



SLOVENSKI STANDARD
SIST EN 1984:2011

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Nadomešča:
SIST EN 1984:2001

Industrijski ventili - Jekleni zasuni

Industrial valves - Steel gate valves

Industriearmaturen - Schieber aus Stahl

Robinetterie industrielle - Robinets-vannes en acier

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ICS:

23.060.30 Zapirni ventili (zasuni) Gate valves

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EUROPEAN STANDARD
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Supersedes EN 1984:2000

English Version

Industrial valves - Steel gate valves

Robinetterie industrielle - Robinets-vannes en acier

Industriearmaturen - Schieber aus Stahl

This European Standard was approved by CEN on 9 April 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a 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 European Standard 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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Foreword

This document (EN 1984:2010) has been prepared by Technical Committee CEN/TC 69 "Industrial valves", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.

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 supersedes EN 1984:2000.

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 97/23/EC.

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

- 1) The normative references were updated in Clauses 2, 4, 5, 8.
- 2) The Bibliography was deleted;
- 3) In Table ZA.1, sub-clauses 4.2.3 and 5.1 were correlated to PED Annex I, sections 3.2.2 and 7.4;
- 4) In Table ZA.1, sub-clause 4.1 was correlated to PED Annex I, section 2.1.

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, Croatia, 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.

EN 1984:2010 (E)**1 Scope**

This European Standard specifies the requirements for steel gate valves which are wrought, cast or fabricated with end connections flanged, butt welding, socket welding or threaded.

This European Standard is applicable to steel gate valves mainly used for industrial and general purpose applications. However they can be used for other applications provided the requirements of the relevant performance standards are met.

The ranges of nominal sizes covered is:

DN 8; DN 10; DN 12; DN 15; DN 20; DN 25; DN 32; DN 40; DN 50; DN 65; DN 80; DN 100; DN 125; DN 150; DN 200; DN 250; DN 300; DN 350; DN 400; DN 450; DN 500; DN 600; DN 700; DN 750; DN 800; DN 900; DN 1000.

DN 750 is used for Class designated valves only.

DN 8 and DN 12 are not used for flanged end connections.

Socket welding end valves and threaded end valves are limited to the range DN 8 to DN 65.

The range of pressure designations covered is:

a) for flanged valves

1) PN 10; PN 16; PN 25; PN 40; PN 63; PN 100

2) Class 150; Class 300; Class 600

b) for butt welding end valves

1) PN 10, PN 16, PN 25, PN 40, PN 63, PN 100

2) Class 150, Class 300, Class 600

c) for socket welding end valves and threaded end valves

1) PN 10; PN 16; PN 25; PN 40; PN 63; PN 100

2) Class 600; Class 800

NOTE 1 Socket welding end and threaded end valves are not normally manufactured with the pressure designations PN 10, PN 16, PN 25 and PN 40.

NOTE 2 Class 800 is an intermediate class designation widely used for socket welding and threaded end valves.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 19, *Industrial valves — Marking of metallic valves*

EN 287-1, *Qualification test of welders — Fusion welding — Part 1: Steels*

EN 558, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — PN and Class designated valves*

EN 736-1:1995, *Valves — Terminology — Part 1: Definition of types of valves*

EN 736-2:1997, *Valves — Terminology — Part 2: Definition of components of valves*

EN 736-3:2008, *Valves — Terminology — Part 3: Definition of terms*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 1418, *Welding personnel — Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials*

EN 1759-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 1: Steel flanges, NPS ½ to 24*

EN 10045-1, *Metallic materials — Charpy impact test — Part 1: Test method*

EN 12266-1, *Industrial valves — Testing of valves — Part 1: Pressure tests, test procedures and acceptance criteria — Mandatory requirements*

EN 12266-2, *Industrial valves — Testing of valves — Part 2: Tests, test procedures and acceptance criteria — Supplementary requirements*

EN 12516-1, *Industrial valves — Shell design strength — Part 1: Tabulation method for steel valve shells*

EN 12516-2, *Industrial valves — Shell design strength — Part 2: Calculation method for steel valve shells*

