SLOVENSKI STANDARD
SIST EN 13480-3:2002/A3:2009

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Kovinski industrijski cevovodi - 3. del: Konstruiranje in izračun

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 13480-3:2002/A3:2009**

ICS:

77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use

SIST EN 13480-3:2002/A3:2009 **en,fr,de**

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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 amendment A3 modifies the European Standard EN 13480-3:2002; it was approved by CEN on 3 May 2008.

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

This amendment 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 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

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Foreword

This document (EN 13480-3:2002/A3:2009) has been prepared by Technical Committee CEN/TC 267 “Industrial piping and pipelines”, the secretariat of which is held by AFNOR.

This Amendment to the European Standard EN 13480-3:2002 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2009, and conflicting national standards shall be withdrawn at the latest by July 2009.

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 European Standard contains changes in Clause 2, in subclauses 8.4.3, 13.1.4, 13.3.1, C.1.1, D.4.1, in Annexes E, H and N, and in the Bibliography of EN 13480-3:2002.

The document includes the text of the amendment itself. The corrected pages of EN 13480-3 will be delivered as issue 11 of the standard.

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, 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 the United Kingdom.

1 Modification to Clause 2

Delete the normative reference to EN 10204:1991 and to EN 288 (all parts) and replace with the following new references:

"EN 10204:2004, *Metallic products — Types of inspection documents*

EN ISO 15614-1:2004, *Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2004)*"

2 Modification to subclause 8.4.3

At the end of 8.4.3 a) and before Figure 8.4.3-1, add the following text:

"l_b and l_s, given by equations 8.4.3-1 and 8.4.1-2 are maximum lengths for reinforcement calculation.
Where so calculated, the established dimension shall be verified on the manufactured part. If the design shows a shorter length as given by equations 8.4.1-2 and 8.4.3-1, this shall be considered by the reinforcement calculation."

Delete Figure 8.4.3-3 and replace with the following new Figure:

