



SLOVENSKI STANDARD
SIST EN 1984:2001
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Industrijski ventili - Jekleni zasuni

Industrial valves - Steel gate valves

Industriearmaturen - Schieber aus Stahl

Robinetterie industrielle - Robinets-vannes en acier

Ta slovenski standard je istoveten z: EN 1984:2000

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23.060.30 Zapirni ventili (zasuni) Gate valves

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ICS 23.060.30

English version

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This European Standard was approved by CEN on 6 November 1999.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

This European Standard 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 standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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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 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:

DN8; DN10; DN12; DN15; DN20; DN25; DN32; DN40; DN50; DN65; DN80; DN100; DN125; DN150; DN200; DN250; DN300; DN350; DN400; DN450; DN500; DN600; DN700; DN750; DN800; DN900; DN1000

DN750 is used for Class designated valves only.

DN8 and DN12 are not used for flanged end connections.

Socket welding end valves and threaded end valves are limited to the range DN8 to DN65.

The range of pressure designations covered is:

a) for flanged valves

PN10; PN16; PN25; PN40; PN63; PN100

Class 150; Class 300; Class 600

b) for butt welding end valves

PN10, PN16, PN25, PN40, PN63, PN100

Class 150, Class 300, Class 600

c) for socket welding end valves and threaded end valves

PN10; PN16; PN25; PN40; PN63; PN100

Class 600; Class 800

The progress of work of the various standards referred to in the normative references can require revision of this standard

NOTE 1 Socket welding end and threaded end valves are not normally manufactured with the pressure designations PN10, PN16, PN25 and PN40.

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

2 Normative references

This European standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revision to any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 287-1, *Approval testing of welders — Fusion welding — Part 1: Steels*

EN 288-1, *Specification and qualification of welding procedures for metallic materials – Part 1 : General rules for fusion welding*

EN 558-1, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — Part 1: PN-designated valves*

EN 558-2, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — Part 2: Class designated valves*

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

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

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

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 10045-1, *Metallic materials — Charpy impact tests — Part 1: Test Method*

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

prEN 19:1996, *Industrial valves — Marking*

prEN 1092-1:1997, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories - PN designated — Part 1: Steel flanges*

prEN 1503-1: 1994, *Valves — Materials for bodies, bonnets and covers — Part 1: Steels specified in European Standards*

prEN 1503-2: 1994, *Valves — Materials for bodies, bonnets and covers — Part 1: Steels other than those specified in European Standards*

prEN 12266-1:1999, *Industrial valves – Testing of valves – Part 1: Tests, test procedures and acceptance criteria*

prEN 12266-2:1999, *Industrial valves— Testing of valves — Part 2: Supplementary tests, test procedures and acceptance criteria.*

prEN 12516-3:1999, *Industrial valves — Shell design strength— Part 3:Experimental Method.*

prEN 12570:1996, *Industrial valves — Permissible manual forces for operation of valves*

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

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

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

ASME B1.20-1, *Pipe Threads, General Purpose (Inch)*

NOTE European standard EN 1984 supports some of the essential requirements of the Pressure Equipment Directive 97/23/EC. The essential requirements covered are listed in annex ZA (informative). It should be noted that this standard is not self sufficient and should be used with the normative references listed herein. Reference should also be made to the annex ZA in the relevant normative reference.

3 Definitions

For the purposes of this standard the definitions of types of valves and components and the definitions of terms given in EN 736-1, EN 736-2 and EN 736-3 apply.

4 Requirements

4.1 Design

4.1.1 Materials

4.1.1.1 The body, bonnet and cover materials shall be selected from those listed in prEN 1503-1:1994 and prEN 1503-2:1994.

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 DN50 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 a procedure¹⁾, which is currently being written, 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 a procedure²⁾, which is currently being written, 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.

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4.1.3 Dimensions

4.1.3.1 Face-to-face and end-to-end dimensions

Face-to-face dimensions for PN designated flanged end valves shall be in accordance with EN 558-1. Face-to-face dimensions of Class designated flanged end valves shall be in accordance with EN 558-2.

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

1) See for example prEN 12516-1.

2) See for example prEN 12516-1.

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 prEN 1092-1:1997 for PN designated flanges or with a written procedure³⁾, 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 DN50.

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 some written procedures⁴⁾, which are currently being written.

4.1.3.2.4 Threaded ends shall be of the internal form in accordance with Type Rc and Rp to ISO 7-1 or Type G to ISO 228-1 or Type NPT to ASME B1.20-1.

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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3) See for example prEN 1759-1.

4) See for example prEN 12516-1 and prEN 12516-2.