
Vzdrževanje - Dokumentacija za vzdrževanje

Maintenance - Documentation for maintenance

Instandhaltung - Dokumente für die Instandhaltung

Maintenance - Documents pour la maintenance

Ta slovenski standard je istoveten z: prEN 13460

<https://standards.iteh.ai/catalog/standards/sist/d4b0bfd2-6eef-4fd3-9584-3b9b3457d736/sist-en-13460-2009>

ICS:

01.110	Technical product documentation
03.080.10	Industrijske storitve Industrial services

oSIST prEN 13460:2007**en;de**

May 2007

ICS 01.110; 03.080.10

English Version

Maintenance - Documentation for maintenance

Maintenance - Documents pour la maintenance

Instandhaltung - Dokumente für die Instandhaltung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 319.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword.....	3
Introduction	4
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Documentation	6
4.1 General	6
4.2 The concept of document	6
4.3 Normative documentation for maintenance	6
5 Documents from the preparatory phase	7
Annex A (informative) Documents from the operational phase	10
Annex B (informative) Work order information items	18
Annex C (informative) General overview of structure and purpose of documents	20

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13460:2009

<https://standards.iteh.ai/catalog/standards/sist/d4b0bfd2-6eef-4fd3-9584-3b9b3457d736/sist-en-13460-2009>

Foreword

This document (prEN 13460:2007) has been prepared by Technical Committee CEN/TC 319 “Maintenance”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13460:2009

<https://standards.iteh.ai/catalog/standards/sist/d4b0bfd2-6eef-4fd3-9584-3b9b3457d736/sist-en-13460-2009>

Introduction

Maintenance, as any other function in business, requires a suitable information flow between the different points of its internal organization and with the rest of the functional and organizational units of the business, in order to fulfil its objectives of reaching an acceptable performance.

For the purpose of this European Standard, it is necessary to consider that the different companies organize their functions and divisions according to their specific needs (traditions, market, means, human resources, etc.). Therefore, the organization of the information varies from one business to another. For that reason, this European Standard has been divided into the normative part and informative annexes.

The normative part concerns the first part of the life cycle of the item to be maintained, namely the preparatory phase. When an item is acquired, the acquirer requires certain documentation to maintain and operate the item properly. That appropriate documentation has to be provided by the supplier of the item.

The normative part of this European Standard describes the list of required essential documents for maintenance and gives information on possible contents of each document mentioned in clause 5. In order to make the standard flexible to the specific needs of user/supplier of the item, the list of information given for each document may be adapted to specific requirements by agreement between user and supplier. This European Standard takes into consideration agreements between parties which affect documentation in such a way that any document may be deleted or replaced totally or partially as agreed in the contract according to EN 13269:2006.

The informative annexes A, B and C concern the operational phase (see 3.6) of the life cycle of the item to be maintained.

The informative annexes, in addition to the normative text, develop the documentation for maintenance having regard to the maintenance function as a part of the quality system of the company. That is, not only the documentation of information which is necessary to manage the maintenance is suggested, but also the documentation to accomplish, at the same time, the quality assurance requirements for maintenance operations.

[SIST EN 13460:2009](https://standards.iteh.ai/catalog/standards/sist/d4b0bfd2-6eef-4fd3-9584-3b9b3457d736/sist-en-13460-2009)

<https://standards.iteh.ai/catalog/standards/sist/d4b0bfd2-6eef-4fd3-9584-3b9b3457d736/sist-en-13460-2009>

1 Scope

This European Standard specifies general guidelines for:

- the technical documentation to be supplied with an item, at the latest before it is ready to be put into service, in order to support its maintenance, see clause 5.
- the documentation of information to be established within the operational phase of an item, in order to support the maintenance requirements, see annex A.

2 Normative references

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

EN 13306:2001, *Maintenance — Terminology*.

EN 13269, *Maintenance — Guideline on preparation of maintenance contracts*.

EN IEC 60300-3-14, *Dependability management — Application guide — Maintenance and maintenance support*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13306, together with the following apply.

3.1

assets register (equipment basic data)

item (see 3.4) basic information, related to technical, contractual, administrative, locational and operational aspects, in order to define it within the company

NOTE This information comes either from the preparatory or the operational phase (see 3.7 and 3.6).

