

SVENSK STANDARD

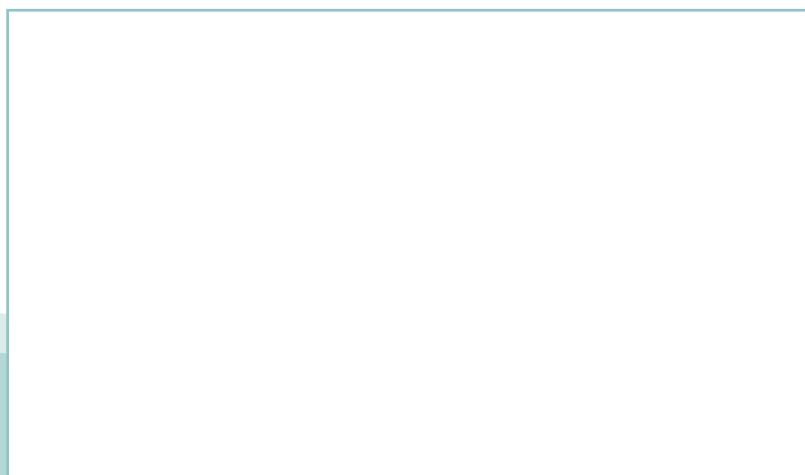
SS-EN 13480-1:2017+C2:2019



Fastställt/Approved: 2019-09-04
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 23.040.01; 23.040.09

Industriella rörledningar av metalliska material – Del 1: Allmänt

Metallic industrial piping – Part 1: General



Standarder får världen att fungera

SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.

Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

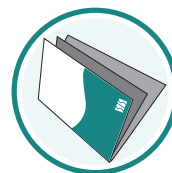
Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på www.sis.se eller ta kontakt med oss på tel 08-555 523 00.



Standards make the world go round

SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.

Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

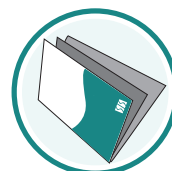
Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

If you want to know more about SIS, or how standards can streamline your organisation, please visit www.sis.se or contact us on phone +46 (0)8-555 523 00



Europastandarden EN 13480-1:2017 Issue 2 (2019-06) gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 13480-1:2017 issue 2 (2019-06).

Denna standard ersätter SS-EN 13480-1:2017, utgåva 3 och SS-EN 13480-1:2017/A1:2019, utgåva 1.

The European Standard EN 13480-1:2014 Issue 2 (2019-06) has the status of a Swedish Standard. This document contains the official English version of EN 13480-1:2017 issue 2 (2019-06).

This standard supersedes the Swedish Standard SS-EN 13480-1:2017, edition 3 and SS-EN 13480-1:2017/A1:2019, edition 1.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Uppllysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS som även lämnar allmänna uppllysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Konstruktion, tillverkning och kontroll av tryckbärande anordningar, SIS/TK 298.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

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 :
Généralité

Metallische industrielle Rohrleitungen - Teil 1:
Allgemeines

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

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 26 June 2019.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

	Page
European foreword.....	3
1 Scope.....	5
2 Normative references.....	5
3 Terms, definitions, symbols and units	6
3.1 Terms and definitions	6
3.2 Symbols and units	9
4 Interdependency of the parts of the series.....	9
5 Classification of piping.....	10
5.1 General.....	10
5.2 Piping of category 0.....	12
5.3 Piping operating ≤ 0,5 bar.....	12
5.4 Special cases.....	12
6 Requirements for Piping systems	12
7 Accessories	12
7.1 Industrial valves.....	12
7.2 Safety systems	12
Annex A (informative) Maintenance of EN 13480.....	13
A.1 Introduction	13
A.2 Scope and composition of the Working Group	13
A.3 Methods of Maintenance.....	13
A.3.1 Administration tools.....	13
A.3.2 Submission of queries and consultation of the experts	14
A.4 Results of the consultation	14
A.4.1 Practical provisions for interpretations.....	14
A.4.2 Practical provisions for corrections.....	15
Annex Y (informative) History of EN 13480-1	16
Y.1 Differences between EN 13480-1:2012 and EN 13480-1:2017	16
Y.2 List of corrected pages of Issue 2 (2019-06)	16
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2014/68/EU aimed to be covered.....	17
Bibliography.....	17

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:

- *Part 1: General;*
- *Part 2: Materials;*
- *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.

EN 13480-1:2017 (E)
Issue 2 (2019-06)

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. It is intended to deliver a new Issue of EN 13480:2017 each year, consolidating these Amendments and including other identified corrections. Issue 2 (2019-06) consolidates Amendment EN 13480-1:2017/A1:2019; it includes the corrected pages listed in Annex Y.

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.

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.

EN 13480-1:2017 (E)
Issue 2 (2019-06)

- EN 764-1:2015+A1:2016, *Pressure equipment — Part 1: Vocabulary*
- EN 764-2:2012, *Pressure equipment — Part 2: Quantities, symbols and units*
- EN 764-7:2002, *Pressure equipment — Part 7: Safety systems for unfired pressure equipment*
- 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*
- EN 16668:2016+A1:2018, *Industrial valves — Requirements and testing for metallic valves as pressure accessories*
- EN ISO 4126 (all parts), *Safety devices for protection against excessive pressure (ISO 4126, all parts)*

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 764-1:2015+A1:2016 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 1 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.