BS EN 19:2016

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Industrial valves — Marking of metallic valves

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National foreword

This British Standard is the UK implementation of EN 19:2016. It supersedes BS EN 19:2002 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PSE/18/1, Industrial valves, steam traps, actuators and safety devices against excessive pressure - Valves - Basic standards.

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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Industrial valves - Marking of metallic valves

Robinetterie industrielle - Marquage des appareils de robinetterie métalliques

Industriearmaturen - Kennzeichnung von Armaturen aus Metall

This European Standard was approved by CEN on 15 January 2016.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 19:2016) 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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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 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 2014/68/EU.

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

This document supersedes EN 19:2002.

The main changes compared to the previous edition are the following:

a) Normative references have been updated;

b) references to EN 12516-1 and EN 12516-4 were added to 5.3 “Material” as the standards for the material designations to be used for the marking;

c) Annex ZA has been updated.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the requirements for marking of industrial metallic valves. It defines the method of applying the markings, on the body, on a flange, on an identification plate or any other location.

When specified as a normative reference in a valve product or performance standard, this European Standard has to be considered in conjunction with the specified requirements of that valve product or performance standard.

The marking requirements for plastic valves are not within the scope of this European Standard.

2 Normative references

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

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

EN 12516-4, *Industrial valves - Shell design strength - Part 4: Calculation method for valve shells manufactured in metallic materials other than steel*

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

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

ANSI/ASME B1.20.1, *Pipe Threads, General Purpose, Inch*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 736-1, EN 736-2 and EN 736-3 and the following apply.

3.1
integral markings
integrally cast, forged or stamped markings on the body or bonnet/ cover of the valve

3.2
marking plate
plate securely fixed to the body or bonnet/cover with one or more mandatory markings

Note 1 to entry: See also 4.1.4.

3.3
identification plate
plate securely fixed to the valve with supplementary or other markings

Note 1 to entry: See also 4.1.4.

4 Requirements

4.1 General

4.1.1 Where the requirements in a valve product or performance standard differ from those given in this European Standard then the requirements of the product or performance standard apply.

4.1.2 Mandatory markings (see 4.2) are independent of language. When it is necessary to include descriptive words so as to properly define any supplementary markings (see 4.3) or other markings (see 4.4) then any such words shall be in the language of the manufacturer and/or one of the official CEN languages (English, French or German).

4.1.3 Table 1 lists those items which shall be considered for inclusion in product or performance standards.

Details of the markings are given in Clause 5.

4.1.4 Markings shall be located as detailed in 4.2, 4.3 and 4.4.

Painted-on markings are not permitted.

Where marking plates or identification plates are used, unless otherwise specified in product or performance standards, the material and method of fixing shall be at the discretion of the manufacturer. All marking plates and identification plates and their means of fixing shall be in a material which is resistant to atmospheric corrosion. Marking plates shall also be suitable for the allowable temperature of the valve.

4.2 Mandatory markings

4.2.1 Items 1 to 4 in Table 1 shall be marked on every valve and shall be integral markings or on a marking plate. If a valve has no defined PN or Class designation, items 7 and 9 in Table 1 are mandatory. See also 4.5.4.

4.2.2 Items 5 and 6 in Table 1 shall be marked on those valves requiring these markings. See 5.5 and 5.6.

4.3 Supplementary markings

Items 7 to 21 in Table 1 are optional unless otherwise specified in product or performance standard. The location of supplementary markings shall be determined by the manufacturer unless otherwise specified in the relevant product or performance standard.

4.4 Other markings

A manufacturer having complied with the above requirements of this European Standard and those of product or performance standards relevant to the individual types of valve is permitted to:

a) mark any of the items in Table 1 additionally in a place other than that specified; e.g. if a marking is mandatory on the body or bonnet/cover it may also be repeated on the identification plate;

b) add to the markings specified, any technical and/or commercial references, providing that there is no risk of confusion between these markings and the markings in Table 1.

For industrial valves conforming to the requirements of the EU Directive(s) stated in Annex ZA, additional markings in accordance with 5.10 and 5.18 are required.

