SLOVENSKI STANDARD
SIST EN 13445-2:2014/oprA8:2019

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Neogrevane (nekurjene) tlačne posode - 2. del: Materiali - Dopolnilo A8

Unfired pressure vessels - Part 2: Materials

Unbefeuerte Druckbehälter - Teil 2: Werkstoffe

Récipients sous pression non soumis à la flamme - Partie 2 : matériaux

Ta slovenski standard je istoveten z: EN 13445-2:2014/prA8

ICS:

23.020.32 Tlačne posode Pressure vessels

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EUROPEAN STANDARD

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English Version

Unfired pressure vessels - Part 2: Materials

Récipients sous pression non soumis à la flamme - Partie 2 : matériaux

Unbefeuerte Druckbehälter - Teil 2: Werkstoffe

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 54.

This draft amendment A8, if approved, will modify the European Standard EN 13445-2:2014. 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.

This draft amendment was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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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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European foreword

This document (EN 13445-2:2014/prA8:2019) has been prepared by Technical Committee CEN/TC 54 “Unfired pressure vessels”, the secretariat of which is held by BSI.

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 EN 13445-2:2014.

This document includes the text of the amendment itself. The amended/corrected pages of EN 13445-2:2014 will be published in the new Issue of the European Standard.

1 Modification of 3.1.2

Replace "T_S" by "T_A" and accordingly in the whole EN 13445-2.

2 Modification to 4.1.7

Replace Table 4.1-1 with the following:

"

Steel group (according to Table A-1)	Maximum content of cast analysis		
	% C	% P	% S
Steels (1 to 6 and 9)	0,23[a]	0,035	0,025
Steels (1 to 6 and 9) when DBA – Direct Route is used [c]	0,20	0,025	0,015
Ferritic stainless steels (7.1)	0,08	0,040	0,015
Martensitic stainless steels (7.2)	0,06	0,040	0,015
Austenitic stainless steels (8.1) (8.3)	0,08	0,045	0,015[b]
Austenitic stainless steels (8.2)	0,10	0,035	0,015
Austenitic-ferritic stainless steels (10)	0,030	0,035	0,015

[a] Maximum content of product analysis 0,25 %.

[b] For products to be machined a controlled sulphur content of 0,015 % to 0,030 % is permitted by agreement provided the resistance to corrosion is satisfied for the intended purpose.

[c] In addition the ratio on thickness reduction (ratio of initial thickness of slab/ingot to the thickness of the final plate) shall be equal or greater than:

— 4 for NL2 steels and steels of material group 9;

— 3 for other materials.

".

3 Modification to Annex A

Replace Table A-1 with the following:

"Table A-1 — Grouping system for steels (extract from CEN ISO/CR 15608:2017)

Group	Sub-group	Type of steel
1		Steels with a specified minimum yield strength $R_{eH} \leq 460$ MPa [a] and with analysis in %: C ≤ 0,25 Si ≤ 0,60 Mn ≤ 1,70 Mo ≤ 0,70[b] S ≤ 0,045 P ≤ 0,045 Cu ≤ 0,40[b] Ni ≤ 0,5[b] Cr ≤ 0,3 (0,4 for castings)[b] Nb ≤ 0,05 V ≤ 0,12[b] Ti ≤ 0,05
	1.1	Steels with a specified minimum yield strength $R_{eH} \leq 275$ MPa
	1.2	Steels with a specified minimum yield strength 275 MPa < $R_{eH} \leq 360$ MPa
	1.3	Normalised fine grain steels with a specified minimum yield strength $R_{eH} > 360$ MPa
	1.4	Steels with improved atmospheric corrosion resistance whose analysis may exceed the requirements for the single elements as indicated under 1
2		Thermomechanically treated fine grain steels and cast steels with a specified minimum yield strength $R_{eH} > 360$ MPa
	2.1	Thermomechanically treated fine grain steels and cast steels with a specified minimum yield strength 360 MPa < $R_{eH} \leq 460$ MPa
	2.2	Thermomechanically treated fine grain steels and cast steels with a specified minimum yield strength $R_{eH} > 460$ MPa
3		Quenched and tempered steels and precipitation hardened steels except stainless steels with a specified minimum yield strength $R_{eH} > 360$ MPa
	3.1	Quenched and tempered steels with a specified minimum yield strength 360 MPa < $R_{eH} \leq 690$ MPa
	3.2	Quenched and tempered steels with a specified minimum yield strength $R_{eH} > 690$ MPa
	3.3	Precipitation hardened steels except stainless steels

Table A-1 (*concluded*)

Group	Sub-group	Type of steel
4		Low vanadium alloyed Cr-Mo-(Ni) steels with Mo ≤ 0,7 % and V ≤ 0,1 %
	4.1	Steels with Cr ≤ 0,3 % and Ni ≤ 0,7 %
	4.2	Steels with Cr ≤ 0,7 % and Ni ≤ 1,5 %
5		Cr-Mo steels free of vanadium with C ≤ 0,35 %[c]
	5.1	Steels with 0,75 % ≤ Cr ≤ 1,5 % and Mo ≤ 0,7 %
	5.2	Steels with 1,5 % < Cr ≤ 3,5 % and 0,7 < Mo ≤ 1,2 %
	5.3	Steels with 3,5 % < Cr ≤ 7,0 % and 0,4 < Mo ≤ 0,7 %
	5.4	Steels with 7,0 % < Cr ≤ 10 % and 0,7 < Mo ≤ 1,2 %
6		High vanadium alloyed Cr-Mo-(Ni) steels
	6.1	Steels with 0,3 % ≤ Cr ≤ 0,75 %, Mo ≤ 0,7 % and V ≤ 0,35 %
	6.2	Steels with 0,75 % < Cr ≤ 3,5 %, 0,7 % < Mo ≤ 1,2 % and V ≤ 0,35 %
	6.3	Steels with 3,5 % < Cr ≤ 7,0 %, Mo ≤ 0,7 % and 0,45 % ≤ V ≤ 0,55 %
	6.4	Steels with 7,0 % < Cr ≤ 12,5 %, 0,7 % < Mo ≤ 1,2 % and V ≤ 0,35 %
7		Ferritic, martensitic or precipitation hardened stainless steels with C ≤ 0,35 % and 10,5 % ≤ Cr ≤ 30 %
	7.1	Ferritic stainless steels
	7.2	Martensitic stainless steels
	7.3	Precipitation hardened stainless steels
8		Austenitic steels
	8.1	Austenitic stainless steels with Cr ≤ 19 %
	8.2	Austenitic stainless steels with Cr > 19 %
	8.3	Manganese austenitic stainless steels with 4 % < Mn ≤ 12 %
9		Nickel alloyed steels with Ni ≤ 10 %
	9.1	Nickel alloyed steels with Ni ≤ 3 %
	9.2	Nickel alloyed steels with 3 % < Ni ≤ 8 %
	9.3	Nickel alloyed steels with 8 % < Ni ≤ 10 %
10		Austenitic ferritic stainless steels (duplex)
	10.1	Austenitic ferritic stainless steels with Cr ≤ 24 % and Ni ≤ 4%
	10.2	Austenitic ferritic stainless steels with Cr > 24 % and Ni ≥ 4%
	10.3	Austenitic ferritic stainless steels with Cr > 24 % and Ni ≤ 4%

[a] In accordance with the specification of the steel product standards, R_{eH} may be replaced by $R_{p0,2}$ or $R_{t0.5}$.

[b] A higher value is accepted provided that Cr + Mo + Ni + Cu + V ≤ 0,75 %.

[c] "Free of vanadium" means not deliberately added to the material.

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