web site.

5.9.7 Troubleshooting and repair by skilled persons

The following information shall, if relevant, be provided:

- list of indications for fault identification and its location;
- list of indications of normal operation;

- descriptions of built-in diagnostic systems to aid fault detection;
- drawings and diagrams enabling the troubleshooting task to be done effectively;
- directions for noting malfunctions of equipment, noting abnormal symptoms and indications, and recording operation of alarms and trips;
- directions for starting standby or alternative systems, and for shutting-down and isolating malfunctioning units;
- repairs and adjustments;
- aids for troubleshooting procedures, such as functionally identified maintenance system, fault step diagnosis, fault step and algorithms, or, in complex systems, fault trees and computer-based fault diagnosis;
- clear definition of troubleshooting and repair tasks that should not be attempted by the user, together with instructions on how to contact the supplier or others from whom technical assistance may be obtained; and
- name, address, accessible telephone numbers, fax numbers, and any other means of communication of the supplier or others from whom technical assistance can be obtained.

5.10 Maintenance of the product

5.10.1 General

Separate information shall be provided for maintenance that can be performed by skilled and non-skilled persons – preferably as separate documents or at least as separate paragraphs.

5.10.2 Product maintenance by non-skilled persons

If the user of the product can perform maintenance tasks without harm to the user, other people, or the product, the instructions for use shall include specific descriptions of these tasks and their nature and frequency.

Instructions for use shall provide a list of possible maintenance tasks with appropriate illustrations as required to allow users to perform the tasks effectively and without difficulty.

When certain maintenance tasks need to be performed more frequently than others, everyday maintenance tasks 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. 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 the user, those tasks shall be clearly identified and the user shall be instructed how to contact the supplier or others from whom technical assistance may be obtained.

5.10.3 Product maintenance by skilled persons

Information on maintenance by skilled persons shall include:

- the nature and frequency of inspections;
- safety precautions and warnings for maintenance carried out on running or live equipment;
- drawings and diagrams enabling the maintenance task to be done effectively;
- regular checking of warning devices;
- details of cleaning methods. Where there is a possibility of an incorrect cleaning or decontamination process or the use of wrong cleaning materials will create a safety

hazard or problems resulting from corrosion or weakening of structural parts of a product this shall specifically be mentioned;

- maintenance schedules and, if necessary, master schedules which incorporate details of all tasks required to be carried out at regular intervals;
- the name, address, accessible telephone numbers, fax numbers, and any other means of communicating with the supplier or others from whom technical assistance can be obtained.

5.10.4 Planned maintenance of industrial plants

An overall maintenance and service plan for an industrial plant shall be drawn up by combining the maintenance and service plans for all key components.

5.11 Supplied accessories, consumables and spare parts

5.11.1 Accessories

The following information, as required for each accessory, should be supplied in instructions for use:

- name, part number and whether basic or optional;
- illustrations to allow the user to identify the accessory and where to attach it;
- description of its function and purpose.

5.11.2 Consumables

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

- description and recommended quantity of consumables, the supplier’s model name or part number, any common commercial name (and, for materials, generic name);
- typical replacement frequency (in time or volume of usage);
- an illustration that allows the user to identify the consumables;
- an illustration to show the position of, or the access to, the consumables (in an exploded view if clearer);
- information for removal and replacement or refilling;
- information about disposal of removed consumables.

5.11.3 Spare/replacement parts

A list of replacement parts purchasable as spares shall be provided. The following information should, as appropriate, be provided for each part, together with an indication of the level of skill required to replace the part without causing potential hazards:

- its name, identification and serial numbers in the form used on the product and in commercial transactions;
- the supplier's part/type and version numbers as well as the name, reference and version numbers for branded parts, if different from the above;
- an illustration of the part and its position, preferably in exploded view;
- sources of supply as well as alternative sources of supply for spare parts;
- parts for which there is a refurbishing service available provided by the supplier or a service provider;
- an identification in accordance with IEC 81346 of components of complex products;
- an identification in accordance with IEC 81346 of locations where a specific spare part can be used as replacement;

- the year of manufacture or the year of expiry for the spare/replacement parts availability if not given in a separate document;
- information about disposal of removed spare/replacement parts.

5.12 Information on special tools, equipment and materials

Information on any special tools, items, or equipment required to deal with special conditions, but not used in normal operation, shall normally not be provided to non-skilled persons. Such information shall be provided only to skilled persons.

The information shall include descriptions of interconnections with accessories and other equipment, including indication of suitable accessories, detachable parts, and any special materials that may be used.

Methods to repackage shall be provided, if necessary, for replacing, repairing, reworking, and refilling the product.

Consumables, cleaning material, lubricant products and repair kits shall be identified, if applicable.

5.13 Information on repair of products and replacement of parts

5.13.1 Information on repair of products and replacement of parts by non-skilled persons

Information on repairing and replacing parts for consumers shall be provided if this can be undertaken without risk of harm to consumers, other people or the safe use of the product.

When the supplier and local law permit replacement of some parts by consumers, the following information shall be provided to consumers:

- the source of replacement parts;
- the method of repair or replacement; and
- the method for testing after the repair or replacement, if any test is required.

When the supplier does not permit the replacement of parts by consumers, information about the service agent(s) to contact shall be provided.

5.13.2 Information on repair of products and replacement of parts by skilled persons

Information on repairing and replacing parts shall be provided for skilled persons:

- to repair the equipment and/or to replace parts;
- to carry out tests that have to be performed after replacing a part.

5.14 Information required when the product is no longer needed

5.14.1 General

Instructions for use shall contain information relating to handling, recycling or disposal of the product after it is no longer needed.

5.14.2 Disassembly

Disassembly by the consumer shall only be permitted where this does not create a hazard.

Where appropriate, instructions for use shall include information, separately or in combination, on disassembly of the product and/or handling of any waste materials with due regard to safety and environmental considerations.

5.14.3 Recycling

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

5.14.4 Disposal

Instructions for use shall include important information for the user about waste disposal and environmental considerations.

If the product contains any hazardous substance, or if any hazardous substance is supplied together with the product, the necessary information on its constituents and the correct disposal procedure shall be given with due regard to safety and legal requirements.

5.15 Structure of instruction for use

5.15.1 General

Instructions for use that are lengthy or complex shall be clearly divided into convenient parts, and shall have a consistent format. Requirements for individual parts should be specified in relevant product standards or in technical documentation within an industry sector taking into account the provisions of this part of IEC 82079.

For instructions for use comprising multiple manuals, the information on the front covers and/or spines shall make it easy to distinguish one manual from another.

5.15.2 Page numbering

If instructions for use comprise more than two (printed) pages, the pages shall be numbered. It is recommended that they should be numbered as n of m where n is the actual page number and m is the total number of pages.

5.15.3 Table of contents

Instructions for use that exceed four pages shall have a table of contents unless it can be demonstrated not to be necessary.

Headings and page numbers appearing in the table of contents shall be the same as those used in the text.

5.15.4 Index

If instructions for use are lengthy and complex, an index of keywords presented in alphabetical order should be included. The index shall be referenced in the table of contents.

5.15.5 Technical terms, acronyms and abbreviations

Unavoidable technical terms, acronyms and abbreviations not readily comprehensible by the intended target group shall be listed and explained.

