



SLOVENSKI STANDARD SIST EN 13480-1:2018

01-januar-2018

Nadomešča:
SIST EN 13480-1:2012

Kovinski industrijski cevovodi - 1. del: Splošno

Metallic industrial piping - Part 1: General

Metallische industrielle Rohrleitungen - Teil 1: Allgemeines

Tuyauteries industrielles métalliques - Partie 1: Généralités

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Ta slovenski standard je istoveten z: ~~SIST EN 13480-1:2017~~ **EN 13480-1:2017**

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ICS:

23.040.10	Železne in jeklene cevi	Iron and steel pipes
77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use

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EUROPEAN STANDARD

EN 13480-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2017

ICS 23.040.03

Supersedes EN 13480-1:2012

English Version

Metallic industrial piping - Part 1: General

Tuyauteries industrielles métalliques - Partie 1 :
GénéralitéMetallische industrielle Rohrleitungen - Teil 1:
Allgemeines

This European Standard was approved by CEN on 21 June 2017.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 13480-1:2017) has been prepared by Technical Committee CEN/TC 267 “Industrial piping and pipelines”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2017, and conflicting national standards shall be withdrawn at the latest by December 2017.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This European Standard EN 13480 for metallic industrial piping consists of eight interdependent and not dissociable Parts which are:

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- *Part 1: General;*
 - *Part 2: Materials;* <https://standards.iteh.ai/catalog/standards/sist/02c58127-fl77-47ec-9565-bc902fc26b31/sist-en-13480-1-2018>
 - *Part 3: Design and calculation;*
 - *Part 4: Fabrication and installation;*
 - *Part 5: Inspection and testing;*
 - *Part 6: Additional requirements for buried piping;*
 - *CEN/TR 13480-7, Guidance on the use of conformity assessment procedures;*
 - *Part 8: Additional requirements for aluminium and aluminium alloy piping.*

Although these Parts may be obtained separately, it should be recognised that the Parts are interdependent. As such the manufacture of metallic industrial piping requires the application of all the relevant Parts in order for the requirements of the Standard to be satisfactorily fulfilled.

This European Standard will be maintained by a Maintenance MHD working group whose scope of working is limited to corrections and interpretations related to EN 13480.

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The contact to submit queries can be found at <http://www.unm.fr> (en13480@unm.fr). A form for submitting questions can be downloaded from the link to the MHD website. After subject experts have agreed an answer, the answer will be communicated to the questioner. Corrected pages will be given specific issue number and issued by CEN according to CEN Rules. Interpretation sheets will be posted on the website of the MHD.

This document supersedes EN 13480-1:2012. This new edition incorporates the Amendments which have been approved previously by CEN members, and the corrected pages up to Issue 4 without any further technical change. Annex Y provides details of significant technical changes between this European Standard and the previous edition.

Amendments to this new edition may be issued from time to time and then used immediately as alternatives to rules contained herein.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This European Standard specifies the requirements for industrial piping systems and supports, including safety systems, made of metallic materials with a view to ensure safe operation.

This European Standard is applicable to metallic piping above ground, ducted or buried, irrespective of pressure.

This European Standard is not applicable to:

- Pipelines and their accessories;
- Stream waterways such as penstocks, pressure tunnels, pressure shaft for hydro-electric installations and their related specific accessories;
- Piping for vehicles covered by the EEC type approval procedures as laid down in Directives 70/156/EEC [1], 74/150/EEC [2] and 92/61/EEC [3];
- Items specifically designed for nuclear use, failure of which may cause an emission of radioactivity;
- Well-control equipment used in the petroleum, gas or geothermal exploration and extraction industry and in underground storage which is intended to contain and/or control well pressure, including the piping;
- Piping of blast furnaces including the furnace cooling, hot blast recuperators, dust extractors and blast furnace exhaust gas scrubbers and direct reducing cupolas including the furnace cooling, gas converters and vacuum furnaces and pans for melting, re-melting de-gassing and casting of steel and non ferrous metals;
- Enclosures for high voltage electrical equipment such as switchgear, control gear and transformers;
- Pressurized pipes for the containment of transmission systems such as for electrical power and telephone cables;
- Permanently fixed piping for ships, rockets, aircraft and mobile offshore units;
- Internal piping in medical devices as defined in the Directive 93/142/EEC [4] concerning medical devices;
- Internal piping of boilers and piping integral to pressure vessels.

