

METALLIST TÖÖSTUSTORUSTIK. OSA 3:
KAVANDAMINE JA ARVUTAMINE

Metallic industrial piping - Part 3: Design and
calculation

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 13480-3:2024 sisaldab Euroopa standardi EN 13480-3:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 24.07.2024.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 13480-3:2024 consists of the English text of the European standard EN 13480-3:2024.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 24.07.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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European foreword

This document (EN 13480-3:2024) 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of an identical text or by endorsement, at the latest by December 2024, and conflicting national standards shall be withdrawn at the latest by December 2024.

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

This document supersedes EN 13480-3:2017.

This new edition incorporates the Amendments which have been approved previously by CEN members, and the corrected pages up to Issue 5 without any further technical change. Annex Y provides details of significant technical changes between this European Standard and the previous edition.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, 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 recognized that the Parts are inter-dependant. 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 document is maintained by a working group (Maintenance Help Desk - MHD) whose scope of work is limited to corrections and interpretations related to EN 13480. The contact to submit queries can be found at <https://unm.fr/en/maintenance-agencies/maintenance-agency-en-13480/>. 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. Interpretation sheets will be posted on the website of the MHD.

Amendments to this new edition may be issued from time to time and then used immediately as alternatives to rules contained herein. These amendments will be consolidated within EN 13480:2024 in accordance with the maintenance system of EN 13480 series approved by CEN/BT Decision C172/2021.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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1 Scope

This document specifies the design and calculation of industrial metallic piping systems, including supports, covered by EN 13480 series.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 764-5:2014, *Pressure equipment — Part 5: Inspection documentation of metallic materials and compliance with the material specification*

EN 1515-2:2001, *Flanges and their joints — Bolting — Part 2: Classification of bolt materials for steel flanges, PN designated*

EN 1515-3:2005, *Flanges and their joints — Bolting — Part 3: Classification of bolt materials for steel flanges, Class designated*

EN 1515-4:2021, *Flanges and their joints — Bolting — Part 4: Selection of bolting for equipment subject to the Pressure Equipment Directive 2014/68/EU*

EN 1090-1:2009+A1:2011, *Execution of steel structures and aluminium structures — Part 1: Requirements for conformity assessment of structural components*

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EN 12516-2:2014+A1:2021, *Industrial valves — Shell design strength — Part 2: Calculation method for steel valve shells*

EN 13445-3:2021, *Unfired pressure vessels — Part 3: Design*

EN 13480-1:2024, *Metallic industrial piping — Part 1: General*

EN 13480-2:2024, *Metallic industrial piping — Part 2: Materials*

EN 13480-4:2024, *Metallic industrial piping — Part 4: Fabrication and installation*

EN 13480-5:2024, *Metallic industrial piping — Part 5: Inspection and testing*

EN ISO 5817:2023, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections (ISO 5817:2023)*

3 Terms, definitions, symbols and units

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13480-1:2024 apply.

3.2 Symbols and units

For the purposes of this document, the symbols and units given in EN 13480-1:2024 and in Table 3.2-1 apply.

Specific symbols are specified in the relevant sub-clauses.

Table 3.2-1 — General symbols and units

Symbol	Description	Unit
A	elongation at rupture	%
E	modulus of elasticity	MPa (N/mm ²)
P_{\max}	maximum pressure obtained from the design by equations or relevant procedures for a given component	MPa (N/mm ²)
PS^a	maximum allowable pressure	bar
R, r^b	Radii	mm
R_{eH}	minimum specified value of upper yield strength at room temperature	MPa (N/mm ²)
$R_{eH t}$	minimum specified value of upper yield strength at calculation temperature t^c	MPa (N/mm ²)
R_m	minimum specified value of tensile strength at room temperature	MPa (N/mm ²)
$R_{m t}$	minimum specified value of tensile strength at calculation temperature t^c	MPa (N/mm ²)
$R_{p0,2}$	minimum specified value of 0,2 % proof strength at room temperature	MPa (N/mm ²)
$R_{p0,2 t}$	minimum specified value of 0,2 % proof strength at calculation temperature t^c	MPa (N/mm ²)
$R_{p1,0}$	minimum specified value of 1,0 % proof strength at room temperature	MPa (N/mm ²)
$R_{p1,0 t}$	minimum specified value of 1,0 % proof strength at calculation temperature t^c	MPa (N/mm ²)
S_1	mean value of the stress which leads to a 1 % creep elongation in 100 000 h	MPa (N/mm ²)
S_2	mean value of the stress which leads to a 1 % creep elongation in 200 000 h	MPa (N/mm ²)