For consumer products it is useful to conduct empirical tests if it is doubtful whether technical terms are generally understood by the target group. A glossary is recommended when technical terms are often used in the instructions for use.

Consistent terminology shall be used in the instructions for use, on the product, on the packaging and, where relevant, in accompanying material such as manuals.

5.15.6 Graphical and tactile symbols and tactile dots

Graphical and tactile symbols and tactile dots shall be listed and explained.

5.15.7 Presentational conventions

Presentational conventions used in instructions for use shall be listed and explained, for example the use of a specific typeface for actions to be carried out by the user.

5.15.8 User controls and indicators

If applicable, instructions for use shall contain a description of the user controls and indicators applicable to the relevant component.

6 Presentation of instructions for use

6.1 Comprehensibility

6.1.1 Recognized communication principles

Within each section of instructions for use, the learning process demanded of the user should, as far possible, be broken down into a series of small steps. Building understanding in a continuous sequence may be reinforced by numbering operational steps and/or by referring the user (at each step) to an illustration representing each action visually or its effect schematically. Each step should provide a single action.

The function of information sections (for example, the description of the product or information about troubleshooting) should be readily identifiable and different types of information should be clearly identified.

For procedural instructions, preconditions for the sequence of necessary steps shall be given before the sequence of operation.

Where possible (and particularly for assembly) the user should be led to read a single instructional step, then perform it, appreciate the effect, then read the next step.

Methods for structuring the instructions for use should be used which support the correct use of the product ("what" should be done with the product and "how", in correct order). General aspects should be described in an overview chapter, specific aspects in the relevant context.

The use of illustrations increases comprehensibility of instructions for use. An effective balance of text and illustrations is recommended. Illustrations shall be provided with a unique number to which reference can be made in the text.

6.1.2 Style guide

A style guide should be established and followed throughout the entire instructions for use covering, for example:

- writing style (see Table 1);
- wording;
- consistent use of terms;
- way to address the readers; and
- design of text and page layout including selection of typeface and font size (see Table 2).

6.1.3 Structure

The wording should fit the structure which supports the various text functions. Such text functions are for example:

- subject (heading);
- description;
- goal;
- prerequisite;
- condition;
- action;
- result;
- warning;
- prompt and reminder;
- example;
- caption (addressing a figure or a table).

The use of a consistent structuring method is recommended.

Instructions for use should cover basic or normal functions first, and other functions later.

Headings shall be easy to understand and should preferably be short and numbered. As a structuring element, they shall serve as a guide as the user reads through the instructions for use, and shall help the user to locate the required information.

6.1.4 Consistent terminology

Terminology shall be used consistently according to an editorial style guide thus enhancing comprehensibility.

Consistent terminology shall be used in the instructions for use themselves, on the packaging, in other collateral materials and on the product itself.

6.1.5 Simple and brief

Information shall be as simple and as brief as possible, and shall be expressed in consistent terms and units. The sentence structure should be simple. Sentences should be short and shall be grammatically correct.

Cross references shall be kept to a minimum.

6.1.6 One sentence, one command

One sentence shall contain one command only, or at most a small number of closely related commands.

6.1.7 Rules for simple wording

The text of instructions for use shall be written in simple, clear, direct phrases within short sentences, thus following the principle “One expression, one simple meaning”. The logical structure of the text shall be clear.

Abbreviations and acronyms shall be avoided unless it can be assumed that they will be familiar to the intended users or the terms are explained when they first appear in the instructions for use or/and in a glossary.

The examples in Table 1 should be observed independent of the language used.

Note Translators of this part of the 82079 series may substitute examples of effective wording in Table 1 in the language into which translation is being made.

Table 1 – Writing style examples

Recommendation	Preferred	Not preferred
Use the active voice of verbs rather than the passive	Turn off power	Be sure that the power has been disconnected
Be assertive in using commands rather than weaker forms	Do not remove tabs	The tabs should not be removed
Phrase directions around action verbs rather than abstract nouns	Use, maintain, avoid	Utilization, maintenance, avoidance
Speak directly to users rather than saying what they might do	Pull black lever towards you	Users will pull the black lever away from the machine
Avoid double negatives	Fit only 3 A fuses	Fit no fuses other than 3 A
Avoid easily confused words (particularly with prefixes that look and sound alike)	Flammable contents High(/low) sensitivity	Inflammable contents Hyper(/hypo) sensitivity

6.1.8 Standardized safety signs and graphical symbols

Where appropriate, the use of standardized safety signs in ISO 7010 or graphical symbols for use on equipment in IEC 60417 and ISO 7000 shall be considered in order to convey important messages such as warnings.

6.1.9 Ergonomic principles

Instructions for use presented using electronic media, for example on-line or on-screen documentation (see 6.7), shall comply with the requirements of the ISO 9241 series.

6.1.10 Keeping the attention of the readers

If the readers find expressions that irritate them, they will be distracted from processing the information. At worst they may discontinue reading or disregard the whole text.

Disrespectful, prejudiced or patronising expressions, assumptions or stereotypes should be avoided, for example, those relating to older people, users with particular disabilities, gender-role stereotypes or assumptions about family/household structures.

Excessive warnings are not helpful in holding the attention of the readers. As far as possible warnings should be phrased so that they relate to events or errors users can foresee. For example instead of “Do not immerse toaster in water” advise “Keep internal parts dry when cleaning.”

Marketing and advertising messages (for example, unnecessarily repeating or emphasising brand names) shall not intrude into instructions for use.

Necessary statements in legal terms, for example statements relating to liability, shall be clearly distinguished and kept separate from other text in instructions for use. They shall be written in a way that allows users to follow the meaning and intent of such statements.

6.1.11 Proof reading

Instructions for use shall be proof-read by persons other than the writer or translator, preferably a native speaker of the final text, with knowledge of the product in question.

The assessment criteria are:

- wording according to style guide;
- correct spelling and punctuation;
- correct grammar;
- consistency of terms.

6.2 Legibility

6.2.1 Text font sizes and graphical symbol heights

Text fonts and graphical symbols used for information integrated in the product, of printed material and of computerized information shall be as clear and as large as practicable to ensure the best possible legibility for all users, including older users and users with visual impairment.

Recommended minimum text font sizes and graphical symbol heights are listed in Table 2.

The best possible legibility is achieved when optimizing the relationship between at least four variables including: type font, type size, number of characters per line (approximately 70 in Latin characters) and line spacing (minimum 120 % of type size in Latin characters).

Measures used to create emphasis shall be considered carefully so as not to reduce legibility. Bold letters, underlining, and if applicable, upper case and italic letters may be used to emphasize single words and phrases, but not to emphasize whole paragraphs or sections.

Where instructions for use present any of the text in a font size smaller than 10 point, or the legibility is reduced by other factors, such as low contrast, the supplier shall provide a larger printed version upon request free of charge.

For the benefit of consumers who are visually impaired, suppliers should offer options of access to all information in large print versions, and alternative media, for example, audio files or plain text files which can be read using Braille.

Table 2 – Minimum recommended text font sizes and graphical symbol heights
(to be continued)

NOTE The term "point" (abbreviated here to "pt") is a unit of measurement of type sizes and spacing. There are several kinds of standards. However, "DTP point" is adopted in this part of IEC 82079 which is 0.353 mm or 1/72 inches.