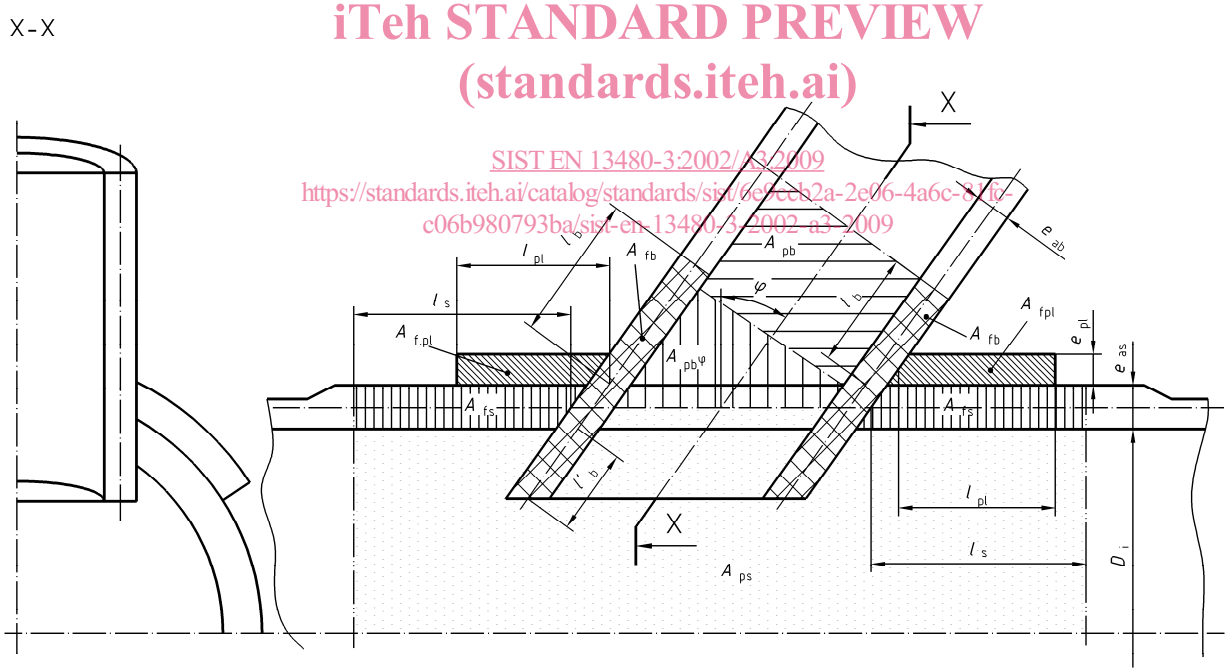


Figure 8.4.3-3 — Reinforcement of oblique branch connection in cylindrical or conical shell

3 Modification to subclause 13.1.4

Delete the key of Figure 13.1.4-2 and replace with the following new key:

"**Key**
(A) pipe
(B1) pipe clamp
(B2) supporting element
(B3) secondary or intermediate steel work
(C) structure"

Delete the key of Figure 13.1.4-3 and replace with the following new key:

"**Key**
(A) pipe
(B1) pipe clamp
(B2) supporting element
(C1) bolts as part of structure
(C2) concrete structure"

4 Modification to subclause 13.3.1

At the end of the first paragraph of 13.3.1, add the following text:

"When applying type-tested parts, operating temperature shall be considered."

5 Modification to subclause C.1.1

In C.1.1, at the end of the third paragraph, add the following sentence:

"For the design of expansion joints, see prEN 14917."

6 Modification to subclause D.4.1

At the end of D.4.1, add the following text:

"Flanges made from plate are allowed if there is a safeguard regarding lamellar tearing (reduction of area within the thickness). This implies that ductility requirements in the thickness direction, for the plate to be used, shall be specified."

7 Modification to subclause E.2.1.1

In E.2.1.1, replace equations (E.2.1-1), (E.2.1-2) and (E.2.1-3) by the following equations:

$$\text{"}\cos\alpha = \frac{X}{R + 0{,}5\,D_o} \qquad \text{(E.2.1-1)}$$

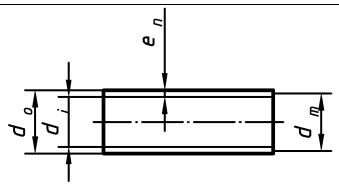
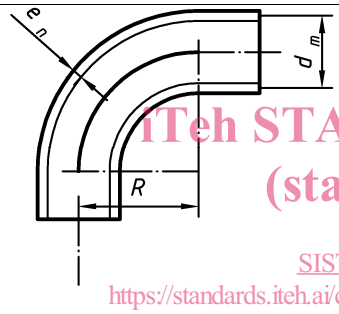
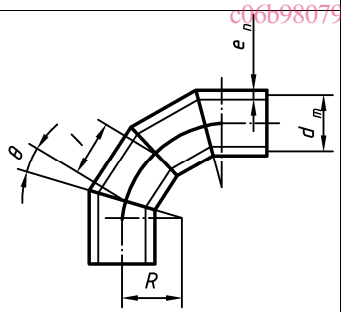
$$\cos\beta = \frac{X - 0{,}5\,d_o}{R + 0{,}5\,D_o} \qquad \text{(E.2.1-2)}$$

