SLOVENSKI STANDARD
SIST EN 13445-3:2002/A3:2009

01-februar-2009

Neogrevane tlaļne posode - 3. del: Konstruiranje

Unfired pressure vessels - Part 3: Design

Unbefeuerte Druckbehälter - Teil 3: Konstruktion

Récipients sous pression non soumis a la flamme - Partie 3: Conception

Ta slovenski standard je istoveten z: **EN 13445-3:2002/A3:2007**

ICS:

23.020.30	Tlaļne posode, plinske jeklenke	Pressure vessels, gas cylinders

SIST EN 13445-3:2002/A3:2009 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13445-3:2002/A3

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English Version

Unfired pressure vessels - Part 3: Design

Récipients sous pression non soumis à la flamme - Partie 3: Conception

Unbefeuerte Druckbehälter - Teil 3: Konstruktion

This amendment A3 modifies the European Standard EN 13445-3:2002; it was approved by CEN on 29 December 2006.

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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
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Foreword

This document (EN 13445-3:2002/A3:2007) has been prepared by Technical Committee CEN/TC 54 “Unfired pressure vessels”, the secretariat of which is held by BSI.

This Amendment to the European Standard EN 13445-3:2002 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2007, and conflicting national standards shall be withdrawn at the latest by October 2007.

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.

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.

This amendment is based on EN 13445-3:2002 up to issue 16 (October 2005).

The document includes the text of the amendment itself. The corrected pages of EN 13445-3 will be delivered as issue 26 of the standard.

Modify the heading of 6.2 as follows:

6.2 Steels (except castings) other than austenitic steels covered by 6.4 and 6.5

Introduce a new sub-clause 6.3 as follows (renumber current 6.3 as 6.4 etc):

6.3 Alternative route for steels (except castings) other than austenitic steels covered by 6.4 and 6.5

Alternative route allows the use of higher nominal design stress with an equivalent overall level of safety if all of the following conditions are met:

a) Material requirements as specified in EN 13445-2 for Design by Analysis – Direct Route.

b) Restriction in construction and welded joints as specified in Clause 5 and in Annex A of EN 13445-3:2002 for Design by Analysis – Direct Route.

c) All welds which must be tested by non-destructive testing (NDT) according to the requirements of EN 13445-5 shall be accessible to NDT during manufacture and also for in-service inspection.

d) Fatigue analysis according to Clause 17 or 18 in all cases.

e) Fabrication requirements as specified in EN 13445-4 for Design by Analysis – Direct Route.

f) NDT as specified in EN 13445-5 for Design by Analysis – Direct Route.

g) Appropriate detailed instructions for in-service inspections are provided in the operating instructions of the manufacturer.

NOTE Until sufficient in-house experience can be demonstrated, the involvement of an independent body, appropriately qualified, is recommended for the assessment of the design (calculations) and for assurance that all requirements are met in materials, fabrication and NDT.

6.3.1 Normal operating load cases

Copy sub-clause 6.2.1 and in second indent replace 2,4 with 1,875.

6.3.2 Testing load cases

Copy sub-clause 6.2.2.

Renumber the whole of sub-clause 6.3 as 6.4:

Modify the title of 6.4:

6.4 Austenitic steels (except castings) with a minimum rupture elongation, as given in the relevant technical specification for the material, from 30 % to 35 %

6.4.1 Normal operating load cases

6.4.2 Testing load cases

Renumber the whole of sub-clause 6.4 as 6.5:

6.5 Austenitic steels (except castings) with a minimum rupture elongation, as given in the relevant technical specification for the material, from 35 %

In sub-clause 6.5.1, change the second line to:

6.5.1 Normal operating load cases

a) that derived from 6.4.1; or

In sub-clause 6.5.2, change the second line to:

6.5.2 Testing load cases

a) The value derived from 6.4.2; and

Renumber the whole of sub-clause 6.5 as 6.6:

6.6 Cast Steels

Replace Table 6-1 with the following:

Table 6-1 — Maximum allowed values of the nominal design stress for pressure parts other than bolts

Steel designation	Normal operating load cases[a b]	Testing and exceptional load cases[b c]
Steels as per 6.2 $A < 30\ \%$ [d]	$f_d = \min\left(\frac{R_{p0,2/t}}{1,5}; \frac{R_{m/20}}{2,4}\right)$	$f_{test} = \left(\frac{R_{p0,2/t_{test}}}{1,05}\right)$
Steels as per 6.3: Alternative route $A < 30\ \%$ [d]	$f_d = \min\left(\frac{R_{p0,2/t}}{1,5}; \frac{R_{m/20}}{1,875}\right)$	$f_{test} = \left(\frac{R_{p0,2/t_{test}}}{1,05}\right)$
Austenitic steels as per 6.4 $30\ \% \le A < 35\ \%$ [d]	$f_d = \left(\frac{R_{p1,0/t}}{1,5}\right)$	$f_{test} = \left(\frac{R_{p1,0/t_{test}}}{1,05}\right)$
Austenitic steels as per 6.5 $A \ge 35\ \%$ [d]	$f_d = \max\left[\left(\frac{R_{p1,0/t}}{1,5}\right); \min\left(\frac{R_{p1,0/t}}{1,2}; \frac{R_{m/t}}{3}\right)\right]$	$f_{test} = \max\left[\left(\frac{R_{p1,0/t_{test}}}{1,05}\right); \left(\frac{R_{m/t_{test}}}{2}\right)\right]$
Cast steels as per 6.6	$f_d = \min\left(\frac{R_{p0,2/t}}{1,9}; \frac{R_{m/20}}{3}\right)$	$f_{test} = \left(\frac{R_{p0,2/t_{test}}}{1,33}\right)$

a For testing group 4 the nominal design stress shall be multiplied by 0,9.

b Yield strength R_{eH} may be used in lieu of $R_{p0,2}$ if the latter is not available from the material standard.

c See 5.3.2 and 6.1.2

d For definition of rupture elongation, see EN 13445-2:2002, Clause 4.