Product/ instruction document size	Location and role of instruction	High contrast dark text on light background	Low contrast colours or white on black	Complex character sets (for example Kanji)	Other remarks	Graphical symbols including safety signs	
						Symbols generally	Safety signs
Instructions for use viewed from up to 1 m distance on floor-standing products	Critical on-product markings	14 pt bold **BEFPR 68.39l,0 QGOC aeocld**	16 pt bold **BEFPR 6.83l,0_ QGOC aeocld**		Consider using large print fonts specially developed to help people with visual impairments to read signs and labels at 30 cm to 100 cm	As required by standards/regulations Otherwise according to viewing distance from which attention needs to be attracted or the symbol needs to be recognised. Less than 15 mm height unlikely to be sufficient for critical on-product markings	
	text	14 pt	16 pt				
Manuals, single-fold leaflets, & desk-top products	Critical on-product markings	14 pt bold **BEFPR 68.39l,0 QGOC aeocld**					
	Headings, warning phrases, decimals	12 pt BEFPR 68.39l,0 QGOC aeocld			Serif fonts may be used.	5 mm min height (or 14 pt) 	10 mm min height 
	continuous text	10 pt	12 pt			Do not use graphical symbols in continuous text	

Table 2 *(continued)*

<table>
<tr><th>Product/ instruction document size</th><th>Location and role of instruction</th><th>High contrast dark text on light background</th><th>Low contrast colours or white on black</th><th>Complex character sets (for example Kanji)</th><th>Other remarks</th><th colspan="2">Graphical symbols including safety signs</th></tr>
<tr><td rowspan="3">Hand-held products & multi-fold instruction sheets</td><td>Critical on-product markings</td><td>12 pt</td><td rowspan="2"></td><td rowspan="3">9 pt with 150 % line spacing
電気
規格</td><td rowspan="2"></td><td>5 mm min height</td><td>10 mm min height</td></tr>
<tr><td>Headings, warning phrases, decimals</td><td>10 pt
BEFPR 68.39l,0 QGOC aeocld</td><td>12 pt
BEFPR 68.39l,0 QGOC_ aeocld_</td><td>Use only sans serif fonts at this level and below.</td><td>pref min 5 mm;
4mm/12 pt if very simple</td><td>10 mm min height except*:
⚠</td></tr>
<tr><td>continuous text</td><td>9 pt
BEFPR 68.39l,0 QGOC aeocld</td><td rowspan="3">Not advised for text smaller than 12 pt</td><td rowspan="3">ELECTRONIC, AUDIO, OR LARGE PRINT MEDIA SHALL BE AVAILABLE ON DEMAND
(for example from Web site or point of sale)</td><td colspan="2">Do not use graphical symbols in continuous text</td></tr>
<tr><td rowspan="2">Very small products and packaging (for example, printable surface < 10 cm^2)</td><td>Markings, headings, warning phrases, decimals</td><td>8 pt
BEFPR 68.39l,0 QGOC aeocld</td><td>8 pt with 120 % line spacing
電気
規格</td><td>pref min 5 mm;
3 mm if very simple ☺</td><td>10 mm min height*</td></tr>
<tr><td>continuous text</td><td>6 pt
BEFPR 68.39l,0 QGOC aeocld</td><td colspan="2">Do not use graphical symbols in continuous text</td></tr>
</table>

*except the general warning sign (ISO 7010-W001) accompanying text warning, which may be 5 mm minimum as a marking and 3 mm minimum in headings to text.

6.2.2 Maximum brightness contrast

For printed embossed or engraved instructions for use, the brightness contrast (ratio of reflectance of the bright part over reflectance of the dark part) shall be as high as possible.

Contrast requirements for text displayed on visual display terminals shall be in accordance with ISO 9241-300.

6.2.3 Legibility standards

Where national standards contain detailed information and specifications relating to legibility, and especially on the relation between type size and reading distance, these should be taken into account when producing instructions for use.

6.2.4 Layout

The layout shall make it easy to distinguish the various elements of information. Text blocks should have appropriate proportions and make effective use of white space.

The layout shall facilitate differentiation between the various types of information to be communicated, for example:

- subject (heading);
- description;
- action;

- warning.

6.2.5 Instructions for use on surfaces of products or packaging

The location of on-product instructions for use and the angle between their surface and the vertical plane shall be such that they can be easily read and understood by users from their position(s) during use of the product. Where a product is intended for target groups with particular needs, this should be taken account when determining the location of instructions for use.

Instructions for use on packaging should be visible and legible when the package is in the upright position.

The advantages in terms of durability and production of incorporating instructions for use in the material of the product should be weighed against the disadvantages of loss of contrast and legibility. Incorporating instructions for use in the material of the product generally produces an inferior result to that of good quality printing (See also 6.8.4 on the permanence and visibility of warning messages).

6.3 Illustrations and supporting text

6.3.1 Quality

Attention shall be paid to quality and clarity of illustrations, and to choosing where photographs, line drawings or CAD-generated illustrations are most informative. Information in illustrations should complement information presented in other forms and be comprehensible. Illustrations should not be overloaded with information. Visual representations of complex or specific information need to be selective in what detail they show (for example, cross-sections, exploded views, conceptual diagrams and cartoon strips).

In contrast to graphical symbols including safety signs, which should be designed for immediate recognition at a distance, illustrations should be composed so as to focus attention on important details and to be self-explanatory. Illustrations should be chosen or designed individually for each purpose by a competent graphic artist or technical illustrator.

Whenever appropriate, text and illustrations shall be used together, each supporting the other to make the instructions for use more comprehensible. Where illustrations need explanatory texts, they shall be placed adjacent to one another so that they are perceived together (see also 6.3.4). Information in illustrations and supporting text should be identical and clear. A sequence of illustrations should be logical and comprehensible. Illustrations shall be comprehensible at the expected viewing distance.

In addition to the recommendations in 4.8.3.1, illustrations which fold out may be placed on pages of the leaflet or manual, so that they can be seen adjacent to different pages of text at different times.

6.3.2 Following a sequence of operations

If a sequence of operations is being described, text and illustrations shall follow the same sequence. Illustrations shall be placed as close as possible to the text to which they relate, so that they can be viewed adjacent to the relevant text.

6.3.3 Illustrations with captions

Illustrations should be supplemented with captions. There shall be a clear relationship between the illustration(s) and the caption text. The caption should be numbered for clear reference from the main text.

6.3.4 One illustration, one item of information

Illustrations should normally provide only information relevant to describing the related function. Illustrations or detailed part(s) of these should be repeated in the relevant part(s) of instructions for use as needed to assist the user. Information overload in illustrations shall be avoided.

However, where proliferation of illustrations would be cumbersome, several items of information may be presented in a single illustration if this will be easier to understand (for example, exploded or sectional views used to illustrate several steps in a procedure).

6.4 Graphical symbols, including safety signs

6.4.1 Graphical symbols for use on equipment, including safety signs

Graphical symbols for use on equipment, including safety signs, shall comply with ISO 7010, IEC 60417 and ISO 7000.

6.4.2 Explanation of graphical symbols

Graphical symbols, pictograms, markings and pictorial symbols placed on the product itself or in accompanying materials shall be explained in the instructions for use.

6.4.3 Graphical symbols for diagrams

Graphical symbols for diagrams shall comply with IEC 60617 and ISO 14617.

