



**SLOVENSKI STANDARD**  
**SIST EN 12516-4:2015/oprA1:2016**  
**01-november-2016**

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**Industrijski ventili - Trdnost ohišja - 4. del: Metoda za izračun ohišij kovinskih ventilov, ki niso iz jekla - Dopolnilo A1**

Industrial valves - Shell design strength - Part 4: Calculation method for valve shells manufactured in metallic materials other than steel

Industriearmaturen - Gehäusefestigkeit - Teil 4: Berechnungsverfahren für drucktragende Gehäuse von Armaturen aus anderen metallischen Werkstoffen als Stahl

Robinetterie industrielle - Résistance mécanique des enveloppes - Partie 4: Méthode de calcul relative aux enveloppes d'appareils de robinetterie en matériaux métalliques autres que l'acier

**Ta slovenski standard je istoveten z: EN 12516-4:2014/prA1**

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**ICS:**

23.060.01      Ventili na splošno      Valves in general

**SIST EN 12516-4:2015/oprA1:2016      en**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**EN 12516-4:2014**  
**prA1**

November 2016

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ICS 23.060.01

English Version

## Industrial valves - Shell design strength - Part 4: Calculation method for valve shells manufactured in metallic materials other than steel

Robinetterie industrielle - Résistance mécanique des enveloppes - Partie 4 : Méthode de calcul relative aux enveloppes d'appareils de robinetterie en matériaux métalliques autres que l'acier

Industriearmaturen - Gehäusefestigkeit - Teil 4: Berechnungsverfahren für drucktragende Gehäuse von Armaturen aus anderen metallischen Werkstoffen als Stahl

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 69.

This draft amendment A1, if approved, will modify the European Standard EN 12516-4:2014. 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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 12516-4:2014/prA1:2016) has been prepared by Technical Committee CEN/TC 69 “Industrial valves”, 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.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

EN 12516 comprises the following parts:

- *Industrial valves — Shell design strength — Part 1: Tabulation method for steel valve shells;*
- *Industrial valves — Shell design strength — Part 2: Calculation method for steel valve shells;*
- *Valves — Shell design strength — Part 3: Experimental method;*
- *Industrial valves — Shell design strength — Part 4: Calculation method for valve shells manufactured in metallic materials other than steel.*

## EN 12516-4:2014/prA1:2016 (E)

**1 Modification to 5.2.3, Pressure/temperature ratings for cast iron**

Replace 5.2.3.2 with the following numbered entry:

"

**5.2.3.2** The use of valves at temperatures lower than  $-10\text{ °C}$  is permitted, provided that their shells and bonnets are manufactured in spheroidal graphite cast iron of grades EN-GJS-350-22-LT or EN-GJS-400-18-LT, see Table 7. For temperatures lower than  $-10\text{ °C}$ , the maximum allowable pressure shall not be higher than the maximum pressure of the PN rating (e.g. 10 bar for PN 10, 25 bar for PN 25). The lowest calculation temperature shall not be less than the temperature specified for Charpy impact testing in accordance with EN 1563.

**Table 7 — Allowable material grades for low temperature (LT) design conditions**

Symbol	Number	Temperature limits
EN-GJS-350-22-LT	5.3100	$-40\text{ °C}$ to $350\text{ °C}$
EN-GJS-400-18-LT	5.3103	$-20\text{ °C}$ to $350\text{ °C}$

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**2 Modification to 5.5.2, Materials other than aluminium**

Replace Table 17 by the following table:

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**Table 17 — Nominal design stresses for design conditions  $f$  in MPa (allowable stresses)**

Material	Nominal design stress $f_{d/t}$ for design conditions at calculation temperature $t$
EN-GJL-200 EN-GJL-250	$f_{d/20} = R_{m/20} / 9$
EN-GJMB-300-6 EN-GJMB-350-10	$f_{d/20} = R_{m/20} / 7$ $f_{d/t} = R_{p0,2/t} / 4,0$
EN-GJS-350-22-LT EN-GJS-350-22-RT EN-GJS-400-18-LT EN-GJS-400-18-RT EN-GJS-400-18	$f_{d/t} = R_{p0,2/t} / 2,4$
EN-GJS-400-15	$f_{d/t} = R_{p0,2/t} / 3,5$
EN-GJS-450-10 EN-GJS-500-7	$f_{d/t} = R_{p0,2/t} / 4,0$
EN-GJS-600-3 EN-GJS-700-2	$f_{d/t} = R_{p0,2/t} / 5,0$
Copper and copper alloys including rolled and cast copper-tin alloys	$f_{d/t} = \min (R_{p0,2/t} / 1,5 ; R_{p1,0/t} / 1,5 ; R_{p1,0 \text{ creep strain limit}/t} / 1,0)$ for SF-Cu (seamless and welded components): $f_{d/t} = R_{m/20}/3,5$ for SF-Cu (soldered/brazed components): $f_{d/t} = R_{m/20}/4,0$
Aluminium and aluminium alloys — wrought materials	$f_{d/t} = R_{p0,2/t} / 1,5$

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### 3 Modification to Annex ZA (informative), Relationship between this European Standard and the Essential Requirements of EU Directive 97/23/EC (PED)

Replace Annex ZA with the following annex:

"

## Annex ZA (informative)

### Relationship between this European Standard and the essential Requirements of EU Directive 2014/68/EU (PED) aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/071 to provide one voluntary means of conforming to essential requirements of Directive 2014/68/EU Pressure Equipment Directive.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Annex I of  
Directive 2014/68/EU**

Essential Requirements of Annex I of Directive 2014/68/EU	Clauses/subclauses of this EN	Remarks/Notes
2.2.2, 2.2.3	5.2.2, 5.3.2, 5.4.2	
2.6	Clause 4	
4.1 a), 4.2 a)	5.2.1, 5.3.1, 5.4.1	
7.1.2	5.5.1	

**WARNING 1** — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

**WARNING 2** — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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