


ISO/TC 184/SC 4 Industrial Data Quality Committee

ISO/TC 184/SC 4/QC, TRAINING, NAGASAKI 2025

ISO/IEC Directives Part2, 2021 training

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ISO/TC 184/SC 4/QC WORKSHOP, NAGASAKI, October 2025

 Winner
2007 & 2021
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Learning Objectives

- Part 1 - Correctly write an introduction and scope for a standard,
- Part 2 - Use the correct provisions,
- Part 3 - Define terms and definitions,
- Part 4 - Recognize referencing notation.

Learning Objectives

I want you to be able to:

- know that rules exist,
- find the correct document,
- question yourself and find the answer to your question,
- support your team with advice,
- keep your reader in mind.

Training material

<https://committee.iso.org/sites/tc184sc4/home/quality-committee.html>

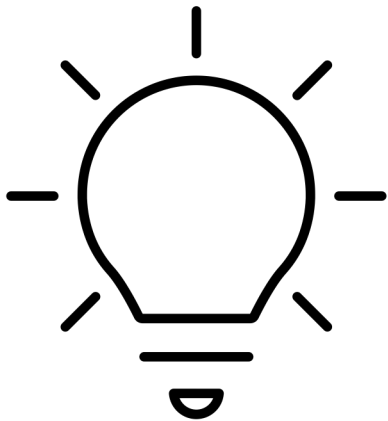
- ISO/IEC Directives, Part 2, current
<https://www.iso.org/sites/directives/current/part2/index.html>
- ISO House Style
<https://www.iso.org/ISO-house-style.html>
- ISO.org website | *Taking part* | *Resources* | Drafting standards
<https://www.iso.org/home.html>
<https://www.iso.org/drafting-standards.html>
- Online Browsing Platform (OBP)
<https://www.iso.org/obp/ui/#search>
- ISO drafting Standards: YouTube
<https://www.youtube.com/watch?v=PozCvOO9X1A&t=3101s>
- ISO e-learning
<https://learning.iso.org/course/view.php?id=35>
- ISO/TC 184/SC 4 website
<https://committee.iso.org/sites/tc184sc4/home/quality-committee.html>
- SC 4 starter kit
<https://committee.iso.org/sites/tc184sc4/home/forums/quality-forum/training-materials.html#starterKit>
- Git boilerplate repository
<https://sd.iso.org/bitbucket-pilot/projects/ISOTC184SC4/repos/boilerplate/browse>



Scope and Introduction, overview

- The Introduction provides specific information or commentary about the technical content of the document, and about the reasons prompting its preparation.
- The Introduction is an **informative** element. *It shall not contain requirements.*
- The Introduction is an **optional** element, but a **mandatory** element in **ISO/TC 184/SC 4**.

The Introduction ...

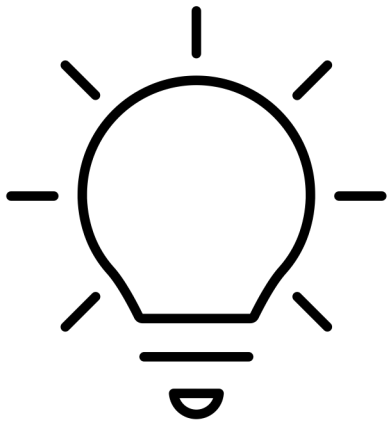


- Background information or commentary
- Needs in the industry, state of the art
- How did the standard come into existence
- Concise; do not duplicate the Scope

Scope and Introduction, overview

- The Scope clearly defines the subject of the document and the aspects covered, thereby indicating the limits of applicability of the document or particular parts of it.
- The Scope is a **normative** element. The Scope shall not contain requirements, permissions or recommendations.
- The Scope shall be numbered as Clause 1.

The Scope ...