6.4.4 Minimum sizes of graphical symbols

Minimum sizes for graphical symbols in different situations are listed in Table 2. They should be complied with unless smaller sizes are unavoidable because of the dimensions of the product.

6.5 Use of tables

Tables are frequently used in instructions for use in order to present the information to the user in a more convenient form. Tables shall be presented next to the relevant text.

Tables are useful for different purposes, for example, for referencing and troubleshooting. They shall be set out clearly, informatively, presented in a consistent design and be repeated when necessary.

6.6 Use of appropriate document types

Instructions for use should use those document types which suit best the intended purpose. An overview of established document types is given in IEC 61355. Existing document types for plants, systems and equipment shall be used.

Examples:

- When a specific sequence of operations needs to be documented for a safe and correct use of a product, it is recommended that a flow chart is used.
- When a specific safety function of a product needs to be documented, it is recommended that a circuit diagram is used and the related circuitry is highlighted.

6.7 Use of electronic media

6.7.1 General

Electronic media are any modes of communication that can be used to convey the contents of documentation in the form of on-screen displays and/or audibly. These include:

- audio sources;
- video sources;
- combined video and audio sources;
- printable versions of documents which are made readable on-screen through a file exchange format in which the layout matches that of the printed version;
- interactive multimedia applications that combine static elements, for example text, images, with dynamic elements, for example video, audio, animations, dynamic symbols, spoken language. They may operate at the same time and users can control them interactively;
- on-line context sensitive help systems. These may contain elements of interactive multimedia applications as described above. Furthermore they can offer numerous access and search options;
- Web based collaboration applications (like blogs and wikis) which support the creation of content by a virtual team or community.

Instructions for use delivered via electronic media shall take maximum advantage of the chosen media. However, like printed instructions for use, they shall be readily comprehensible by users and follow the requirements of this part of IEC 82079 (for example, concerning languages, legibility and illustrations).

Accessibility is an important consideration for instructions for use. Care shall be taken to ensure that all users can obtain the information they need. Electronic media should use a medium which would allow the addressing of the widest possible audience, but shall focus on the user, be easy to use and promote comprehension. For example, audio and video or multimedia DVDs should provide a range of sound tracks and sub-title options including a sign language feature for consumers with a hearing impairment and audio description for those with sight impairment.

The Internet potentially offers access to information for users with the greatest range of individual needs, but it is important that barriers to access are not inadvertently introduced by, for example, difficult methods of navigation or use of animations requiring special software. Therefore, when any part of the instructions for use or related information is made available on the Internet, both the presentation of it and all necessary navigation to it should conform to the Web Content Accessibility Guidelines (WCAG) recommended by the World Wide Web Consortium (W3C®).

Where instructions for use are provided ONLY electronically (that is, with no print version available) this shall be clearly indicated at the point of sale and on the packaging, together with the media format and the type of player required to access the instructions for use (for example, personal computers, CD audio or DVD video players).

NOTE Legal regulations may require printed instructions to accompany some products.

6.7.2 Didactic requirements

The didactic advantages of electronic media compared to print media should be fully utilized for the achievement of better communication results. However care should be taken that users are not overwhelmed by the duration, information density or complexity of electronic sequences.

Therefore:

- instructions in electronic media shall follow the order of activities that the user has to perform;
- if complex processes are to be explained, for example, difficult maintenance and repair tasks, a sequence of suitable visual and auditory elements can facilitate the understanding of the user;
- the requirement for conveying safety-related information in electronic media, particularly in multimedia applications, shall be the same as for printed media (see 6.8).

Animation sequences may enable the amount of other visual information to be reduced to the basic features needed. Animation sequences shall have synchronized spoken accompaniment or written text.

If advertising or promotional content is included in electronic media, it shall be kept clearly separate from the instructions for use, and viewing of such content shall not be required prior to viewing the instructions for use.

6.7.3 Requirements for downloadable instructions for use

Downloadable instructions for use shall be provided in a form that allows display without further changes on commonly used operating systems and readers. In this case, Web sites from which instructions for use can be downloaded shall:

- provide either the software needed, or a link for download of the required viewing software;
- allow downloading at any time.

6.7.4 Requirements for user interaction

Electronic media applications shall take advantage of dynamic navigation and presentation devices to facilitate rapid location, comprehension and, where appropriate, printing of necessary information. Therefore:

- electronic media applications shall provide a (preferably tree-like) navigation system that facilitates free user movement within the application, as well as access to all individual portions of the application. Points of reference shall facilitate constant user orientation, and make it possible to return to fixed starting points at any time;
- appropriate navigation elements such as menus, buttons, hyperlinks, breadcrumbs and bookmarks shall be provided to enable user orientation and interaction with the system. Furthermore, so called hot spots, that is, areas for interaction, may serve as entry points for submenus;
- especially for on-line help applications, but also for other advanced multimedia applications, access to topics may be realized using electronic search functions. The most important of these are tables of contents, keyword searches, full text searches, natural-language searches and catchword searches;
- to maintain layout clarity for extensive sections of text, texts should be embedded behind clickable subheadings (hot spots). When required, the user can activate these and display or hide individual sections;
- print functions may be provided with electronic printable versions of documents as well as on-line help applications. Printable versions shall adapt or exclude multi-media applications and dynamic Web page elements that printed pages cannot represent;
- instruction on the use of software shall, as far as possible, be integrated into the user interface. Where integration is not possible, for example, because of the extent of the information, access shall be directly available, for example, via a help button.

6.8 Making safety-related information prominent and conspicuous

6.8.1 Making text conspicuous

Safety related information shall be emphasized by use of larger and/or different type font or size (see 6.2.1), by use of colours (see 6.9), graphical symbols including safety signs (see 6.4) or other means of making it conspicuous.

6.8.2 Making illustrations conspicuous

Illustrations within safety-related information shall be emphasized by use of colours, shapes, positioning (see 6.3) or other means of making them conspicuous.

Packaging and containers with hazardous contents may require tactile danger warnings if there is a possibility that the contents will be mistakenly misused by people unable to see a visual warning. In those cases ISO 11683 shall be applied.

6.8.3 Design and placement of warning messages

Warning messages shall be designed consistently and shall be made conspicuous and prominent. In the formulation and design of warning messages, the following shall be taken into account in order to achieve maximum effectiveness:

- start with signal words (see 6.8.6);
- limit the text and/or illustrations to the essentials;
- make the location, content and style of the warning messages conspicuous in accordance with 6.2;
- ensure that warning messages are visible to the user and to any other people exposed to hazards, from their position during use (see also 6.2.5), and at the right time;
- explain the nature of a hazard and, if appropriate, its causes;
- provide clear guidance on how to avoid a particular hazard;
- place warning messages as determined by the risk assessment. Warning messages repeated too frequently may reduce their effectiveness;
- state the probable consequences of not avoiding the hazard without playing down the consequences.

6.8.4 Permanence and visibility

Warning messages for special hazards leading to an increased risk when the instructions for use have not been followed shall continue to be clearly visible to users during the life of the product. When colours are used in warning messages, discoloration and fading shall be taken into account.

6.8.5 Making warning messages prominent

Warning messages about hazards or restrictions on use (for example NOT SUITABLE FOR CHILDREN UNDER THREE YEARS OF AGE) are crucial for safety and shall be given prominence at least equal to other instructions in documents issued with the product.

