
**Petroleum and natural gas industries —
Content and drafting of a technical
specification**

*Industries du pétrole et du gaz naturel — Rédaction et contenu
d'une spécification technique*

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International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet iso@iso.ch

Printed in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 13880 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*.

Annex A of this International Standard is for information only.

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Introduction

When a user/purchaser wishes to procure a product, process or service, the user/purchaser may produce a functional specification. If so, the manufacturer/supplier provides a technical specification as the basis for manufacturing or execution. The user/purchaser decides on the extent to which it is necessary to determine, directly or indirectly, that relevant requirements are fulfilled and states this in the contract with the manufacturer/supplier. A technical specification may not be necessary for a known standard product, process or service to a recognized standard.

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Petroleum and natural gas industries — Content and drafting of a technical specification

1 Scope

This International Standard provides guidance for the content and drafting of a technical specification in order to ensure that all technical requirements of a product, process or service are included and can be verified as complying with specified performance requirements, such as may be specified in a functional specification (see ISO 13879).

A technical specification may not be necessary for a known standard product, process or service manufactured/supplied to a recognized standard.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For this dated reference, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 13879:—¹⁾, *Petroleum and natural gas industries — Content and drafting of a functional specification.*

3 Terms and definitions

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

3.1

functional specification

document that describes the features, characteristics, process conditions, boundaries and exclusions defining the performance and use requirements of the product, process or service

3.2

technical specification

document that defines technical requirements to be fulfilled by the product, process or service in order to comply with the functional specification

NOTE 1 A technical specification should indicate, whenever appropriate, the procedure(s) by means of which it may be determined whether the requirements given are fulfilled.

NOTE 2 A technical specification may be a standard, be included in a standard(s) or be independent of a standard.

¹⁾ To be published.

NOTE 3 A technical specification expresses the technical requirements expressed by characteristics, features, properties and all information that is required to produce a product, execute a process or provide a service, including objective evidence that the product, process or service will comply with the functional requirements.

3.3 design process

process of converting the requirements of the functional specification into the technical specification

3.4 technical drawings

drawings showing the required dimensions, surface finishes, deviations of form and position, tolerances and all other details required to provide the product, process or service

3.5 material requirements

document listing the materials required and providing, when relevant, chemical composition, mechanical and physical properties, and any other data necessary to define materials required to provide the product, process or service to the functional specification

NOTE 1 The document may also list the applicable treatments, welding procedures and machining processes.

NOTE 2 The document should contain all available information regarding toxicity and any other health, safety and environment related aspects.

3.6 manufacturing plan

document setting out the specific manufacturing practices, technical resources and sequences of activities relevant to the production of a particular product including any specified acceptance criteria at each stage

NOTE 1 This plan should make reference to the applicable methods, procedures and work instructions.

NOTE 2 In case of services, the manufacturing plan is often called a Service Plan.

3.7 inspection plan

document providing an overview of the sequence of inspections and tests, including appropriate resources and procedures to be referenced by the manufacturing plan

3.8 routine test

test performed to provide evidence that the product, process or service or part thereof is in compliance with the relevant requirements of the technical specification

3.9 type test

test performed to provide evidence that the design meets the requirements of the functional specification

3.10 design review

documented, comprehensive and systematic examination of a design to evaluate its capability to fulfill requirements for quality, identify problems and propose the development of solutions

NOTE 1 In the context of this International Standard, the basis for the design review is the functional specification.

NOTE 2 A service is also designed, and can be reviewed in the same manner.

4 Guidelines for drafting

4.1 Objectives of a technical specification

Any product, process or service should function as specified by the functional specification when exposed to the anticipated operating conditions and environmental factors. The technical specification should provide sufficiently detailed information:

- to demonstrate compliance with the functional specification; and thereafter
- to enable the manufacturer/supplier to deliver the product, process or service in compliance with the functional specification and the technical specification.

The technical specification should describe the technical requirements of the product, process or service in clear and unambiguous terms. In order to achieve this, the technical specification should:

- be as complete as necessary within the limits specified by the scope;
- be consistent and accurate;
- take account of the state of the art.