- Explains what the standard does
- Concise
- Applicability of the standard
- Only uses statements of fact

Terms and definitions, overview

ICS > 01 > 01.020

ISO 10241-1:2011

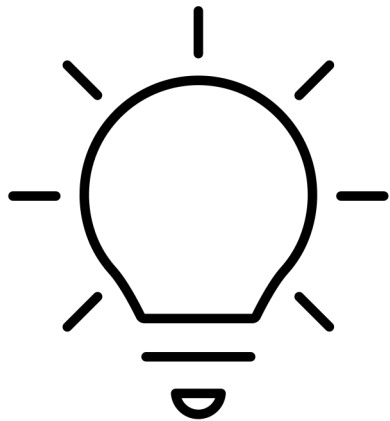
Terminological entries in standards —
Part 1: General requirements and
examples of presentation

ISO 10241-1, Terminological entries in standards — Part 1:
General requirements and examples of presentation
Introduction

“To ensure that **communication** in a **particular domain** is **effective** and that **difficulties in understanding** are **minimized**, it is essential that the **various participants** use the **same concepts** and concept representations.

The **standardization of terms and definitions** is thus **fundamental** to all **standardization activities**.”

Part 2

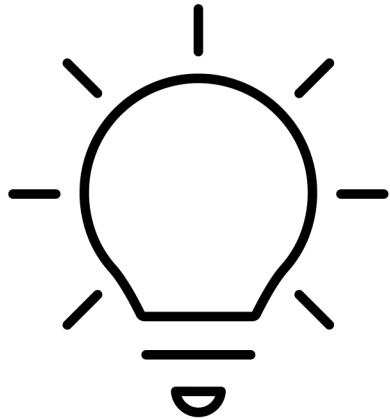


- Common terms, which a qualified user of the document will already know, should not be defined.
- Oxford Dictionary of English
- In order to avoid the unnecessary proliferation of terminological variants, it is recommended to use existing terminological entries from International Standards. Search for suitable terms existing in the terminology databases of ISO and IEC:
 - <https://www.iso.org/obp>
 - <https://www.electropedia.org>

Terms and definitions, overview

- Terms and definitions should be listed according to the hierarchy of the concepts (i.e. systematic order). Alphabetical order is the least preferred order.
- You can find an example of what can be done in ISO 9000:2015(E).
- The introductory sentence is mandatory even if no terms and definitions are provided in the document. Four options are available. See ISO/IEC Directives, Part 2, 2021, 16.5.3 for the boilerplate and the Word document for ISO standards.
- A document given as a source of a terminological entry is informative.

Part 2



- The definition shall be written in such a form that it can replace the term in its context.
- Terms shall be written in lowercase letters.
- Terms shall in general be presented in their basic grammatical form.
- It shall not start with an article (“the”, “a”) nor end with a full stop.
- A definition shall not take the form of, or contain, a requirement.
- Only one definition per terminological entry is allowed. If a term is used to define more than one concept, a separate terminological entry shall be created for each concept and the domain shall be included in angle brackets before the definition.

Note to entry

- Notes to terminological entries are referred to as “Notes to entry”.
- A single note to entry shall be numbered.
- Notes to entry can contain requirements, recommendations and permissions (relating to the use of the term).

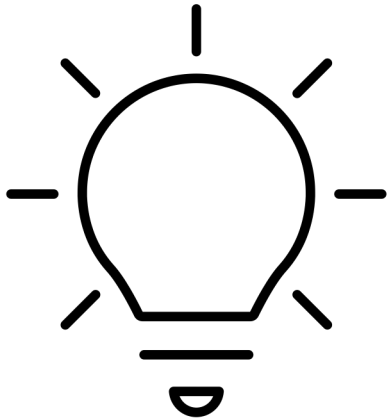
Example of a note to entry that contains a requirement (ISO/IEC Directives, Part 2, 16.5.9, EXAMPLE 2