6.8.6 Signal words

Signal words are set out in ISO 3864-2, as follows:

DANGER: the signal word that indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury,

WARNING: the signal word that indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury, and

CAUTION: the signal word that indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

The general warning sign as in ISO 3864-2 composed of an equilateral triangle surrounding an exclamation mark in specified safety colours as in ISO 3864 should precede the signal words DANGER, WARNING and CAUTION.

6.9 Colours

6.9.1 Consistency

The use of colours shall be consistent, in addition to being functional and systematic. Where instructions for use include safety signs in colour, they shall conform to requirements, including colours, specified in the ISO 3864 series.

6.9.2 Colour perception considerations

It should be kept in mind, that a sizeable percentage of users have some form of colour-deficient vision. Therefore, information shall not be presented by the use of colour only; colour is an additional means for the presentation of instructions for use and for the improvement of understanding.

6.9.3 Photocopying/printing considerations

When selecting colours, care shall be taken to select contrasting colours which will remain distinct even after black and white photocopying or printing on a monochrome printer.

7 Evaluation of conformity to this part of the 82079 series

7.1 Claiming conformity to this part of the 82079 series

Claims of conformity to this part of the 82079 series shall be dependent upon the supplier maintaining the availability of evidence that the instructions for use (including safety information) have been evaluated either by expert desk research or by an empirical evaluation, for example, a usability test, following the requirements and guidance in Annexes A, B and C.

The checklist in Annex B lists types and items of information content that may (depending on the type of product) need to be supplied to some or all users by means of the instructions for use. Conformity could be indicated by items being ticked off one by one if they have been adequately covered.

The checklist in Annex C summarizes the criteria against which to evaluate the effectiveness of instructions for use in communicating information and predicting their effectiveness in influencing user behaviour. For most products 100 % effectiveness of instructions for use can neither be achieved nor be measured qualitatively, and so in practice assessment shall be based on subjective judgements. The checklist may also be used as a guide to criticizing items in the instructions for use that are shown not to be effective, rather than just a list of criteria against which to award marks to the document as a whole. Constructive criticism needs to be very specific about the section in need of improvement and the reasons why it is not considered to be effective (and preferably how it could be revised to become effective).

Neither checklist should be assumed to be comprehensive for every type of product. They may need to be supplemented and/or amended in accordance with relevant product standards or (in the absence of such standards) in accordance with standards dealing with comparable products or functions, or in any other appropriate way.

Where a regime of independent certification of conformity is required (whether by legislation, product standards or contractual specification), independent certificates shall state:

- what documentary evidence (that is, research reports or evaluation reports) was submitted by the supplier after the instructions for use were assessed;
- whether the evidence referred to the above bullet was based on expert desk research or empirical evaluation;
- the name of the body or person who made these assessments.

7.2 Documentary evidence of evaluation

Research reports or evaluation reports shall state:

- what instructions for use and retail packaging were submitted for examination;
- the language of the instructions for use which was assessed and approved in compliance with this part of IEC 82079;
- whether the product sample was supplied fully assembled or was assembled as part of the assessment of the instructions for use;
- which aspects of the assessment were based on expert desk research and which on an empirical evaluation;
- the name of the body or person(s) who made the assessment;
- the name of the body or person(s) responsible for checking and verifying each translation.

No claim of compliance to this part of IEC 82079 shall be made unless the instructions for use have been evaluated by suitably qualified experts. These experts shall not have been previously involved in the writing of the instructions for use or in the development, design, production or marketing for the product in question. See also Annex A.

NOTE Depending upon the complexity of the product and the extent to which safe and correct use depends on conveying information to the user, instructions for use may need to be evaluated during the development stage and/or there may be a need for internal evaluations and revisions of draft instructions for use to optimise them before they are submitted to a third party for evaluation.

Annex A
(normative)

Evaluation of instructions for use

A.1 General

Instructions for use should be evaluated in accordance with the following criteria.

A.2 Choice of methodologies for evaluation

Depending upon the complexity of the product and the importance of conveying relevant information to the user in order to ensure safe and correct use, assessment should take the form of:

- desk research by experts outside the product development team;
- interactive empirical evaluation of the instructions for use by a panel covering the range of potential users and/or target group(s);
- a combination of both.

A.2.1 Desk research by experts

Only suitably qualified experts who have no connection with any aspect of the design, production, or marketing of the product and its instructions for use may carry out assessment by desk research.

The actual product (and preferably packaging) shall be available to the researcher or independent evaluator, not just the instructional media.

Comprehensiveness checks should be carried out preferable using the checklist in Annex B.

Effectiveness checks should be carried out preferable using the checklist in Annex C.

It may be necessary for desk research to be supplemented by independent third-party checking; for example, where provision of information at the point of sale is a requirement.

The effectiveness of each translation shall be proofread and evaluated for comprehensibility and linguistic accuracy using the relevant criteria listed in the checklist in Annex C as a guide for comments.

A.2.2 Empirical evaluation by potential users and/or target group(s)

See Annex E for guidance on empirical methods.

Annex B
(informative)

Checklist for conformity and comments

NOTE The checklist contained in Table B.1 is not intended to be comprehensive.

Table B.1 – Checklist for conformity and comments

Items to be checked		Relevant clause	Compliance	Comments
1.	**Identification**	4.8.1, 5.2, 5.3		
1.1	Brand and type designation			
1.2	No. of model, version, type, subgroup			
1.3	Expiry date			
1.4	Up-to-date check / for example. date of publication of the handbook coverage of product modifications			
1.5	Supplier and provider of special tools, material, etc and technical assistance			
1.6	Contact details of supplier/service agency			
1.7	Certification references			
1.8	Requirements of specific product standards			
2.	**Technical specification of the product and its residual hazards**	4.3, 4.5, 5.3, 5.5, 5.9.4		
2.1	Functions and range of application			
2.2	Safe and correct use; principal residual hazards, general warnings about product or use			
2.3	Dimensions — mass — capacity			
2.4	Chemical composition			
2.5	Performance data			
2.6	Supply data for power, gas, water and other consumables (for example. detergents, lubricants)			
2.7	Energy consumption and methods of measurement used			
2.8	Emission of noise, waste water, etc., with methods of measurement used			
2.9	Expected product life and intended disposal			
2.10	Information on personal protection (for example. clothing)			
2.11	Information on dangers to particular vulnerable groups (for example. potential allergy or strobe effects)			
3.	**Preparing the product for use**	5.8		
3.1	Safety precautions before installation			
3.2	Unpacking			
3.3	Safe disposal of packaging			
3 4	Installation and assembly (for example. special tools, space for maintenance and repair)			
3 5	Storage and protection during intervals in normal use			
3.6	Repackaging to prevent damage in transport			