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.

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EN 764-2:2002, *Pressure equipment — Part 2: Quantities, symbols and units*

EN 764-3:2002, *Pressure equipment — Part 3: Definitions and parties involved*

EN 13480-2:2017, *Metallic industrial piping — Part 2: Materials*

EN 13480-3:2017, *Metallic industrial piping — Part 3: Design and calculation*

EN 13480-4:2017, *Metallic industrial piping — Part 4: Fabrication and installation*

EN 13480-5:2017, *Metallic industrial piping — Part 5: Inspection and testing*

EN 13480-6:2017, *Metallic industrial piping — Part 6: Additional requirements for buried piping*

CEN/TR 13480-7:2002, *Metallic industrial piping — Part 7: Guidance on the use of conformity assessment procedures*

EN 13480-8:2017, *Metallic industrial piping — Part 8: Additional requirements for aluminium and aluminium alloy piping*

3 Terms, definitions, symbols and units

3.1 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 764-3:2002 and the following apply.

Specific definitions are given in the relevant Parts of this European Standard.

3.1.1

ambient temperature

temperature of the surrounding atmosphere in the immediate vicinity of the piping system

3.1.2

piping system

piping

pipe or system of pipes for the conveyance of fluids within an industrial site

Note 1 to entry A piping system can be regarded as one single system provided it conveys substances having the same properties and it is as a whole designed for the same allowable pressure.

Note 2 to entry Interruption by different components such as pumps, machines, vessels etc. does not preclude the integration to one single piping.

3.1.3

fluid

gases, liquids and vapours in pure phase as well as mixtures thereof

Note to entry A fluid may contain a suspension of solids.

3.1.4**manufacturer**

person or organization that takes full responsibility for the design and manufacture of the piping system and its conformity to EN 13480

Note 1 to entry The manufacturer is responsible for carrying out all relevant production processes and testing as specified in the applicable standards.

Note 2 to entry If a manufacturer employs subcontractors or fabricators/installers for certain items he is responsible for their work.

Note 3 to entry In the EC Member States a manufacturer or his representative is responsible for the conformance of a piping system he puts on the market, with the essential safety requirements of the PED.

3.1.5**piping fabricator and/or installer**

individual or organization that takes responsibility for the fabrication and/or installation of industrial piping complying with the requirements of EN 13480

Note to entry The piping fabricator or the installer may be the manufacturer

3.1.6**designer**

individual or organization that takes responsibility for the design of industrial piping complying with the requirements of EN 13480

Note to entry The designer can also be the manufacturer.

3.1.7**category**

category in which industrial piping is classified

Note to entry The category depends on the fluid contained, the maximum allowable pressure *PS* and nominal size *DN* and the physical condition of the fluid.

3.1.8**test**

physical activity (destructive or non-destructive) carried out in accordance with a defined procedure which provides an objective assessment of a characteristic of a component or system

Note to entry See Figure 3.1-1.

3.1.9**testing**

performance of a test or examination and production of a record of results and evaluation of the results compared to the requirements

Note to entry See Figure 3.1-1.

3.1.10**examination**

assessment carried out to determine or verify the acceptability of a component, system or document

Note to entry See Figure 3.1-1.

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3.1.11

inspection

activity carried out by persons independent of production to verify that the results of the testing and examinations conform to specific requirements

Note to entry See Figure 3.1-1.

3.1.12

design validation

examination of the design documents to verify that the design conforms to EN 13480

3.1.13

imperfection

discontinuity noted during testing and inspection which needs to be evaluated with respect to the acceptance criteria