EXAMPLE 2**3.6****moisture content mass by volume**

mass of evaporable water divided by volume of dry material

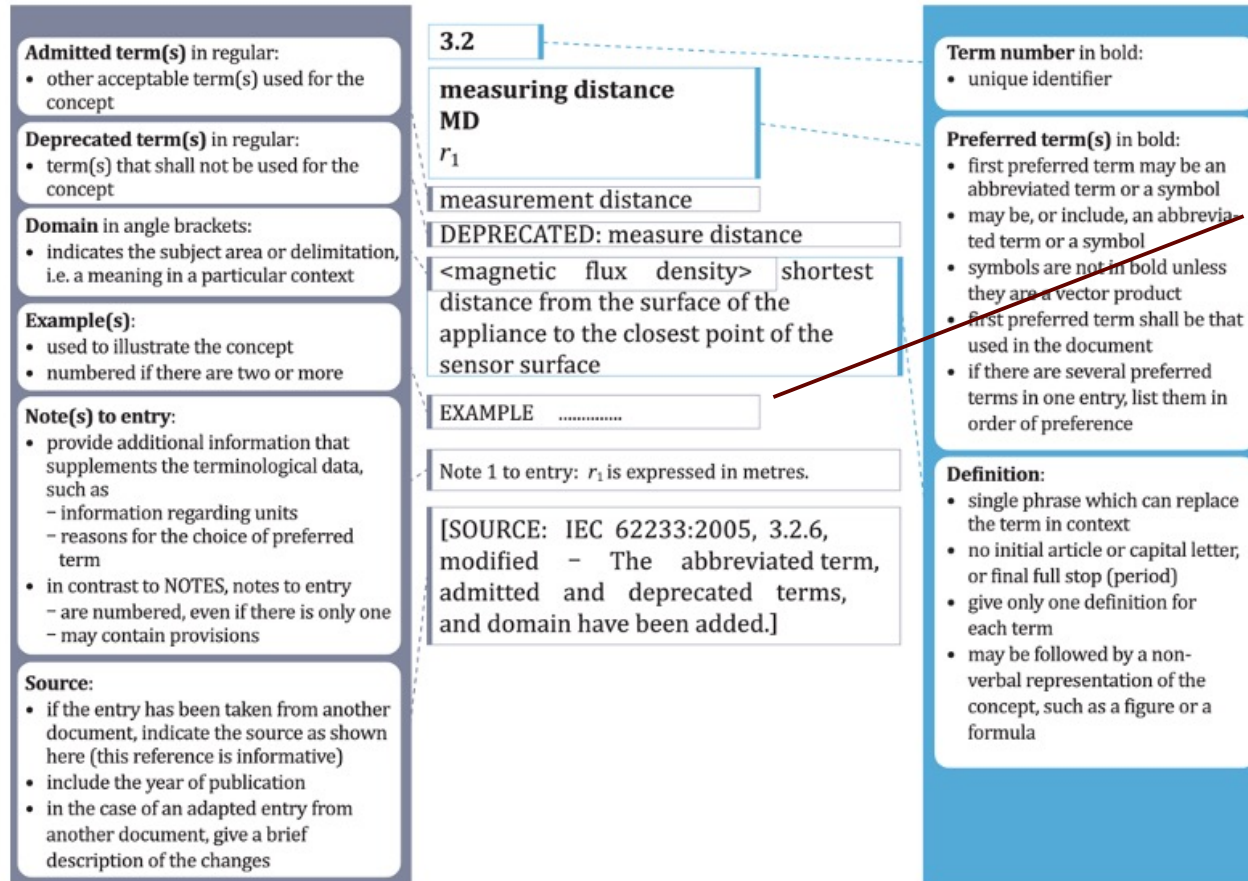
Note 1 to entry: The method of evaporating water from a moist material shall be stated when this term is used.

Part 2



- Best practices for vocabularies and terminologies [PDF]
<https://isotc.iso.org/livelink/livelink/Open/18570065>
- Do not include cross-references in the text to the terminological entries listed in Clause 3. Cross-references to terms and definitions are only included within Clause 3.

Part 2



Did you notice that **EXAMPLES** shall be placed before the Notes to entry?

Figure 1 — Overview of the main elements of a terminological entry

read more

ISO 10241-1, *Terminological entries in standards — Part 1: General requirements and examples of presentation*

See ISO 10241-1 (normative reference in the ISO/IEC Directives Part 2, Clause 2, page 2). Parts of speech are used to distinguish/clarify when there is a possibility to use different parts of speech.