Items to be checked	Relevant clause	Compliance	Comments
3.7 Information on operations to be carried out only by skilled persons. Separation of this information from instructions for use to users. Comprehensiveness of instructions for use to experts			
4. Operation of products – structure from basic to sophisticated operations/functions – meaningful separation between basic product and optional modules 4.1 Basic functions – Complete for correct intended use – Complete for safe intended use – Complete for reasonably foreseeable misuse – Conformity with minimum list in relevant product standard(s) 4.2 Secondary functions (identical to 4.1 above) 4.3 Optional modules and extras 4.4 Personal protection 4.5 Quick references – by reminder cards, stickers or labels – by reference to handbook, etc. 4.6 Disposal of waste products	5.9		
5. Information needed by user 5.1 Explanations of visible and audible signals 5.2 Distinctions between characteristics of normal and faulty/dangerous operation 5.3 Trouble-shooting advice (for example. in the form of Frequently Asked Questions and fault detection procedures) – intelligible to consumers and paying due regard to safety	4.8.2.4, 5.9		
6. Maintenance of the product 6.1 Safety precautions (for example. personal protection, special tools) 6.2 Product maintenance by non-skilled persons 6.3 Product maintenance by skilled persons 6.4 Safety/deterioration checks during maintenance	5.10		
7. Critical safety and health information 7.1 Warning messages – correct locations • on product and/or • on packaging and/or • in instructions for use – if relevant, visibility at point of sale – correct use of terms – correct use of signal words – use of simple/standardized phrases – durability of warnings – conformity with requirements in relevant product standard(s)	4.7.6, 5.5, 6.8		

Items to be checked	Relevant clause	Compliance	Comments
7.2 Safety signals 7.3 Information on residual risk 7.4 Safe disposal of product at the end of its useful life 7.5 Environmental impacts of using the product			
8. Consistency in design of information and of whole 'product' offered	4.1.2, 4.1.3, 4.7.2, 5.15, 6.1, 6.2.5		
8.1 Integrated design of product and instructions for use – No compensation for design deficiencies 8.2 Consistent terminology on the product itself; on the packaging; in accompanying material, on Web site resources and in marketing media 8.3 Structure of text and graphics – structure follows communication principles – meaningful headings used – unnecessary material excluded to avoid information overload (for example. sales promotion, extensive repetition, too many documents) 8.4 Location(s) and presentation of instructions for use 8.5 Numbered pages and/or paragraphs, with table of contents and/or index appropriate to length and complexity of text. Use of keywords			

Annex C
(informative)

Checklist for communication effectiveness

The list contained in Table C.1 offers criteria for subjectively evaluating each individual item in the instructions for use being assessed – e.g. each on-product warning, each paragraph in leaflets and each graphic. It is only necessary to record comments on those items or sections considered to be in need of improvement. The evaluations should be listed giving the reasons why the item is not considered to be effective (and preferably how it could be altered to become effective).

NOTE This checklist is not intended to be comprehensive.

Table C.1 – Checklist for communication effectiveness

Issues that may need to be addressed		Relevant clause	Evaluation	Comments
1.	**Target groups**	4.1.1, 4.4, 4.7.3, 4.8.2, 4.8.3, 5.14.1, 6.2.5		
1.1	Target group/s specified			
1.2	Instructions for use adequately presented for target Group/s			
2.	**Location and medium**	4.7.2, 5.15, 6.1.1, 6.7		
2.1	Placement on product, on packaging or in accompanying media meets needs of availability and durability			
2.2	Alerting function is appropriate to user's needs (prominence/ visibility distance, etc)			
2.3	Place in order or sequence with respect to other information following communication principles			
2.4	Grouped under appropriate heading and found in index			
2.5	Instructions for use and supporting media available on supplier's Web site to users with a wide range of individual access needs			
3.	**Legibility of text**	6.2		
3.1	Clear typeface and adequate font size (depending on reading distance)			
3.2	Line length and line spacing			
3.3	Contrast with background			
3.4	Effective use of white space			
3.5	Durability of legibility of on-product (or on-packaging) text			
4.	**Wording and structure of text**	5.15, 6.1		
4.1	Text/use of words			
	– words and phrases not complicated or over-sophisticated			
	– short phrases			
	– one sentence-one command. Not too much information in one sentence			
	– direct active voice and assertive commands			

Issues that may need to be addressed		Relevant clause	Evaluation	Comments
4.2	Terms used for features and user actions – terms familiar to consumers used if possible – technical features and terms well explained – consistent use of terms			
4.3	Communication principles – encouraging quick reactions (for example. simple and easy information for an emergency) – setting out learning process for complex functions – answering the questions WHERE? WHO? WHAT? WHEN? HOW? WHY?			
5.	**Multiple language variants**	4.8.3		
5.1	Clear differentiation/ identification of languages			
5.2	Each language version checked by a native speaker for comprehensibility and absence of linguistic errors			
6.	**Illustrations**	6.3		
6.1	Clarity of features and actions illustrated at intended viewing distance (lack of ambiguity; self-explanatory without text whenever possible)			
6.2	Sufficient number of illustrations for each one to provide clear and specific information			
6.3	Illustrations supported by clear and helpful captions			
6.4	Clear connections or cross-references between text and illustrations			
6.5	Can be viewed adjacent to relevant text when necessary			
6.6	Repeated illustrations where necessary			
7.	**Use of graphical symbols**	6.1.8, 6.2.1, 6.2.5, 6.4		
7.1	Adequate size to be comprehensible at intended viewing distance			
7.2	Standardized symbols used where possible (in standard colours)			
7.3	Standard design principles (for example. shape and colour) followed for any new symbols			
7.4	Each symbol clearly explained in text			
7.5	Durability of on-product (or on-packaging) symbols			
8.	**Tables, conceptual diagrams and flow charts**	6.5,6.6		
8.1	Provided and located where appropriate			
8.2	Clearly set out and informative			
8.3	Repeated tables, diagrams and flow charts where necessary			
9.	**Use of colours**	6.9		
9.1	Functional			
9.2	Clear and easily distinguishable			
9.3	Consistent			
10.	**Explanation of visual and audible signals**	4.8.2.4, 5.9.4		
10.1	Clarity of information provided to users			
10.2	Lights, sounds, text displays (or other indications) that may be given by the product at each stage are explained and referred to at each relevant point in the text			

Issues that may need to be addressed		Relevant clause	Evaluation	Comments
11.	**Instructions for use of electronic media**	6.7		
11.1	Indicate whether supplementing or replacing instructions for use in text			
11.2	Follow structure and language of text except when this is unsuitable to medium			
11.3	Offer multi-lingual and text/audio options			
12.	**Durability**	4.7.4		
12.1	Those items of instructions for use that need to be kept for reference or new users should be in media that offer adequate provision against loss or deterioration in expected (normal) life of product and discouragement of their disposal.			

Annex D
(informative)

Planning the preparation of instructions for use

D.1 General

This annex provides guidance on planning the preparation of instructions for use. This guidance is based on an example of a plan that includes typical procedures for preparing instructions for use from conception to publication, and is composed of the three phases planning, development and optimisation.

D.2 Restrictions on planning the preparation

The time, resources and priority accorded to the preparation of instructions for use can affect the quality and effectiveness of the information provided for users (for example, if planning is not begun until the product is being manufactured, or the writers are untrained or evaluation is simply a rubber stamping exercise). It is the responsibility of Senior Management to arrange the resources, time plans and quality targets so as to enable the planning, preparation and delivery of effective instructions for use.

a) Senior Management should ensure that the development of instructions for use is considered in parallel with the development of product design and marketing, so that (for example):
   - the choice of medium /media to be used to convey instructions for use is made early in the design process (see 4.7.3);
   - detailed lists of the specific content that will need to be included (instructions, warnings and user information – see section 5) can be compiled throughout the development of the product;
   - locations where on-product information will need to be presented should be allowed for in the exterior design and surface styling of the product and packaging (see 6.2.5);

b) Senior Management should arrange availability (through combination of staff resources and access to external consultants) of all the skills and experience necessary to prepare instructions for use.