3.1.14

defect

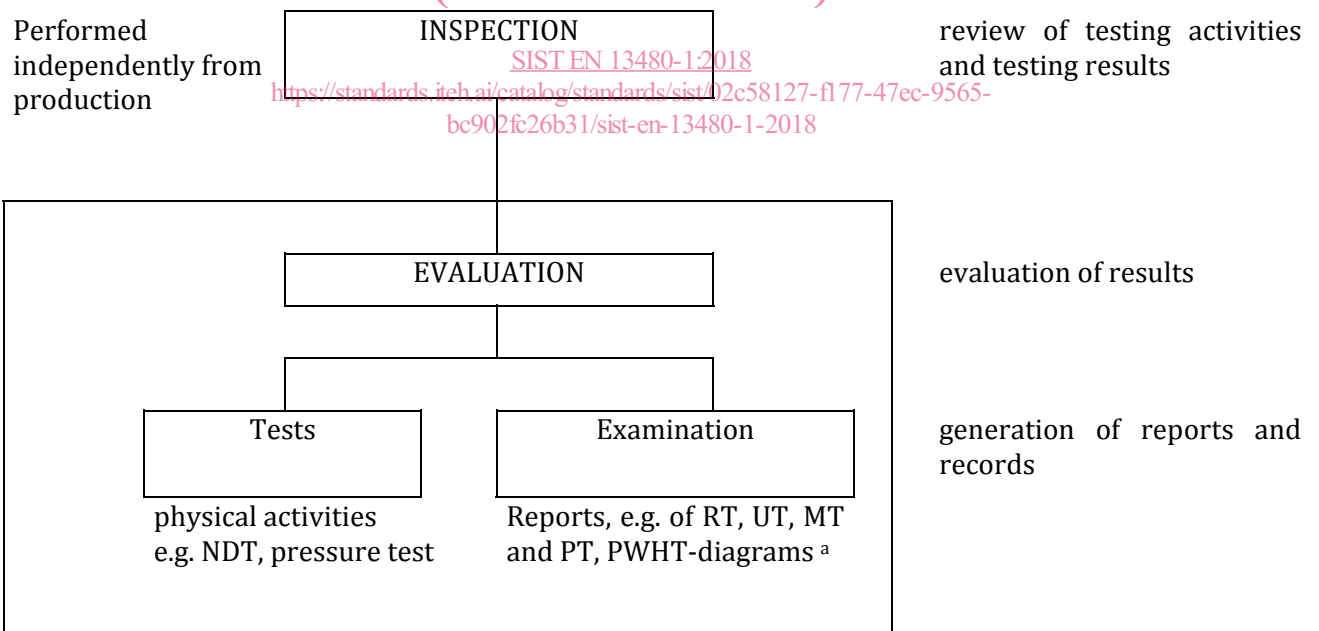
discontinuity that renders the material integrity unacceptable with respect to the acceptance level

3.1.15

repair

process of rectifying a defect in either base material or weld

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^a See EN 13480-5:2017, clause 4

Figure 3.1-1 — Scheme of inspection and testing activities

3.2 Symbols and units

For the purposes of this European Standard, the symbols and units given Table 3.2-1 and further symbols of EN 764-2 apply.

Additional symbols are given in some of the relevant Parts of this European Standard.

Table 3.2-1 — General symbols and units

Symbol	Description	Unit
A	elongation at rupture	%
D, d^a	diameters	mm
E	Modulus of elasticity	N/mm ² (MPa)
e	minimum required thickness without allowances and tolerances, to withstand pressure, calculated by the appropriate equations given in this standard	mm
R_{eH}	minimum specified value of upper yield strength at room temperature	N/mm ² (MPa)
R_m	minimum specified value of tensile strength at room temperature	N/mm ² (MPa)
$R_{m t}$	minimum specified value of tensile strength at calculation temperature when this temperature is greater than the room temperature	N/mm ² (MPa)
$R_{p0,2}$	minimum specified value of 0,2 % proof strength at room temperature	N/mm ² (MPa)
$R_{p0,2 t}$	minimum specified value of 0,2 % proof strength at calculation temperature t when this temperature is greater than the room temperature	N/mm ² (MPa)
$R_{p1,0}$	minimum specified value of 1,0 % proof strength at room temperature	N/mm ² (MPa)
$R_{p1,0 t}$	minimum specified value of 1,0 % proof strength at calculation temperature t when this temperature is greater than the room temperature	N/mm ² (MPa)
T	time	h
t	temperature	°C
ν	Poisson's ratio	-
NOTE	All pressures for calculation purposes are in N/mm ² (MPa) and PS is in bar.	
^a	The following subscripts apply:	
	o	outside
	i	inside
	m	mean

4 Interdependency of the parts of the series

Parts 2 to 6 and Part 8 of EN 13480, together with Part 1, form a consistent set of specifications which shall be followed for compliance to the standard.