3.2

document

specific form containing information

3.3

documentation

information given in a specific form

3.4

item

any part, component, device, subsystem, functional unit, equipment or system that can be individually considered (see EN 13306:2001, 3.1)

3.5

maintenance workflow

set of sequenced steps to be followed, in order to accomplish a maintenance operation, from the first preparatory activities, such as study and defining policies, to the analysis once the work is finished and action to be taken to improve future similar cases

(see Figure C.1)

STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 13460:2009
<https://standards.iteh.ai/catalog/standards/sist/d4b0bfd2-6eef-4fd3-9584-3b9b3457d736/sist-en-13460-2009>

3.6

operational phase

period of time beginning when the item is put into service and ending with the disposal of the item

3.7

preparatory phase

period in the item life time corresponding to the conception, designing, manufacturing, assembly and commissioning of the item

3.8

work order (W.O.)

document containing all the information related to a maintenance operation and the reference links to other documents necessary to carry out the maintenance work

4 Documentation

4.1 General

The requirements of 7.4.2 of EN IEC 60300-3-14 apply as guidance.

4.2 The concept of document

The document is the physical support of the information in a specific form. This may take the form of a paper sheet, the screen of a video monitor of a computer system, an electronic board, a blackboard, etc., and the figures, type, size and distribution on the available surface may vary without affecting the main purpose of the information system. It is absolutely important to ensure that the necessary set of information items is available at the right point, to the appropriate person, in the necessary time, whatever the means the company is using.

Due to these reasons, the information items have been described in detail and grouped in information structures of higher level. These structures will constitute the content of a specific document, once it has been displayed in a certain way, in a specific form.

This European Standard deals with the kind of documents and their specific content in detail. However, it does not standardize the physical aspect either of the documents or of their contents. Therefore, for the purpose of this standard, the structures of information items are called documents, although they are, in fact, the information contents of those documents.

4.3 Normative documentation for maintenance

This European Standard lists and defines the whole set of documents and information to be considered in the acquisition of any installation, equipment, system or subsystem in order to make it possible to organize its maintenance. When the item is ordered from the supplier, those documents and information will have the consideration of an implicit or explicit part of the order. The supplier only shall issue those documents that are related to the service or function which are expected to be covered by the supplied item and are under the responsibility of the supplier. These are declared indirectly in the features contracted between the supplier and the user of the item.

NOTE 1 Not all the documents listed in clause 5 have to be present in the document set supplied with the physical item. For instance, "lubrication map" has no meaning related to a lubrication-free equipment. Another example: the supplier of the civil engineering work, in the erection of an industrial plant, normally has nothing to do with the "logic diagram".

In any case, the supplier may provide more documents than listed in this standard, as additional information or by agreement with the client.

In order to define the above mentioned documentation accurately, clause 5 gives a table containing the documentation profile. The table is structured in four columns.

The column "Document name" contains the title given to each particular document.

The column "Document description" contains a brief explanation of each document content, as a definition of it.

The column "Information" contains the minimum set of elements of information to be included in each document. If each document is considered as a data structure in a database, the information items will be the different fields.

NOTE 2 There is no requirement specified for the size of each information, nor for the type of its literary content (alphabetical, numerical, alphanumerically, etc.). This means that the information should meet the detailed needs of each user or supplier (for instance, it is not possible to standardize the codification, the units of capacity, the type of supplies required, etc.).

In particular cases, some of the information listed for a document should not be used because of their lack of relevance or the nature of the item to which it is related. In those cases, the corresponding information should be completed with the expression "not relevant" or "not applicable", whichever is more suitable.

The supplier and purchaser of an item may define, if required in the purchase agreement, the complete list of detailed information, as well as the presentation format and media.