EN 12516-3, *Valves — Shell design strength — Part 3: Experimental method*

EN 12570, *Industrial valves — Method for sizing the operating element*

EN 12627, *Industrial valves — Butt welding ends for steel valves*

EN 12760, *Valves — Socket welding ends for steel valves*

EN 12982, *Industrial valves — End-to-end and centre-to-end dimensions for butt welding end valves*

EN ISO 228-1:2003, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

EN ISO 5210, *Industrial valves — Multi-turn valve actuator attachments (ISO 5210:1991)*

EN ISO 15607, *Specification and qualification of welding procedures for metallic materials — General rules (ISO 15607:2003)*

ISO 7-1:1994, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ASME B1.20.1-1983, *Pipe Threads, General Purpose (Inch)*

3 Terms and definitions

For the purposes of this document, the definitions of types of valves and components and the terms and definitions given in EN 736-1:1995, EN 736-2:1997 and EN 736-3:2008 apply.

EN 1984:2010 (E)**4 Requirements****4.1 Design****4.1.1 Materials**

4.1.1.1 The body, bonnet and cover materials shall be selected from the grades listed in EN 12516-1.

4.1.1.2 All the internal parts in contact with the fluid shall be made of a material whose corrosion resistance to the fluid being carried is at least equal to the body and bonnet material.

4.1.1.3 Trim materials shall have a chemical composition and mechanical properties which ensure the mechanical integrity of the valve.

The trim comprises the following:

- a) stem;
- b) obturator seat;
- c) body seat;
- d) backseat (for valves DN 50 and above, when fitted).

4.1.1.4 Stems shall be manufactured from forged, drawn or rolled material. They shall have a minimum corrosion resistance equivalent to a 13 % chromium content ferritic steel.

4.1.2 Pressure/temperature ratings

4.1.2.1 The pressure/temperature ratings shall be as specified in EN 12516-1 for the particular body/bonnet material group.

4.1.2.2 The pressure temperature ratings applicable to Class 800 socket welding and threaded end valves shall be the Class 600 rating for the applicable material group multiplied by the ratio of $\frac{800}{600}$.

4.1.2.3 Restrictions of temperature and pressure below those specified in 4.1.2.1 and 4.1.2.2 for example, those imposed by soft seals, special trims and bellows seal shall be indicated on the valve (see 8.1.2).

4.1.2.4 For temperatures below the lowest temperature shown in the pressure/temperature rating tables in EN 12516-1, the service pressure shall be no greater than the pressure corresponding to the lowest temperature in the rating tables. The use of valves at lower temperatures than shown in the rating tables is permitted providing the bending rupture energy of the body, bonnet and cover material measured on three 10 mm x 10 mm specimens in accordance with EN 10045-1 shall be no less than an average of 27J at a temperature no higher than the lowest scheduled operating temperature.

4.1.3 Dimensions**4.1.3.1 Face-to-face and end-to-end dimensions**

Face-to-face dimensions for PN and Class designated flanged end valves shall be in accordance with EN 558.

The end-to-end dimensions of butt welding end valves shall be in accordance with EN 12982.

The end-to-end dimensions of threaded and socket welding end valves is the choice of the manufacturer.

4.1.3.2 Body end

4.1.3.2.1 Flanged ends shall comply with requirements of EN 1092-1 for PN-designated flanges or with EN 1759-1 for Class designated flanges.

Flanged ends shall be cast or forged integral with the body except that flanges may be attached by welding in accordance with 4.1.6. A full penetration butt weld shall be used for the attachment of flanges by welding on sizes larger than DN 50.

4.1.3.2.2 Butt welding end profiles shall be in accordance with EN 12627.

4.1.3.2.3 Socket welding end dimensions shall be in accordance with EN 12760. The minimum thickness of the pressure retaining material shall be in accordance with EN 12516-1 and EN 12516-2.

4.1.3.2.4 Threaded ends shall be of the internal form in accordance with Type Rc and Rp to ISO 7-1:1994 or Type G to EN ISO 228-1:2003 or Type NPT to ASME B1.20.1-1983.

4.1.3.3 Body end port inside diameter

The body end port shall be circular. For unlined valves the body end port inside diameter shall be not less than the nominal inside diameter specified in Table 1.

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