A.2.12 Example showing homographs within the same standard and parts of speech

4.133
flame, noun
rapid, self-sustaining, sub-sonic propagation of *combustion* (4.46) in a gaseous medium, usually with emission of light
Note 1 to entry: The term "flame" also represents the concept defined in 4.134.

4.134
flame, verb
to produce *flame* (4.133)
Note 1 to entry: The term "flame" also represents the concept defined in 4.133.

Use separate term entries and domain in brackets.

Only one definition per terminological entry is allowed. If a term is used to define more than one concept, a separate terminological entry shall be created for each concept and the domain shall be included in angle brackets before the definition.

EXAMPLE

2.1.17
die
<extrusion> metal block with a shaped orifice through which plastic material is extruded

2.1.18
die
<moulding> assembly of parts enclosing the cavity from which the moulding takes its form

Provisions, overview

ISO/IEC Directives, Part 2, 2021, Clause 3: Terms and definitions

3.3 Provisions

3.3.1

provision

expression in the content of a *normative document* that takes the form of a *statement*, an instruction, a *recommendation* or a *requirement*

3.3.2 statement
expression, in the content of a *document*, that conveys information

3.3.3 requirement
expression, in the content of a *document*, that conveys objectively verifiable criteria to be fulfilled and from which no deviation is permitted if conformance with the document is to be claimed

3.3.4 recommendation
expression, in the content of a *document*, that conveys a suggested possible choice or course of action deemed to be particularly suitable without necessarily mentioning or excluding others

3.3.5 permission
expression, in the content of a *document*, that conveys consent or liberty (or opportunity) to do something

3.3.6 possibility
expression, in the content of a *document*, that conveys expected or conceivable material, physical or causal outcome

3.3.7 capability
expression, in the content of a *document*, that conveys the ability, fitness, or quality necessary to do or achieve a specified thing

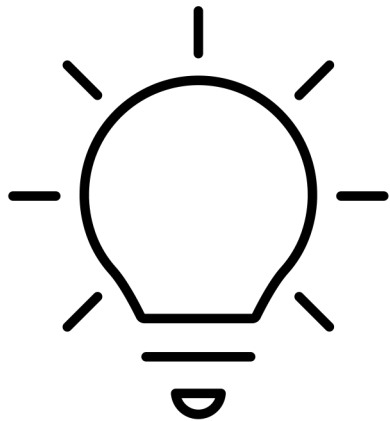
3.3.8 external constraint
constraint or obligation on the user of the *document* (e.g. laws of nature or particular conditions existing in some countries or regions) that is not stated as a *provision* of the document

Provisions, overview

Type	Preferred verbal form (affirmative)	Preferred verbal form (negative)
Requirement	shall	shall not
Recommendation	should	should not
Permission	may	—
Possibility and capability	can	cannot
External constraint	must	—

Example of an external constraint: “All fish **must** maintain a balance of salt and water in their bodies to stay healthy.”

