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Secretariat: UNI

Industrial valves — Check valves of thermoplastics materials —

AMENDMENT 1

Robinetterie industrielle — Clapets thermoplastiques de non-retour en matériaux thermoplastiques — AMENDEMENT 1

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This document was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC ~~07~~7, *Valves and auxiliary equipment of plastics materials*.

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Industrial valves — Check valves of thermoplastics materials — AMENDMENT 1

Page 1, Clause 1

Replace the last paragraph with the following:

This document is concerned with the range of DN

DN 8, DN 10, DN 15, DN 20, DN 25, DN32, 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 500 and DN 600.

and the range of PN and Class

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

Add the following NOTE at the end of Clause 1:

NOTE 3 Different DN and/or PN can be declared by the manufacturer.

Page 1, Clause 2

Date all the normative references.

Delete the reference to EN 736-1:1995 and EN 736-2:1997, to be moved to the bibliography.

Delete the following references:

ISO 12092:2000, *Fittings, valves and other piping system components made of unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C), acrylonitrile-butadiene-styrene (ABS) and acrylonitrile-styrene-acrylester (ASA) for pipes under pressure — Resistance to internal pressure — Test method*

EN 558-1:1995, *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 558-2:1995, *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 736-3:1999, *Valves — Terminology — Part 3: Definition of terms*

EN 12107:1997, *Plastics piping systems — Injection-moulded thermoplastics fittings, valves and ancillary equipment — Determination of the long-term hydrostatic strength of thermoplastics materials for injection moulding of piping components*

Add the following references:

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 1167-1:2006, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluid — Determination of the resistance to internal pressure — Part 1: General method*

EN 558:2017, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — PN and Class designated valves*

EN 736-3:2008, *Valves — Terminology — Part 3: Definition of terms*

~~Replace the reference to ISO 898-1:1999 by the following:~~

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

ISO 15493:2003/Amd 1:2016, *Plastics piping systems for industrial applications — Acrylonitrile-butadiene-styrene (ABS), unplasticized poly(vinyl chloride) (PVC-U) and chlorinated poly(vinyl chloride) (PVC-C) — Specifications for components and the system — Metric series — Amendment 1*

ISO 15493:2003/Cor 1:2004, *Plastics piping systems for industrial applications — Acrylonitrile-butadiene-styrene (ABS), unplasticized poly(vinyl chloride) (PVC-U) and chlorinated poly(vinyl chloride) (PVC-C) — Specifications for components and the system — Metric series — Technical Corrigendum 1*

Replace the reference to ISO 898-1:1999 by the following:

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*

Replace the reference to ISO 12162:1995 by the following:

ISO 12162:2009, *Thermoplastics materials for pipes and fittings for pressure applications — Classification, designation and design coefficient*

Replace the reference to ISO 15494:2004 by the following:

ISO 15494:2015, *Plastics piping systems for industrial applications — Polybutene (PB), polyethylene (PE), polyethylene of raised temperature resistance (PE-RT), crosslinked polyethylene (PE-X), polypropylene (PP) — Metric series for specifications for components and the system*

Replace the reference to EN 10921:2001 by the following:

EN 10921:2018, *Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated. Steel flanges*

Replace the reference to EN 1267:1997 by the following:

EN 1267:2012, *Industrial valves. Test of flow resistance using water as test fluid*

Replace the reference to EN 12266-1:2003 by the following:

EN 12266-1:2012, *Industrial valves. Testing of metallic valves. Pressure tests, test procedures and acceptance criteria. Mandatory requirements*

Page 2, Clause 3

Add the following text after the first paragraph:

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

Convert all NOTES to "Note X to entry".

Replace 3.4 by the following:

3.4
maximum allowable pressure
PMA

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maximum pressure occurring from time to time, including surge, that a component is capable of withstanding in service

[EN 805:2000, definition 3.1.1]

Replace the NOTE in 3.5 by the following:

Note 1 to entry: Adapted from EN 736-2.