Depending on the product, these may include:

- technical document writing;
- human error/ergonomics expertise;
- graphic art creation;
- design/creation of electronic instructional media;
- thorough understanding of the product’s development and intended functions;
- scientific/technical knowledge and experience necessary to analyse hazards and anticipate damage, wear and faults likely to develop during use;
- legal compliance and product liability expertise;
- technical translation competence for each language intended to be used.

A writer who is initially unfamiliar with the product but familiar with the language needs of the target group will be in the best position to take into account the needs of first time users.

c) Senior Management should decide (at an early stage) the method of evaluating the draft instructions for use and the agency or individuals who will undertake it, so that sufficient

time can be planned for this without delaying production, packaging or meeting legal and contractual requirements.

D.3 Planning preparation in detail (example)

A single example cannot give comprehensive information covering all possible requirements, therefore each step listed here has to be checked against the appropriate requirement depending on complexity, risk, legal issues, etc. This example is for a fairly large scale and comprehensive project, it may nevertheless prove helpful to writers of instructions for use of the more simple products by illustrating the range of processes that may need to be planned.

During the process of creating instructions for use several steps should be considered. The following describes steps which can help ensure that instructions for use are well thought out and provide users with the information they require. The steps described here are intended to be adapted and completed according to the requirements of the party responsible for the development of the instructions for use.

a) Analyses, define general conditions

To meet all requirements and ensure that instructions for use are fit for purpose, relevant sources, such as legal requirements, contracts and standards should be investigated. This will provide the basis for the preparation of a list of requirements which the instructions for use shall satisfy. The following should be analysed:

- the product to which the instructions for use relate: aim and function of the product, similar products and their instructions for use, structure of the product, residual risks (from risk assessment), possible problems and troubleshooting, spare parts and options, compliance and conformity, product life;
- the proposed market(s) in which the product is going to be used: attributes of the market(s), channels of distribution of the product;
- all legal and normative requirements for all markets, which have to be fulfilled. Usually the legal and normative documents which apply to the product will be known to the product developer;
- the relevant target groups: Intended users, and other persons who are going to be instructed in the use of the product in question.

After completing the above analyses a detailed list of requirements should be drawn up before beginning the preparation of documentation.

b) Planning and project management

The development of instructions for use requires special project management and project communication. Tasks, responsibilities, authorization and milestones should clearly be defined. An editorial deadline may be helpful to ensure that all relevant information is provided in time.

c) Conceptual design

Instructions for use should be developed on the basis of a well-planned concept. A concept is needed to assure consistency and accessibility of the information.

Components of a conceptual design are, but are not restricted to:

- guidelines and definition of the intended information quality;
- type and structure of the documents to give the user an optimal access to the information;
- combination of more than one document, if applicable;
- use of text, types of visualization and the coordination of text and visualization;
- media concept;

- media-specific layout and navigation;
- information types (for example. action sequence, component description, screen description, maintenance plan, trouble-shooting table, safety note, warning message) and their communication patterns (definition, structure, phrasing and authoring rules);
- if the instructions for use are made up of information modules: description and types of modules;
- way of using cross references and links;
- single-source concept if applicable;
- language and general text production rules;
- terminology and its use in the instructions for use;
- glossary and index, where terminology is of outstanding importance;
- globalization and internationalization, preparation for translation and localization.

The concept should be defined and well explained with worked-out and tested examples in an in-house style guide. Especially if the instructions for use are to be produced by a team of technical writers and/or over a longer period of time, a style guide and corresponding training for the technical writers is necessary to assure quality and consistency. The style guide should be presented in a form which makes it easy to use during editing and writing.

Usually a concept is defined for a series of instructions for use. The concept itself should be periodically improved.

d) Instructions for use as a part of a product

The development of instructions for use is an integral part of the development and design of the product.

Especially with respect to safety, the developer of instructions for use should be involved in the risk assessment to make clear the limits of instructions for use, to work out the need for design safety, and to get an optimal interplay of the means of construction, for example, inherent safety, safety devices, safety equipment, user interface design, and information such as warning messages, safety notes, training, packaging.

All available sources of feedback from users should be searched for indications of shortcomings in instructions for use supplied with previous similar products, for example, customer complaints, service reports, analyses of causes of accidents and injuries, and reviews of products posted on the Internet.

Wherever skilled persons are required to install, operate or maintain a product, the text shall state that this is an absolute requirement for safety and/or technical reasons and that no other people shall assemble, operate, maintain or disassemble the product (see 5.9, 5.10 and 5.13). The qualifications and skills required of the people concerned are to be clearly stated in the instructions for use or other written documents relevant.

e) Research

Research is a crucial factor in the development of instructions for use. If possible the product should be available for the technical writers to assure correct and adequate instructions for use.

Research interviews should be well planned. Interviewed developers should have the necessary resources and enough time to give all information properly.

Product developers should have a duty to deliver information when the product is going to be changed. A proper change process should be put in place so that the instructions for use can be amended when necessary.

It should be made sure that results from surveillance (for example. complaint management, service, and publications) with effect on the instructions for use will be taken into account.

Where existing information is to be re-used it should be verified to ensure relevance and accuracy before publication. If necessary such information needs adaptation.§

f) Content creation

Content should be created on the basis of the concept and the research. Chapters and sections should be planned in a table of contents. Every chapter and section should be assigned to a single information type. Such a plan may serve as a basis for documentation made up of information modules.

Check lists and tools for authoring assistance are helpful to assure correct terminology, phrasing, structure and completeness of information. Authoring tools and editors should support authoring as good as possible.

Early quality control and user tests of draft versions should be performed to reveal and avoid failures at an early stage of the development of the instructions for use.

g) Quality Reviews

Instructions for use should be carefully reviewed according to the requirements and the style guide by a person skilled in the area of technical communication or with at least 5 years' experience in that area. Enough time should be scheduled for this reading and the following editing.

Reviews for technical correctness should be scheduled and performed.

If the requirements are not met by the instructions for use a decision about further editing is necessary. The intention of no failure should be aimed for.

h) Quality assurance

Empirical evaluation (user testing) should show whether the instructions for use achieve the aim. User testing should be performed in the development of the whole product including the instructions for use. All improvements should be incorporated within the requirements, quality assurance and style guide to gain a continuous advancement in instructions for use quality. Change lists may be used to organize improvements.

i) Translation

In most cases translation cannot be of higher quality than the source text. So a high quality and translation-adequacy of the source text is of paramount importance for the quality and safety of the translated text.

Translation projects should be well planned and managed, including a linguistic and a technical review by persons who have the necessary skills. Appropriate standards for translation services should be taken into account.

j) Media production

The produced (for example, printed) instructions for use should be usable for the expected life time of the product (see 4.7.4). Printed instructions for use should be printed on durable paper.

Annex E
(informative)

Empirical methods supporting the preparation of instructions for use

E.1 General

A variety of empirical methods can be employed when preparing instructions for use:

- opinion polls (written interviews, oral interviews, focus groups);
- usability testing;
- self-assessments and checklists;
- expertise, expert reviews and certification;
- independent award or merit schemes;
- complaints management, hotlines and service information.

