Industrial valves - Isolating valves for low-temperature applications - Part 1: Design, manufacturing and production testing (ISO 28921-1:2013)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 28921-1:2017 sisaldab Euroopa standardi EN ISO 28921-1:2017 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 28921-1:2017 consists of the English text of the European standard EN ISO 28921-1:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 15.02.2017.	Date of Availability of the European standard is 15.02.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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EN ISO 28921-1

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English Version

Industrial valves - Isolating valves for low-temperature applications - Part 1: Design, manufacturing and production testing (ISO 28921-1:2013)

Robinetterie industrielle - Robinets d'isolement pour application à basses températures - Partie 1: Conception, essais de fabrication et de production (ISO 28921-1:2013)

Industriearmaturen - Absperrventile für die Anwendung im Niedertemperaturbereich - Teil 1: Auslegung, Fertigung, Produktionsprüfung (ISO 28921-1:2013)

This European Standard was approved by CEN on 10 January 2017.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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

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Ref. No. EN ISO 28921-1:2017 E

European foreword

The text of ISO 28921-1:2013 has been prepared by Technical Committee ISO/TC 153 “Valves” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 28921-1:2017 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 August 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.

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.

EN ISO 28921-1 and EN ISO 28921-2 supersede EN 12567:2000.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 28921-1:2013 has been approved by CEN as EN ISO 28921-1:2017 without any modification.

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Introduction

The purpose of this part of ISO 28921 is the establishment of basic requirements and practices for design, fabrication, material selection and production testing of valves used in low-temperature services. The intention is to provide requirements for design, material selection and valve preparation for valves to be used in low-temperature service.

Industrial valves — Isolating valves for low-temperature applications —

Part 1: Design, manufacturing and production testing

1 Scope

This part of ISO 28921 specifies requirements for design, dimensions, material, fabrication and production testing of isolation valves for low-temperature applications.

It applies to gate, globe, check, butterfly and ball valves and can be used for other valve types used in low-temperature services.

This part of ISO 28921 covers isolation valves for use in cryogenic temperature service where the design low-temperature service is –50 °C down to –196 °C.

This part of ISO 28921 does not apply to valves for cryogenic services, designed in accordance with ISO 21011, used with cryogenic vessels.

Where the requirements of this part of ISO 28921 vary from those given in the valve product standards, the requirements of this part of ISO 28921 apply.

This part of ISO 28921 covers valves with body, bonnet, bonnet extension or cover made of metallic materials.

It covers valves of nominal sizes DN: 10; 15; 20; 25; 32; 40; 50; 65; 80; 100; 125; 150; 200; 250; 300; 350; 400; 450; 500; 600; 650; 700; 750; 800; 850; 900,

corresponding to nominal pipe sizes NPS: 3/8; 1/2; 3/4; 1; 11/4; 11/2; 2; 21/2; 3; 4; 5; 6; 8; 10; 12; 14; 16; 18; 20; 24; 26; 28; 30; 32; 34; 36,

and applies to pressure designations:

— PN 16; 25; 40; 100; 160; 250.

— Class 150; 300; 600; 800; 900; 1 500.

NOTE PN 250 and Class 1 500 in sizes DN > 100 and NPS > 4 are not covered in this part of ISO 28921.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable to its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5208, *Industrial valves — Pressure testing of metallic valves*

ISO 5209, *General purpose industrial valves — Marking*

ISO 10434, *Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries*

ISO 10497, *Testing of valves — Fire type-testing requirements*

ISO 10631, *Metallic butterfly valves for general purposes*

ISO 14313, *Petroleum and natural gas industries — Pipeline transportation systems — Pipeline valves*

ISO 15761, *Steel gate, globe and check valves for sizes DN 100 and smaller, for the petroleum and natural gas industries*

ISO 17292, *Metal ball valves for petroleum, petrochemical and allied industries*

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 1515-1, *Flanges and their joints — Bolting — Part 1: Selection of bolting*

EN 13480-2, *Metallic industrial piping – Part 2: Materials*

API 607, *Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats*

API 6FA, *Specification for Fire Test for Valves*

ANSI/ASME B16.34, *Valves Flanged, Threaded and Welding End*

ASME B31.3, *Process Piping*

ASME, *ASME Boiler and Pressure Vessel Code, Section VIII*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
nominal size
DN
alphanumeric designation of size for components of a pipework system, which is used for reference purposes, comprising the letters DN followed by a dimensionless whole number which is indirectly related to the physical size, in millimetres, of the bore or outside diameter of the end connections

[SOURCE: ISO 6708:1995, definition 2.1]

3.2
nominal pressure
PN
numerical designation relating to pressure that is a convenient rounded number for reference purposes, and which comprises the letters PN followed by the appropriate reference number

Note 1 to entry: It is intended that all equipment of the same nominal size (DN) designated by the same PN number shall have compatible mating dimensions.

Note 2 to entry: The maximum allowable pressure depends on materials, design and working temperature, and is to be selected from the tables of pressure/temperature ratings given in the appropriate standards.

[SOURCE: ISO 7268:1983, Clause 2, modified.]

3.3
NPS
alphanumeric designation of size for components of a pipework system, which is used for reference purposes, and which comprises the letters NPS followed by a dimensionless number indirectly related to the physical size of the bore or outside diameter of the end connections

Note 1 to entry: The number following the letters NPS does not represent a measurable value and is not intended to be used for calculation purposes except where specified in the relevant standard.