EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12953-3:2016/AC:2024

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ICS 27.060.30; 27.100

English version

Shell boilers - Part 3: Design and calculation for pressure parts

Chaudières à tubes de fumée - Partie 3: Conception et calcul des parties sous pression

Großwasserraumkessel - Teil 3: Konstruktion und Berechnung für drucktragende Teile

This corrigendum becomes effective on 3 July 2024 for incorporation in the official English version of the EN.

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

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1 Modification to 12.1, Thickness of straight tubes subject to external pressure

Replace the existing subclause 12.1 with the following:

“

12.1 Thickness of straight tubes subject to external pressure

The wall thickness $e_t - c_1$ (ordered nominal thickness minus tolerance) of straight tubes ≤ 170 mm nominal outside diameter, subjected to external pressure, shall be greater or equal than the maximum given by Formulae (65), (66) or Table 7.

$$e_{ct,el.} = d_0 \sqrt[3]{\frac{pS_2(1-\nu^2)}{2\,E}} + c_{2,red.} \tag{65}$$

$$e_{ct,pl.} = \frac{p\,d_0}{1,6\,f} + c_2 \tag{66}$$

where

$e_{ct,el}$	required wall thickness of straight tubes with reference to elastic buckling
$e_{ct,pl}$	required wall thickness of straight tubes with reference to plastic deformation
c_2 = 0,75 mm	allowance for metal wastage
$c_{2,\,red}$ = 0,3 mm	reduced allowance for metal wastage effective on elastic buckling
ν	Poisson's ratio
S_2	safety factor (S_2 = 3,0; see 13.1.3).

NOTE For ferritic steel the Poisson’s ratio ν = 0,3 can be used.

Table 7 — Minimum thickness of tubes

Dimensions in millimetres

Nominal outside diameter	Minimum thickness $e_t - c_1$
$d_0 \leq 26,9$	1,90
$26,9 < d_0 \leq 54,0$	2,20
$54,0 < d_0 \leq 76,1$	2,50
$76,1 < d_0 \leq 88,9$	2,80
$88,9 < d_0 \leq 114,3$	3,15
$114,3 < d_0 \leq 139,7$	3,50
$139,7 < d_0 \leq 168,3$	3,99

.”.