Table 1 — Valve markings

Item	Subject		Marking		Clause reference
			PN designated valves	**Class designated valves**	
1	Nominal size	Flanged ends, Wafer type bodies	DN ...	DN ... and/or (NPS) ...	5.1.2
		Welding ends	DN ...	DN ... and/or (NPS)	5.1.2
		Threaded ends	... (thread size) and/or DN ...	... (thread size) and/or (NPS)	5.1.3
		Capillary ends	... (tube O/D)	... (tube O/D)	5.1.4
		Compression ends	... (tube O/D)	... (tube O/D)	5.1.4
		Other ends	-	-	5.1.5
2	PN/Class designation		PN ...	CLASS ...	5.2
3	Material		-	-	5.3
4	Manufacturer's name or trademark		ABC	ABC	5.4
5	Arrow for direction of flow		→	→	5.5
6	Ring joint number		-	R ...	5.6
7	Maximum allowable temperature TS		... °C or ... C	... °C or ... C	5.7
8	Threaded end identification		*R*, R_c, R_p, G, NPT or other marking according to the relevant standard	*R*, R_c, R_p, G, NPT or other marking according to the relevant standard	5.8
9	Maximum allowable pressure PS		... bar	... bar	5.9
10	Product identification		-	-	5.10
11	Reference to the standard		EN ...	EN ...	5.11
12	Melt identification		-	-	5.12
13	Trim		-	-	5.13
14	Service symbols		-	-	5.14
15	Internal coating, liner, lining or internal painting		-	-	5.15
16	Quality and test markings		-	-	5.16
17	Inspector's identification		✓	✓	5.17
18	Year of manufacture		2014 or 14	2014 or 14	5.18
19	Flow coefficient		K_v (or C_v) ...	K_v (or C_v) ...	5.19
20	Allowable differential pressure		Δp... bar	Δp... bar	5.20
21	Closing direction		-	-	5.21

4.5 Omission of markings

4.5.1 For valves lower than or equal to DN 50 or for valves with threaded ends lower than or equal to size 2", where due to the physical size of the valve, it is not practicable to apply all the mandatory markings as required by 4.2, the relevant valve product or performance standard shall specify which markings may be omitted or alternatively placed on the identification plate or other location.

4.5.2 For Class designated valves where, due to the physical size of the valve, it is not practicable to incorporate the word "CLASS", it is permissible to omit the word "CLASS" or to indicate only the letters "CL".

4.5.3 For PN designated valves, it is permissible to omit the letters "DN" from the nominal size designation (item 1) providing the PN designation (item 2) follows immediately after the size number and on the same line, e.g. DN 50 PN 25 may be abbreviated to 50 PN 25.

4.5.4 Valves with compression or capillary ends have no defined PN or Class designation but such valves are not required to be marked with items 7 and 9 in Table 1.

4.5.5 For cast iron valves it is permissible to omit "EN" from the material designation.

5 Details of markings

5.1 Nominal size

5.1.1 The nominal size marking shall be the size designation of the end connections with which the body has been provided.

5.1.2 For valves with flanges, butt welding or socket welding end connections or with wafer type bodies, the nominal size marking shall comprise the letters "DN" and the appropriate DN number as specified in the relevant flange, butt welding or socket welding standard, e.g. DN 100.

NOTE 1 For Class designated valves, the NPS marking, e.g. NPS 4 can be used in addition to or as an alternative to the DN marking. The relationship between NPS and DN is specified in the relevant flange or welding end standard.

NOTE 2 See also 4.5.3.

5.1.3 For threaded end valves, the nominal size marking shall be the thread size as specified in the relevant pipe thread standard.

NOTE In addition to, or as an alternative to the thread size marking, the DN marking can be used. The relationship between NPS and DN is specified in the relevant product or performance standard.

5.1.4 For capillary and compression ends, the nominal size marking shall be the outside diameter of the tube for which the valve is suitable and shall be as specified in the relevant tube standard.

