SLOVENSKI STANDARD
SIST EN 13709:2003

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Industrijski ventili - Jekleni zapirni ventili in zapirni protipovratni ventili

Industrial valves - Steel globe and globe stop and check valves

Industriearmaturen - Absperrventile und absperrbare Rückschlagventile aus Stahl

Robinetterie industrielle - Robinets a soupape et robinets a clapet libre blocable en acier

Ta slovenski standard je istoveten z: **EN 13709:2002**

ICS:

23.060.10	Zapirni ventili (kroglasti)	Globe valves
23.060.50	Blokirni ventili	Check valves

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Industrial valves - Steel globe and globe stop and check valves

Robinetterie industrielle - Robinets à soupape et robinets à clapet libre blocable en acier

Industriearmaturen - Absperrventile und absperrbare Rückschlagventile aus Stahl

This European Standard was approved by CEN on 19 August 2002.

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 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 Management Centre 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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

Foreword

This document EN 13709:2002 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of an identical text or by endorsement, at the latest by April 2003, and conflicting national standards shall be withdrawn at the latest by April 2003.

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.

In this European Standard the annex A is informative.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the requirements for steel globe and globe stop and check valves which are wrought, cast or fabricated in straight, angle or oblique pattern with end connections flanged, butt welding, socket welding or threaded.

This standard is applicable to steel globe and globe stop and check 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 range 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 8 and DN 12 are not used for PN designated flanged end connections.

DN 8, DN 10 and DN 12 are not used for Class designated 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 and butt welding end valves:

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

Class 150; Class 300; Class 600.

b) for socket welding end valves and threaded end valves:

PN 40; PN 63; PN 100;

Class 600; Class 800.

NOTE Class 800 is a 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 revisions of 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 (including amendments).

EN 19, *Industrial valves - Marking of metallic valves.*

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

EN 288-1, *Specification and approval 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 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 1503-1, *Valves - Materials for bodies, bonnets and covers - Part 1: Steels specified in European Standards*.

EN 1503-2, *Valves - Materials for bodies, bonnets and covers - Part 2: Steels other than those specified in European Standards*.

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

EN 12351, *Industrial valves - Protective caps for valves with flanged connections*.

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

prEN 1759-1[1)], *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, Class-designated - Part 1: Steel flanges, NPS ½ to 24*.

prEN 12266-1[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*.

prEN 12516-1[1)], *Industrial valves - Shell design strength - Part 1: Tabulation method for steel valve shells*.

prEN 12516-2[1)], *Industrial valves - Shell design strength - Part 2: Calculation method for steel valve shells.*

EN 12516-3, *Industrial valves - Shell design strength - Part 3: Experimental method*.

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*.

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

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1) To be published

3 Terms and definitions

For the purposes of this European 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.

NOTE The terms maximum allowable pressure, *PS*, and test pressure, *PT*, defined in EU Directive 97/23/EC (PED) are equivalent to the terms allowable pressure, p_s, and test pressure, p_t, defined in EN 736-3.

4 Requirements

4.1 Design

4.1.1 Materials

4.1.1.1 The body and bonnet materials shall be selected from those listed in EN 1503-1 and EN 1503-2.

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 prEN 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 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 prEN 12516-1 the maximum allowable 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 and bonnet material measured on three 10 mm x 10 mm specimens, in accordance with EN 10045-1, shall be no less than an average of 27 J at a temperature no higher than the lowest scheduled operating temperature.

4.1.3 Dimensions

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

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

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

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

The end-to-end and centre-to-end dimensions of socket welding and threaded end valves are at 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 prEN 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 4.1.7. 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 prEN 12516-1 or prEN 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 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.