



BSI Standards Publication

Industrial valves — Ball valves of thermoplastics materials

National foreword

This British Standard is the UK implementation of EN ISO 16135:2006+A1:2019. It is identical to ISO 16135:2006, incorporating amendment 1:2019. It supersedes BS EN ISO 16135:2006, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted to Technical Committee PSE/18/3, Part turn valves (Ball, plug and butterfly).

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

Date	Text affected
30 September 2019	Implementation of ISO amendment 1:2019 with CEN endorsement A1:2019

English Version

Industrial valves — Ball valves of thermoplastics materials (ISO 16135:2006)

Robinetterie industrielle — Robinets
à tournant sphérique en matériaux
thermoplastiques (ISO 16135:2006)

Industriearmaturen — Kugelhähne aus
Thermoplasten (ISO 16135:2006)

This European Standard was approved by CEN on 3 March 2006.

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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.

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European foreword

This document (EN ISO 16135:2006) has been prepared by Technical Committee CEN/TC 69 "Industrial valves", the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids".

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 September 2006, and conflicting national standards shall be withdrawn at the latest by September 2006.

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 the relationship with EU Directive(s), see informative [Annex ZA](#), which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 United Kingdom.

Foreword to amendment A1

This document (EN ISO 16135:2006/A1:2019) has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" in collaboration with 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 February 2020, and conflicting national standards shall be withdrawn at the latest by February 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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).

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Endorsement notice

The text of ISO 16135:2006/Amd 1:2019 has been approved by CEN as EN ISO 16135:2006/A1:2019 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the essential requirements of Directive 2014/68/EU (Pressure Equipment Directive) 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 of the European Parliament and of the Council of 15 May 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment.

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 Directive 2014/68/EU	Clause(s)/subclause(s) of this EN	Remarks/Notes
2.2.1	4.3	Design loading factors
2.2.2	4.6.1; 5.2.1; 5.2.2; 5.2.3; 5.2.5	Design for adequate strength
2.7	4.8.1	Wear
3.1.5	4.7.1	Traceability
3.2.2	4.6.1; 4.6.3	Strength proof test
3.4	4.8.3	Operating instructions
4.1, 4.2 a)	4.2; 4.3	Materials for pressurised parts

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.

Contents

Page

Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Requirements	3
4.1 Design	3
4.1.1 Valve function	3
4.1.2 Design characteristics	4
4.1.3 Types of valve end connection	4
4.2 Materials	5
4.2.1 Materials for the shell	5
4.2.2 Materials for other valve components	5
4.3 Pressure/temperature rating	5
4.4 Dimensions	6
4.4.1 Face-to-face dimensions	6
4.4.2 Joint dimensions of the valve end connections	6
4.5 Operation	7
4.6 Functional characteristics	7
4.6.1 Design strength	7
4.6.2 Flow characteristics	7
4.6.3  Seat and packing/shell leaktightness 	7
4.6.4 Operating torque	7
4.6.5 Permissible manual forces	8
4.6.6 Durability	8
4.7 Manufacture	8
4.7.1 Control of the manufacture of body and bonnet/cover	8
4.7.2 Permanent jointing	8
4.8 Other requirements	8
4.8.1 Wear	8
4.8.2 Corrosion resistance or other chemical attack	8
4.8.3 Operating instructions	8
5 Test procedures	9
5.1 Documentation of test results	9
5.2 Initial type tests	9
5.2.1 General	9
5.2.2 Testing of materials	9
5.2.3 Shell test	9
5.2.4 Seat leaktightness test	9
5.2.5 Long-term behaviour test of the complete valve	9
5.2.6 Durability test	10
5.2.7 Operating torque test	10
5.2.8 Final test	10
6 Declaration of compliance	10
7 Designation	10
8 Marking and preparation for storage and transportation	11
8.1 Marking and documentation	11
8.2 Preparation for storage and transportation	11
Annex A (informative) Procurement information	13
Annex B (informative) Type alternatives for multi-way ball valves	14
Bibliography	21

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16135 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 69, *Industrial valves*, in collaboration with ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 7, *Valves and auxiliary equipment of plastics materials*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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Industrial valves — Ball valves of thermoplastics materials

1 Scope

This International Standard specifies requirements for the design, functional characteristics and manufacture of ball valves made of thermoplastics materials intended for isolating service, for control service, and to divert/mix fluids, their connection to the pipe system, the body materials and their pressure/temperature rating between $-40\text{ }^{\circ}\text{C}$ and $+120\text{ }^{\circ}\text{C}$, for a lifetime of 25 years, and also specifies their tests.

This International Standard is applicable to hand- or power-operated valves to be installed in industrial pipe systems, irrespective of the field of application and the fluids to be conveyed.

NOTE 1 Industrial pipe systems also include systems for water supply for general purposes, drainage and sewerage.

NOTE 2 Special requirements can apply to pipe systems for water for human consumption.

This International Standard is concerned with the range of DN

DN 8, DN 10, DN 15, DN 20, DN 25, DN 32, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125 and DN 150

and the range of PN and Class

PN 6, PN 10, PN 16, PN 25, Class 150 and Class 300.

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.

 ISO 7-1:1994/Cor1:2007, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation — Technical Corrigendum 1* 

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

 [ISO 898-1:2013](#), *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread* 

 [ISO 1167-1:2006](#), *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 1: General method* 

 ISO 5211:2017, *Industrial valves — Part-turn actuator attachments* 

ISO 8233:1998, *Thermoplastics valves — Torque — Test method*

[ISO 8659:1989](#), *Thermoplastic valves — Fatigue strength — Test method*

ISO 9393-2:2005, *Thermoplastics valves for industrial applications — Pressure test methods and requirements — Part 2: Test conditions and basic requirements*

ISO/TR 10358:1993, *Plastics pipes and fittings — Combined chemical-resistance classification table*

 ISO 10931:2005/Amd 1:2015, *Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF) — Specifications for components and the system — Amendment 1* 