E.2 Methods

E.2.1 Opinion polls

	Written Interviews	Oral Interviews	Focus groups
Scope / Objectives	• Analysis of satisfaction • Target group analysis • Identification of information about use; for example why, where, how often • Identification of users' needs	• Assessment/evaluation of documentation regarding handling of and working with the instructions for use • Comparison of different documents • Small tasks for appliances can be integrated	• Identification of users' needs • Assessment/evaluation of the documentation regarding handling of and working with the instructions for use • Comparison of different documents/ documentation styles
Pros	• Low-cost • Geographically broad spread of target groups reachable • Determination of frequency • Statistically representative data	• Substantial avoidance of misunderstandings regarding the interpretation of the questions • Interviewee can make proposals for change • Background information and explanations possible	• Opposing opinions can be discussed • The creative potential of the group can create proposals for solutions • Easy and practical
Cons	• Limited integration of examples of the instructions for use • Only limited explanations and background to the answers • Questionnaires should be developed by experts	• Time consuming and relatively expensive • Availability of interviewees may be limited • Trained person as interviewer needed • Representativeness of results not always guaranteed	• Pressure of the group can restrict expression and narrow perspectives • No statistical representativeness • Only qualitative results

E.2.2 Usability-testing

Scope/Objectives:

- development of new instructions for use/documentation;
- testing of instructions for use/documentation or comparison of different documents and
- testing of comprehensibility and usability.

Pros:

+ reliable results about the usability of a documentation and
+ weak points are detectable quickly.

Cons

– special laboratory techniques are needed;
– statistical representativeness of the results should be proven and
– comparatively cost-intensive.

E.2.3 Self-assessments and checklists

Scope/Objectives:

- assessment of quality according to technical criteria and
- checklists according to standards.

Pros:

+ low-cost;
+ comparison of different instructions for use with the same criteria possible and
+ process and changes over time resp. steps for optimizing can be detected.

Cons:

– despite objective assessment criteria, subjective differences in assessment cannot be excluded;
– no information ascertainable about customers' wishes and requirements and
– know-how needed for development of assessment.

E.2.4 Expertise, expert reviews and certification

Scope/Objectives:

- assessment of instructions for use according to defined criteria;
- analysis of weak points and
- arrangements regarding legal disputes.

Pros:

+ expert assessment;
+ variable range of test criteria;
+ identification of weak points and
+ certification of compliance with designated requirements.

Cons:

– inability to ensure an objective assessment from a single expert;

– comparatively high cost (of comprehensive expertise/certificates);
– no compulsory requirement to incorporate suggestions for improvement, and
– despite certificate, no release from liability.

E.2.5 Findings from independent award or merit schemes

Scope/Objectives:

- certification of high quality of a product according to generally accepted guidelines and
- competition with other information products

Pros:

+ independent experts;
+ low-cost and
+ comparability of assessment results with those of other information products.

Cons:

– criteria checklist is not tailored to a particular question/problem and
– does not necessarily reflect the customer's point of view regarding quality.

E.2.6 Feedback from complaints management, hotlines and service information

Scope/Objectives:

- ongoing improvement process;
- optimization of request handling and
- improvement of the information product.

Pros:

+ ongoing feedback;
+ information can be used for improvement of instructions for use and
+ hotline costs can be reduced.

Cons:

– no systematic evaluation according to defined criteria;
– no quantitative evaluation regarding how common the problem is and
– limited to negative responses due to so-called self-selection of participants.

Bibliography

IEC 60073, *Basic and safety principles for man-machine interface, marking and identification – Coding principles for indicators and actuators*

IEC 60848, *GRAFCET specification language for sequential function charts*

IEC 61082-1:2006, *Preparation of documents used in electrotechnology – Part 1: Rules*

IEC 61310-1, *Safety of machinery – Indication, marking and actuation – Part 1: Requirements for visual, acoustic and tactile signals*

IEC 61355-1:2008, *Classification and designation of documents for plants, systems and equipment – Part 1: Rules and classification tables*

IEC 80416-1:2009, *Basic principles for graphical symbols for use on equipment – Part 1: Creation of symbol originals for registration*

IEC 81346-1, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic rules*

ISO/IEC 80000 (all parts), *Quantities and units*

ISO/IEC Guide 14:2003, *Purchase information on goods and services intended for consumers*

ISO/IEC Guide 37, *Instructions for use of products by consumers*

ISO/IEC Guide 74, *Graphical symbols – Technical guidelines for the consideration of consumers' needs*

ISO Guide 73:2009, *Risk management – Vocabulary*

ISO/IEC DGuide 81:---, *Guidelines for the inclusion of security aspects in standards*

ISO 7731, *Ergonomics – Danger signals for public and work areas – Auditory danger signals*

ISO 9000:2005, *Quality management systems – Fundamentals and vocabulary*

ISO 9186 (all parts), *Graphical symbols – Test methods*

ISO 10628, *Flow diagrams for process plants – General rules*

ISO 11429, *Ergonomics – System of auditory and visual danger and information signals*

ISO 15006, *Road vehicles – Ergonomic aspects of transport information and control systems – Specifications and compliance procedures for in-vehicle auditory presentation*

ISO/TR 16352, *Road vehicles – Ergonomic aspects of in-vehicle presentation for transport information and control systems – Warning systems*

Web Content Accessibility Guidelines (WCAG) 2.0, B. Caldwell, M. Cooper, L. Reid, G. Vanderheiden, Editors, W3C Recommendation, 11 December 2008

———————

This page deliberately left blank

British Standards Institution (BSI)

BSI is the independent national body responsible for preparing British Standards and other standards-related publications, information and services. It presents the UK view on standards in Europe and at the international level.

BSI is incorporated by Royal Charter. British Standards and other standardisation products are published by BSI Standards Limited.

Revisions

British Standards and PASs are periodically updated by amendment or revision. Users of British Standards and PASs should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using British Standards would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Similary for PASs, please notify BSI Customer Services.

Tel: +44 (0)20 8996 9001 Fax: +44 (0)20 8996 7001

BSI offers BSI Subscribing Members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of British Standards and PASs.

Tel: +44 (0)20 8996 7669 Fax: +44 (0)20 8996 7001
Email: plus@bsigroup.com

Buying standards

You may buy PDF and hard copy versions of standards directly using a credit card from the BSI Shop on the website **www.bsigroup.com/shop.** In addition all orders for BSI, international and foreign standards publications can be addressed to BSI Customer Services.

Tel: +44 (0)20 8996 9001 Fax: +44 (0)20 8996 7001
Email: orders@bsigroup.com

In response to orders for international standards, BSI will supply the British Standard implementation of the relevant international standard, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Knowledge Centre.

Tel: +44 (0)20 8996 7004 Fax: +44 (0)20 8996 7005
Email: knowledgecentre@bsigroup.com

BSI Subscribing Members are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration.

Tel: +44 (0)20 8996 7002 Fax: +44 (0)20 8996 7001
Email: membership@bsigroup.com

Information regarding online access to British Standards and PASs via British Standards Online can be found at **www.bsigroup.com/BSOL**

Further information about British Standards is available on the BSI website at **www.bsi-group.com/standards**

Copyright

BSI

389 Chiswick High Road London W4 4AL UK

Tel +44 (0)20 8996 9001
Fax +44 (0)20 8996 7001
www.bsigroup.com/standards

raising standards worldwide™