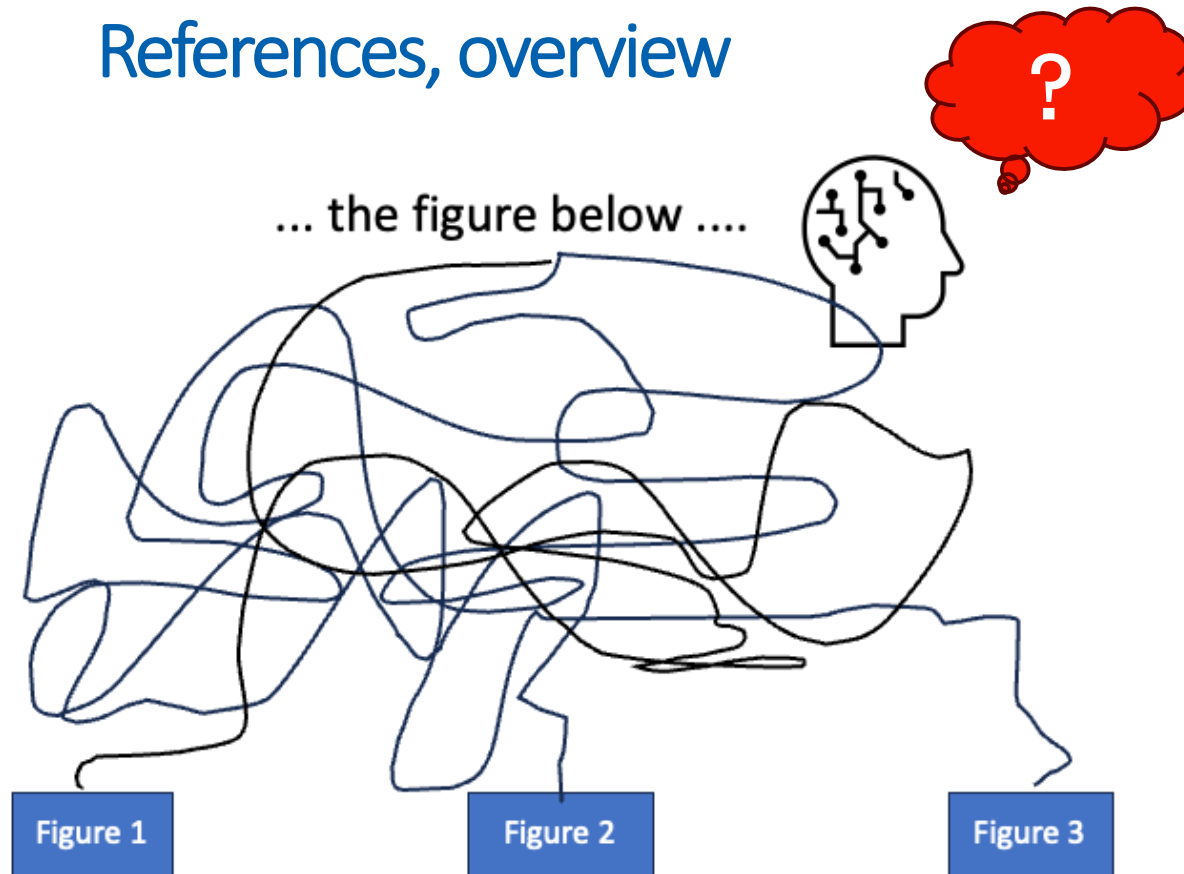
Part 3



- To avoid risk of misinterpretation, verbal forms that are not defined in ISO/IEC Directives, Part 2, 2021, Clause 7, Table 3 to Table 7 shall not be used for the expression of provisions.
- The content of a Technical Report is not permitted to include requirements, recommendations or permissions.
- To ensure that a document is understood and applied correctly, use “shall” to express requirements of the document and “must” to express constraints or obligations defined outside the document, and which are given for the information of the user. Avoid substituting either of these terms with “need(s) to”, even if this seems logical in English. Revise a sentence that uses “need(s) to” to avoid confusion and misapplication of the text.

References, overview

Do not lose
your reader!



References

can be made

- **in a document to itself and to other parts of the document**, such as a Clause, subclause, any numbered element. [ISO/IEC Directives, Part 2, 2021, 10.6](#)
- **to other documents or publications** in their entirety or to a part of the document. [ISO/IEC Directives, Part 2, 2021, 10.2](#)

can be

- **undated**. [ISO/IEC Directives, Part 2, 2021, 10.4](#)
- **dated**. [ISO/IEC Directives, Part 2, 2021, 10.5](#)
- **normative**. [ISO/IEC Directives, Part 2, 2021, Clause 15](#)
- **informative**. [ISO/IEC Directives, Part 2, 2021, Clause 21](#)

References can be made **in a document to itself**

- For an individual document, the form “this document” shall be used.
- In contexts where it is necessary to specify the number of the document, it is acceptable to do so.
- If content has been subdivided into a series of parts, reference **in the text** to the entire series including the individual document shall be made using the form “the ISO xxxx series”.