5.1.5 For valves provided with other end connections or having the pipe end connections of differing nominal sizes or type, e.g. one flanged end and one welding end, the nominal size marking shall be as specified in the relevant product or performance standard or shall be agreed between the manufacturer and the purchaser.

5.2 PN/Class designation

5.2.1 For PN designated valves, the marking shall comprise the letters “PN” and the appropriate PN designation number, e.g. PN 16.

5.2.2 For Class designated valves, the marking shall comprise the word “CLASS” and the appropriate Class designation number, e.g. CLASS 150. See also 4.5.2.

5.3 Material

The marking indicating the material of the body and bonnet/cover shall be the designation and/or number given in EN 12516-1 or EN 12516-4 as appropriate or as given in the relevant material standard. See also 4.5.5.

5.4 Manufacturer's name or trademark

This marking shall be the manufacturer's name or registered trademark or company logo.

5.5 Arrow for direction of flow

All unidirectional flow valves shall be marked on the body with an arrow to indicate the direction of flow, by means of integral marking or a marking plate.

5.6 Ring joint number

Flanged ends and/or body bonnet/cover flanges with Class designated flanges that are grooved for ring joints, shall be marked with the corresponding ring number (e.g. R25). This marking shall be placed on the rim of the relevant flanges. In the case of non-standard ring joints for body bonnet/cover flanges, the flanges shall be marked “R.SPL”.

5.7 Maximum allowable temperature, TS

This marking shall indicate the maximum allowable temperature, TS in degrees Celsius. The degree symbol (°) may be omitted, e.g. 120 C.

5.8 Threaded end identification

This marking shall identify the type of thread provided, as designated in ISO 7-1, ISO 228-1, ANSI/ASME B1.20.1 or other relevant thread standard.

5.9 Maximum allowable pressure, PS

This marking shall indicate the maximum allowable pressure, PS in bar.

5.10 Product identification

This marking shall be the manufacturer’s type, model or identification which is common to all valves of a particular type.

5.11 Reference to the standard

This marking shall be the number of the European Standard to which the valve conforms, e.g. EN.

5.12 Melt identification

This marking shall indicate the material manufacturer’s identification or coding for the melt of material from which the body and bonnet/cover have been produced.

5.13 Trim

The requirements for identification of the trim components shall be specified in the relevant product or performance standard.

5.14 Service symbols

This marking indicates the suitability of a valve for a particular application or service. Acceptable symbols should be specified in a valve product or performance standard. It is acceptable for the service symbol to be appended to the maximum allowable temperature and/or the maximum allowable pressure markings (items 7 and 9).

5.15 Internal coating, liner, lining or internal painting

This marking shall indicate the material of any internal coating, lining or internal painting which has been applied to the valve shell components or the material of any liner fitted. The appropriate symbol/coding will be specified in the relevant product or performance standard.

5.16 Quality and test markings

These markings, which may be on a label attached to the valve, indicate any relevant inspection and test results and, where applicable, approval by an independent body.

5.16 refers to valves outside the scope of directives only. For valves within the scope of directives, there are requirements related to marking and inspection which have to be regarded independently from this clause.

5.17 Inspector's identification

This marking shall be made on the valve by the purchaser's inspector on acceptance of the valve.

5.17 refers to valves outside the scope of directives only. For valves within the scope of directives, there are requirements related to marking and inspection which have to be regarded independently from this clause.

5.18 Year of manufacture

The marking shall be the year of manufacture, e.g. 2001, 2014 etc. The marking may be abbreviated to the last two digits of the year, e.g. 01, 14.

5.19 Flow coefficient

This marking shall indicate the flow coefficient for the valve in the fully open position, unless otherwise specified in the relevant product or performance standard.

5.20 Allowable differential pressure Δp

This marking shall indicate the allowable differential pressure, in bar, prefixed by the symbol Δp.

5.21 Closing direction

When the closing direction is not clockwise, this marking is mandatory, and shall clearly show the closing direction.

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 Pressure Equipment Directive.

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	Clauses/subclauses of this EN	Nature of requirement	Remarks/Notes
3.3	4.2; 5.10; 5.18	Marking	

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.

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