SLOVENSKI STANDARD
SIST EN 13480-3:2018/oprA1:2019

01-april-2019

Kovinski industrijski cevovodi - 3. del: Konstruiranje in izračun - Dopolnilo A1

Metallic industrial piping - Part 3: Design and calculation

Metallische industrielle Rohrleitungen - Teil 3: Konstruktion und Berechnung

Tuyauteries industrielles métalliques - Partie 3 : Conception et calcul

Ta slovenski standard je istoveten z: **EN 13480-3:2017/prA1**

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

SIST EN 13480-3:2018/oprA1:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT EN 13480-3:2017 prA1

March 2019

ICS 23.040.01

English Version

Metallic industrial piping - Part 3: Design and calculation

Tuyauteries industrielles métalliques - Partie 3 : Conception et calcul

Metallische industrielle Rohrleitungen - Teil 3: Konstruktion und Berechnung

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 267.

This draft amendment A1, if approved, will modify the European Standard EN 13480-3:2017. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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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.

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

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Ref. No. EN 13480-3:2017/prA1:2019 E

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European foreword

This document (EN 13480-3:2017/prA1:2019) has been prepared by Technical Committee CEN/TC 267 “Industrial piping and pipelines”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

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 document includes the text of the amendment itself. The amended/corrected pages of EN 13480-3:2017 will be published as Issue 2 of the European Standard.

1 Modifications to *European foreword*

In the European foreword, 8th paragraph shall read as follows:

"This European Standard is maintained by a working group (Maintenance Help Desk - MHD) whose scope of work is limited to corrections and interpretations related to EN 13480.".

2 Modifications to Clause 2, *Normative references*

In Clause 2, the following normative reference shall be changed as follows:

"EN 1591-1:2001+A1:2009, *Flanges and their joints — Design rules for gasketed circular flange connections — Part 1: Calculation method*".

3 Modifications to 3.2, *Symbols and units*

In Table 3.2-1, the following lines shall read as follows: "

c_0	corrosion or erosion allowance (see Figure 4.3-1 and Figure 4.3-2)	mm
c_1	absolute value of the negative tolerance taken from the material standard (see Figure 4.3-1 and Figure 4.3-2)	mm
c_2	thinning allowance for possible thinning during manufacturing process (see Figure 4.3-1 and Figure 4.3-2)	mm
e_a	analysis thickness of a component used for the check of the strength (see Figure 4.3-1 and Figure 4.3-2)	mm
e_n	nominal thickness on drawings (see Figure 4.3-1 and Figure 4.3-2)	mm
e_{ord}	ordered thickness (see Figure 4.3-1 and Figure 4.3-2)	mm

".

4 Modifications to 4.2.3.4, *Calculation pressure*

The last indent of sub-clause 4.2.3.4 shall read as follows:

"— compatible with the combination of TS_{max} with the pressure $P(t_{omax})$ where t_{omax} is the maximum temperature under normal operating conditions.".

NOTE 2 in sub-Clause 4.2.3.4 shall read as follows:

"NOTE 2 If there is a condition where $p_c = PS$ and $t_c = TS$, only this condition needs to be calculated.".

5 Modifications to 4.3, *Thickness*

In sub-clause 4.3, the order of the 3rd and 4th paragraphs shall be inverted.

6 Modifications to 4.6, *Dimensioning of piping components subject to pressure*

In sub-clause 4.6, 3rd paragraph shall read as follows:

"If the component under consideration is subjected to significant section moments resulting from connected piping, the rules of 12.4 shall apply.".

7 Modifications to 5.2.1, *Steels other than austenitic steels*

Sub-clause 5.2.1.2 shall read as follows:

"The designer shall ensure that the nominal design stress f_{test} under the proof test conditions, given in EN 13480-5, does not exceed 95 % R_{eH} or 95 % $R_{p0,2}$ at specified test temperature.".

8 Modifications to 5.2.4, *Steels castings*

Heading of sub-clause 5.4.2 shall read as follows:

"**5.2.4.2 Test conditions**".

9 Modifications to 5.2.5.1, *General*

The 1st paragraph of 5.2.5.1 shall read as follows: "

"Steels with no specific control are those not possessing a test report 2.2, 3.1 or 3.2 in accordance with EN 10204, and shall only be used if permitted in the technical specification.".