References can be made in a document to itself and to other parts of the document

- References to particular elements of the text, such as Clauses, subclauses, tables, figures, mathematical formulas, Annexes, are made by using their number.
- Imprecise references such as “the following clause” or “the figure above” shall not be used.
- Each Figure, Table, Formula, Annex shall be explicitly referred to within the text.

References can be made to **other documents or publications**

- **Normatively** referenced documents shall be documents published by ISO or IEC.
- See ISO/IEC Directives, Part 2, 2021, 10.2 regarding references to other documents as normative references. Those documents shall be publicly available.
- ISO normatively referenced documents shall have reached at least the enquiry stage (40.20 DIS). ISO stages
- **Informative** reference may be made to any other type of document.

References can be **undated**, undated references may be made:

- only to a complete document;
- if it will be possible to use all future changes (including amendments and revisions) of the referenced document for the purposes of the referring document.
- When an undated reference is to all parts of a series:
 - the standard identifier shall be followed by “(all parts)” in the lists of documents (Normative references or bibliography).
 - the form “the ISO xxxx series” shall be used in the text.

References can be **dated**, dated references are references to

- a specific edition, indicated by the date of publication, or
- a specific enquiry or final draft, indicated by a dash.

In the case of enquiry or final drafts, the date shall be replaced with a dash together with an explanatory footnote. See ISO/IEC Directives, Part 2, 2021, 10.5, EXAMPLE 2

- References made to specific elements such as a Clause, subclause, any numbered element shall always be dated.

References can be normative

- Only references cited in the text **in such a way that some or all of their content constitutes requirements** of the document is normative and
- shall be listed in the Normative references clause. (Clause 2).
- Unless there is a clear requirement (“shall”) or imperative language in the text, all document content is informative by default.
- Make sure your reference is normative, review the "In accordance with or according to" section of ISO House Style.

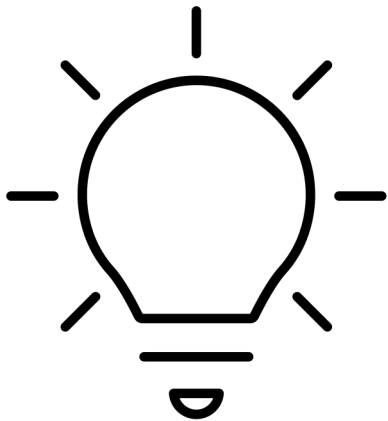
References can be informative

- The Bibliography lists, for information, those documents which are cited informatively in the document, **as well as other information resources.**
- Even if it is allowed, avoid to list in the bibliographical entries that are not cited in the document.
- **Informative references shall be listed in the Bibliography.**

Presentation of references

- Documents shall be referred to by their number and, if applicable, date of publication and title.
- The normative references clause is not numbered. The list is ordered as follows:
 - ISO documents
 - IEC documents
 - other international standards

Part 4



- Note the layout:
ISO 10303-1, *Industrial automation systems and integration — Product data representation and exchange — Part 1: Overview and fundamental principles*
- Do not use full stops at the end of normative references or bibliographic entries.
- Do not use superscript callout for the ISO and IEC documents cited in the text.
- Carefully read ISO House Style - Referencing section <https://www.iso.org/ISO-house-style.html#iso-hs-s-text-r-referencing>

Helper



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reference is cited in the text in such a way that some or all of their content constitutes **requirements** of the *document*.

- **dated** if the reference is made to specific elements. (Figures, Tables, Clause, Annex)
- **undated** if the reference is made to a complete document. (See complete statement in the ISO/IEC Directives, Part 2, 2021, 10.4)

document

Normative references

reference is cited in the text in such a way that some or all of their content **does not** constitute a requirement of the *document*.

- **dated** if the reference is made to specific elements. (Figures, Tables, Clause, Annex)
- **undated** if the reference is made to a complete document. (See complete statement in the ISO/IEC Directives, Part 2, 2021, 10.4)

document

Bibliography



ISO/TC 184/SC 4 Industrial Data



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