Replace the NOTE in 3.7 by the following:

Note 1 to entry: Adapted from EN 12570.

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Page 4, 4.1.2

Add to the subdivision a) the following:

The installer shall verify that the complete operation of the clapet is not impeded by flange adaptors used to connect the valve to the pipeline.

Page 5, 4.2.1

Replace the first sentence and the list by the following:

The valve body and bonnet/cover materials, selected from ISO 15493 or ISO 15494 or ISO 10931, shall be in accordance with the requirements of the relevant International Standard: ABS, PE, PP, PVC-C, PVC-U, PVDF.

Page 5, 4.3, Table 1

Replace Table 1 with the table below.

Table 1 — Minimum values for rating factor f_r for a lifetime up to 25 years

Temperature °C	Minimum rating factor f_r for body material					
	ABS	PE	PP	PVC-C	PVC-U	PVDF
−40	1,0	1,0	—	—	—	[a]
−30	1,0	1,0	—	—	—	[a]
−20	1,0	1,0	—	—	—	1,0
−10	1,0	1,0	—	—	—	1,0
0	1,0	1,0	[a]	[a]	[a]	1,0
+5	1,0	1,0	[a]	[a]	[a]	1,0
10	1,0	1,0	1,0	1,0	1,0	1,0
20	1,0	1,0	1,0	1,0	1,0	1,0
25	1,0	1,0	1,0	1,0	1,0	1,0
30	0,8	0,76	0,85	0,85	0,80	0,9
40	0,6	0,53	0,70	0,65	0,60	0,8
50	0,4	0,35	0,55	0,50	0,35	0,71
60	0,2	0,24	0,40	0,35	0,15	0,63
70	—	—	0,27	0,25	—	0,54
80	—	—	0,15	0,15	—	0,47
90	—	—	0,08	[a]	—	0,36
100	—	—	[a]	[a]	—	0,25
110	—	—	—	—	—	0,17
120	—	—	—	—	—	0,12
130	—	—	—	—	—	[a]
140	—	—	—	—	—	[a]

NOTE These values do not coincide with the relevant factors for pipes and fittings.

[a] A rating factor for this fluid temperature may be declared by the manufacturer.

Page 6, 4.4.1

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Replace the text with the following:

4.4.1 Face-to-face dimensions

The face-to-face dimensions of valves for use in flanged pipe systems shall be selected from EN 558.

For all other types of end connection, the face-to-face dimensions shall be the responsibility of the manufacturer.

Page 7, 4.6.1

Replace the text with the following:

4.6.1 Design strength

For each valve body material, the design strength shall conform to ISO 9393-2:

— through the pressure test of the body;

— through the long-term behaviour test of the complete valve.

Page 7, 4.6.3

Replace the text with the following:

4.6.3 Seat and packing/shell leaktightness

The seat and packing/shell leaktightness shall be verified on all complete valves through seat and packing tests carried out in accordance with the requirements of ISO 9393-2.

The seat leaktightness shall be in accordance with the requirements of EN 12266-1. The leakage rate shall be not greater than rate F in EN 12266-1 (i.e.: 1xDN [mm^3/s] for liquids, 3 000xDN [mm^3/s] for gases).

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Page 9, 5.2.2

Replace the text with the following:

The testing of the body and bonnet/cover raw materials shall be in accordance with ISO 1167-1.

Page 10, 5.2.5

Replace the text with the following:

5.2.5 Long-term behaviour test of the complete valve

The complete valve shall be tested in accordance with ISO 1167-1.

Bibliography

Replace [4] by EU Directive 2014/68/~~EC~~EU, *Pressure Equipment Directive (PED)*.

Add the reference to EN 736-1 and EN 736-2.

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Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of Directive 2014/68/EU (Pressure Equipment Directive) aimed to be covered

NOTE Annex ZA is not included in the final ISO publication.

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.

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