5 Documents from the preparatory phase

	Document name	Document description	Information
5.1	Technical data	Manufacturer's specification of the item.	Manufacturer Date of manufacture Model/type/serial number Size Weight Capacity Power and service requirements Interfaces specifications Other: referring physical nature, assembly details and operation data.
5.2	Operation manual	Technical instructions to reach a proper item function performance according to its technical specifications and safety conditions.	Model/type Manual date (edition) Technical details of the item Functional description of the item Functional capabilities and performances Design, safety and operation margin Procedures for: — commissioning / start-up; — warning-up; — steady operation; — controlled shutdown; — incidental and emergency Operation limitations/Precautions Laws and regulations to be abided to.
5.3	Maintenance manuals	Technical instructions intended to preserve an item in, or restore it to, a state in which it can perform a required function.	Model/type Manual date (edition) Technical details of the item Preventive maintenance operations/actions: — inspections; — calibration/adjustment; — parts replacements; — lubrication Procedures for: — troubleshooting; — dismantling/assembly; — repair; — adjustment Cause and effect diagrams Special tools required Spare parts recommendations Safety requirements (signals, dressing, power source control,...)
5.4	Components list and spare parts list	Comprehensive list of items which constitute part of another one.	Equipment breakdown description Upper level item (heading) (Model/type/serial number) Item number Item description Item quantity.

	Document name	Document description	Information
5.5	Arrangements	Drawing showing replacement components layout for an item.	Drawing code and identification Date (issue/revision) Dimensions Item components location and identification Necessary space for disassembly and maintenance Relevant information about connection details When necessary: lifting lugs, inspection hatches, ladders,....
5.6	Detail	Drawing with part list to ensure dismantling, repair and assembly of items.	Code identifying the item which is detailed Assembly drawing showing positions of parts Identification of each part on the drawing: — part number; — description; — number of units. Any other relevant information for assembly and disassembly operations.
5.7	Lubrication map	Drawing showing position of each item lubrication point, with lubrication data and specifications.	Map code and identification Date (issue/revision) Item identification (code and name) Lubrication point position (drawing) Lubrication point identification Lubrication point description Lubricant specifications Routing, when necessary.
5.8	Single line diagram	Overall power distribution diagram: — electrical; — pneumatic; — hydraulic. This kind of diagram includes switchboard circuits.	Diagram code and identification Date (issue/revision) Power distribution units (generators, transformers, switch gears, rectifiers,...) End consumers (for high voltage switchgears only) Earthing lines for systems, equipment and cables (general earthing principles will be included).
5.9	Logic diagram	System control diagram to clarify the overall system logic.	Diagram code and identification Date (issue/revision) Logic functions (symbols, internetworking and control flow) Modes of operation (e.g. starting, shutdown, alarm, trip functions).
5.10	Circuit diagram	Overall feeder and control circuits diagram.	Diagram code and identification Date (issue/revision) All internal connections for control, alarms, protection, interlocks, trip functions, monitoring, ... Settings of timers, thermal overload and protection relays Wire and cable numbers Terminal numbers Component list for in line, control and protection systems Switch gear/board location code Consumer/supplier location code Termination details and type of external signal (fire and gas trip signal,...) Power and current rating Reference drawings.

	Document name	Document description	Information
5.11	Pipe and instrument diagram	Overall fluid conduction (air, steam, oil, fuel ...), and control diagram.	Diagram code and identification Date (issue/revision) All internal connections for control, alarms, protection, interlocks, trip functions, monitoring, ... Pipe numbers Valves location code Terminal numbers Component list for in line control and protection systems Consumer/supplier location code Termination details and type of external signal (color, fire and gas trip signal,...) Pressure, flow and temperature rating Reference drawings.
5.12	Location	Drawing showing the position of all field items within the considered area.	Drawing code and identification Date (issue/revision) Area identification (code and name) Item identification and location code Items drawings or symbols, without dimensional details.
5.13	Layout	Drawing showing all areas of a particular plant.	Drawing code and identification Date (issue/revision) Plant name (and code, when necessary) Areas: relative position, dimensions, names and codes.
5.14	Test program report	Commissioning report which demonstrates that an item is in compliance with specifications.	Manufacturer Model / type / serial number Date of manufacture Date of commissioning Warranty period and conditions Fulfillment of the technical details: — size (when required); — weight (when required); — power and Service Requirements (inputs); — capacity/performance (output); — other: referring physical nature, assembly details and operation data. Name and signature of the end user of the item, accepting previous data.
5.15	Certificates	Specific safety and statutory regulations certificates for items (lifting equipment, steam boilers, pressure vessels,...).	Manufacturer Model/type/serial number Date of manufacture Subject to be certified Date of certificate Certification body/office and signature/stamp.