4.2 Format of a technical specification

The technical specification should only contain requirements that can be verified. Uniformity of structure, style and terminology should be maintained within each technical specification, and within any series of associated technical specifications. The same terminology should be used throughout, and synonyms should be avoided.

The text of the technical specification should follow the relevant guidelines of existing basic International Standards. See 4.3 of ISO/IEC Directives Part 3, 1997. This relates particularly to:

- standardized terminology; <https://standards.iteh.ai/catalog/standards/sist/592ee157-1166-454a-bfe1-41b5fd61ee6e/iso-13880-1999>
- principles and methods of terminology;
- quantities, units and their symbols;
- abbreviated terms;
- bibliographic references;
- technical drawings and/or service procedures;
- graphical symbols.

In addition, for technical aspects, the relevant provisions of general International, regional, or national standards dealing with the following subjects should be respected:

- environmental conditions and associated tests;
- type tests or service procedures trials;
- routine tests;
- safety;
- regulatory requirements;
- statistical methods.

5 Framework, structure and content

5.1 General arrangement

The following elements should be present in a technical specification:

- preliminary elements identifying the technical specification;
- normative elements specifying the requirements for compliance with the technical specification;
- supplementary elements that provide additional information to assist the understanding of the technical specification.

The arrangement which should be used is indicated in Table 1.

Table 1 — Arrangement of elements

Type of element		Element	Subclause of this International Standard (ISO 13880)
Preliminary		Title page Contents Foreword Introduction	5.2.1, 5.3.1 5.2.2 5.2.3 5.2.4
Normative	General	Title Scope Normative References	5.3.1 5.3.2 5.3.3
	Technical	Terms and definitions Symbols and abbreviated terms Technical requirements Sampling Test methods Classification and designation Marking, labelling, packaging Operating environment, boundaries, limits and exclusions Ergonomics Safety and environment Normative annexes	5.4.1 5.4.2 5.4.3 5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.11
Supplementary		Informative annexes	5.5

5.2 Preliminary elements

5.2.1 Title page

The title page should contain the title (see 5.3.1), an identification of the initiating organization, a unique identifier, issue date and authorization.

5.2.2 Contents

The contents should comprise a list of the clauses and the annexes. All the elements should be given with their full titles.

5.2.3 Foreword

This is an optional element and may contain the following:

- an indication of the organization which prepared the technical specification;
- information regarding the approval level of the technical specification;
- a statement that the technical specification cancels or replaces other documents in whole or in part;
- a statement or an indication of significant changes from any previously supplied specifications;
- a statement clarifying which annexes are normative and which are informative.

5.2.4 Introduction

This is an optional preliminary element used to give specific information or commentary about the contents of the technical specification. It shall not contain requirements.

5.3 General normative elements

5.3.1 Title

The wording of the title should be as concise as possible and should indicate the subject matter of the technical specification, without going into unnecessary detail.

The title should be composed of separate elements, each as short as possible, proceeding from the general to the particular. Not more than the following three elements should be used:

- a) an introductory element indicating the general field to which the technical specification belongs;
- b) a main element indicating the principal subject treated within that general field;
- c) a complementary element indicating the particular aspect of the principal subject or giving details which distinguish the document from other technical specifications or other parts of the same technical specification.

5.3.2 Scope

This element should define the subject matter of the aspect(s) covered and indicate any limits of applicability.

5.3.3 Normative references

This optional element shall give a list of the normative documents to which reference is made in the standard in such a way as to make them indispensable for the application of the standard. For dated references, each shall be given with its year of publication, or in the case of enquiry or final drafts, with a dash together with a footnote "To be published" and full title. The year of publication or dash shall not be given for undated references. When an undated reference is to all parts of a standard, the publication number shall be followed by the indication "(all parts)" and the general title of the series of parts (i.e. the introductory and main elements).

These documents should include:

- the applicable functional specification;
- relevant drawings;
- material requirements;
- operating procedures;
- training requirements;