10 Modifications to 5.2.5.2, *Design conditions*

The 1st paragraph of 5.2.5.2 shall read as follows:

"The design stress given in 5.2.1.1 and in 5.2.2.1 shall be divided by an additional safety factor which shall not be less than 1,2.".

11 Modifications to 5.3.2.1, *Design conditions*

Table 5.3.2-1 shall read as follows: "

Table 5.3.2–1 — Safety factor as a function of mean creep rupture strength related to time

Design lifetime [a]	Without surveillance of creep exhaustion [c]		With surveillance of creep exhaustion [c]	
T [h]	Mechanical property	Sf_{cr}	Mechanical property	Sf_{cr}
$10\,000 \le T \le 100\,000$	$S_{R\,T\,t}$	1,5	$S_{R\,T\,t}$	1,25
$100\,000 < T < 200\,000$	$S_{R\,T\,t}$ [d]	1,5 [d]	$S_{R\,T\,t}$	1,25
$T = 200\,000$	$S_{R\,T\,t}$ [d]	1,5 [d]	$S_{R\,200\,000\,h\,t}$ $S_{R\,150\,000\,h\,t}$ [b] $S_{R\,100\,000\,h\,t}$ [b]	1,25 1,35 1,5

[a] If the design lifetime is not specified, the mean creep rupture strength at 200 000 h shall be used with the associated Sf_{cr}.

[b] Only in cases where the 200 000 h values are not specified in the material standards, the mean creep rupture strength at 150 000 h or 100 000 h shall be used for a design lifetime of 200 000 h with the associated Sf_{cr}.

[c] Surveillance by means of non-destructive testing and/or additional calculations of creep damage, D_c.

[d] Allowed only if $\frac{S_{R200000ht}}{S_{R100000ht}} \ge 0{,}781$ to ensure that 60 % of theoretical creep damage are not exceeded at 200 000 h.

".

12 Modifications to 6.2, *Pipe bends and elbows*

In sub-clause 6.2, 1st paragraph shall read as follows:

"There are two methods for calculating the wall thickness of elbows as well as the wall thickness of pipe bends (see 6.2.3.1 and 6.2.3.2). The chosen method shall be used in its entirety.".

Table 6.2.2-1 shall read as follows: "

Table 6.2.2–1 — Additional symbols for the purposes of 6.2

Symbol	Description	Unit
e_{int}	minimum required thickness without allowances and tolerances for a bend on the intrados	mm
e_{ext}	minimum required thickness without allowances and tolerances for a bend on the extrados	mm
R	radius of bend or elbow	mm

".

13 Modifications to 6.4.3, *Specific symbols and abbreviations*

Table 6.4.3-1 shall read as follows: "

Table 6.4.3–1 — Additional symbols for the purposes of 6.4

Symbols	Description
D_c	the mean diameter of the cylinder at the junction with the cone; mm
D_e	the outside diameter of the cone; mm
D_i	the inside diameter of the cone; mm
D_K	a diameter given by equation (6.4.4-7); mm
D_m	the mean diameter of the cone; mm
e_{con}	required thickness of cone as determined in 6.4.4; mm
e_{cyl}	required thickness of cylinder as determined in 6.1; mm
e_j	a required or analysis thickness at a junction at the large end of a cone; mm
e_1	required thickness of cylinder at junction; mm
e_{1a}	analysis reinforcing thickness in cylinder; mm
e_2	required thickness of cone and knuckle at junction; mm
e_{2a}	analysis reinforcing thickness in cone; mm
f	the nominal design stress. In the design of junctions to 6.4.6 to 6.4.9 it is the lowest of values for the individual component parts; MPa (N/mm^2)
l_1	length along cylinder; mm
l_2	length along cone at large or small end; mm
r_i α	inside radius of knuckle mm the semi angle of cone at apex (degrees);
β	a factor defined in 6.4.6;
β_H	a factor defined in 6.4.8;
γ	a factor defined in 6.4.7;
ρ	a factor defined in 6.4.7;
τ	a factor defined in 6.4.8.

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