$$\cos\gamma = \frac{X + 0{,}5\,d_o}{R + 0{,}5\,D_o} \qquad \text{(E.2.1-3)"}$$

8 Modification to Annex H

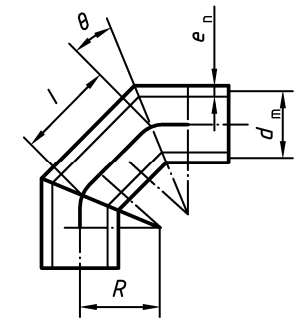
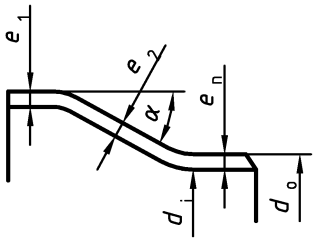
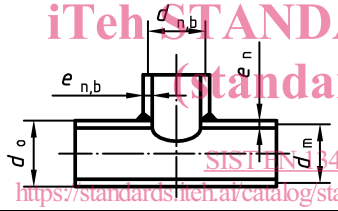
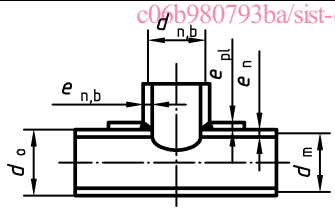
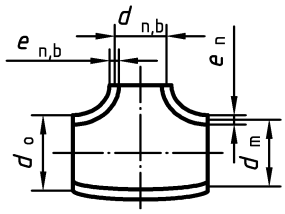
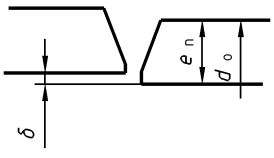
Delete Table H.1 and Table H.3 and replace with the following new Table H.1 and new Table H.3.

Table H.1 — Flexibility characteristics, flexibility and stress intensification factors and section moduli for general cases

N°	Designation	Sketch	Flexibility characteristic *h*	Flexibility factor k_B [a]	Stress intensification factor *i*	Section modulus *Z*
1	straight pipe		1	1	1	$\frac{\pi}{32}\frac{d_o^4 - d_i^4}{d_o}$
2	plain bend		$\frac{4Re_n}{d_m^2}$	$\frac{1{,}65}{h}$	$\frac{0{,}9}{h^{2/3}}$ [b c]	
3	Closely spaced mitre bend $l < r\,(1 + \tan\theta)$ $(l = 2\,R\tan\theta)$		$\frac{4Re_n}{d_m^2}$ with $R = \frac{l\cot\theta}{2}$	$\frac{1{,}52}{h^{5/6}}$	$\frac{0{,}9}{h^{2/3}}$ [b c]	

(to be continued)

Table H.1 *(continued)*

N°	Designation	Sketch	Flexibility characteristic h	Flexibility factor k_B [a]	Stress intensification factor i	Section modulus Z
4	Single mitre bend or widely spaced mitre bend $l \geq r\,(1 + \tan\theta)$		$\frac{4Re_n}{d_m^2}$ with $R = \frac{d_m(1+\cot\theta)}{4}$	$\frac{1{,}52}{h^{5/6}}$	$\frac{0{,}9}{h^{2/3}}$ [b]	
5	forged welded-in reducer		Shape conditions : $\alpha \leq 60°$ $e_n \geq d_o/100$ $e_2 \geq e_1$	1	$0{,}5 + \frac{\alpha}{100}\left(\frac{d_o}{e_n}\right)^{1/2}$ max. 2,0 (α in deg.) [d]	
6	tee with welded-on, welded-in or extruded nozzle		$\frac{2e_n}{d_m}$	1	$\frac{0{,}9}{h^{2/3}}$ [b e]	Header : $\frac{\pi}{32}\frac{d_o^4 - d_i^4}{d_o}$
7	as above, however, with additional reinforcing ring		$\frac{2(e_n + 0{,}5e_{pl})^{5/2}}{d_m e_n^{3/2}}$ with $e_{pl} \leq e_n$	1	$\frac{0{,}9}{h^{2/3}}$ [b e]	Nozzle $\frac{\pi}{4} d_{n,b}^2 e_x$
8	forged welded-in tee with e_n and $e_{n,b}$ as connecting wall thickness		$\frac{8{,}8e_n}{d_m}$	1	$\frac{0{,}9}{h^{2/3}}$ [b g]	with e_x as smaller value of $e_{x1} = e_n$ and $e_{x2} = i\,e_{n,b}$ resp.
9	butt weld		$e_n \leq 5$mm and $\delta \leq 0{,}1e_n$ [f] $e_n < 5$mm and $\delta > 0{,}1e_n$ [f]	1 1	1,0 [f] 1,8 [f]	

(to be continued)