International Standard ISO 7508

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Unplasticized polyvinyl chloride (PVC-U) valves for pipes under pressure — Basic dimensions — Metric series

Robinets en polychlorure de vinyle non plastifié (PVC-U) pour tubes avec pression — Dimensions de base — Série métrique

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Descriptors : plastics products, unplasticized polyvinyl chloride, valves and fittings, dimensions.

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7508 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids.*

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Unplasticized polyvinyl chloride (PVC-U) valves for pipes under pressure — Basic dimensions — Metric series

0 Introduction

This International Standard deals with current types of valves; it should be used for guidance by the manufacturer and user and as a basis for specific standards. It may later be extended to other types of valves, when the development of plastics materials in the field of pipe systems makes this necessary.

The possible connections to the various pipe systems will form the subject of a future International Standard.

Extension to other types should be made by observing the principles laid down in this International Standard.

1 Scope

This International Standard specifies the series of diameters to be used and the basic dimensions which are common to all types of unplasticized polyvinyl chloride (PVC-U) valves for pipes under pressures of 10 and 16 bar, regardless of their method of manufacture and composition.

2 Field of application

This International Standard applies to

— valves of PN 10 and 16 for nominal outside diameters, d_e from 16 to 160 mm with flanges DN from 10 to 150, given in table 1;

— butterfly valves of PN 10 and 16 with flanges for nominal sizes (DN) from 40 to 300 and flangeless (wafer) butterfly valves for nominal sizes (DN) from 40 to 300, given in table 2;

— valves with plain spigot ends for PVC-U pipe diameters from 16 to 160 mm, given in table 3;

— valves with plain socket ends for PVC-U pipe diameters from 16 to 90 mm, given in table 4.

3 References

ISO 161/1, *Thermoplastics pipes for the transport of fluids — Nominal outside diameters and nominal pressures — Part 1: Metric series.*

ISO 264, *Unplasticized polyvinyl chloride (PVC-U) fittings with plain sockets for pipes under pressure — Laying lengths — Metric series.*

ISO 727, *Fittings of unplasticized polyvinyl chloride (PVC-U), chlorinated polyvinyl chloride (PVC-C) and acrylonitrile/butadiene/styrene (ABS) with plain sockets for pipes under pressure — Dimensions of sockets — Metric series.* 1)

ISO 2536, *Unplasticized polyvinyl chloride (PVC-U) pressure pipes and fittings, metric series — Dimensions of flanges.*

ISO 3460, *Unplasticized polyvinyl chloride (PVC-U) pressure pipes — Metric series — Dimensions of adaptor for backing flange.*

ISO 4434, *Unplasticized polyvinyl chloride (PVC-U) adaptor fittings for pipes under pressure — Laying length and size of threads — Metric series.*

ISO 5752, *Metal valves for use in flanged pipe systems — Face-to-face and centre-to-face dimensions.*

ISO 7349, *Thermoplastics valves — Connection references.*

1) At present at the stage of draft. (Extended revision of ISO 727-1979.)

4 Basic dimensions

4.1 Valves with flanges

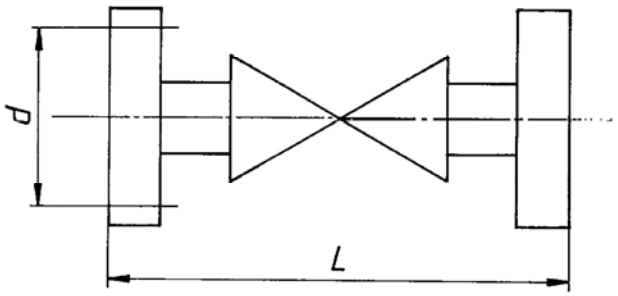

Figure 1

Table 1

Values in millimetres

Nominal outside diameter of pipe d_e [1]	Dimension face-to-face PN 10 and 16 L [2]	tolerance	Pitch circle diameter of bolt holes d [3]	Nominal flange size DN [4]
16	120 [5]	± 2	60	10
20	130		65	15
25	150		75	20
32	160		85	25
40	180		100	32
50	200		110	40
63	230		125	50
75	290	± 3	145	65
90	310		160	80
110	350		180	100
125	400		210	100/125
140	400		210	125
160	480		240	150

1) Nominal outside diameter of thermoplastics pipes in accordance with ISO 161/1.

2) Face-to-face dimensions for valves with flanges.

3) Pitch circle diameter of bolt holes in accordance with ISO 2536.

4) Nominal size for flanges in accordance with ISO 2536.

5) For interchangeability with metal valves, the face-to-face dimension shall be 130.

NOTE — The centre-to-face dimension for three-way valves is $L/2$.

4.2 Butterfly valves

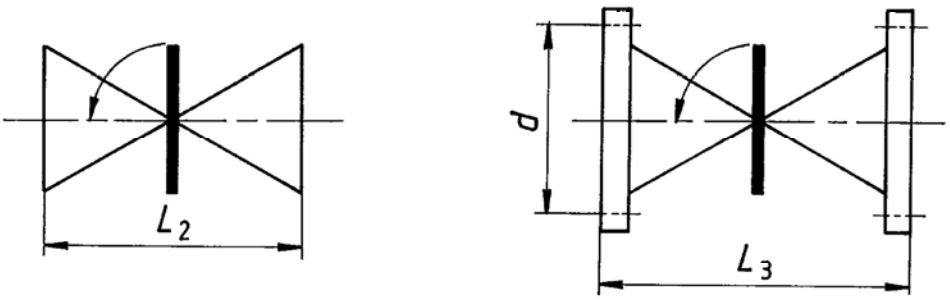

Figure 2

Table 2

Values in millimetres

Nominal outside diameter of pipe	Dimensions face-to-face[1] PN 10 and 16					Pitch circle diameter of bolt holes	Nominal flange size
	flangeless (wafer)			double flanged	tolerance		
	short	medium	long				
d_e[2]	L_2[3]	L_2[3]	L_2[3]	L_3[4]		d[5]	DN[6]
50	33	33	33	106		110	40
63	43	43	43	108		125	50
75	46	46	46	112		145	65
90	46	49	64	114		160	80
110	52	56	64	127	± 2	180	100
140	56	64	70	140		210	125
160	56	70	76	140		240	150
225	60	71	89	152		295	200
280	68	76	114	165		350	250
315	78	83	114	178	± 3	400	300

1) Dimensions face-to-face and tolerances in accordance with ISO 5752.

2) Nominal outside diameter of thermoplastics pipes in accordance with ISO 161/1.

3) Face-to-face dimensions for flangeless (wafer) butterfly valves.

4) Face-to-face dimensions for double flanged butterfly valves.

5) Pitch circle diameter of bolt holes in accordance with ISO 2536.

6) Nominal size for flanges in accordance with ISO 2536.

4.3 Valves with plain spigot ends

These valves may be solvent cemented to the following accessories:

- plain adaptor for backing flange in accordance with ISO 2536 and ISO 3460;
- plain union in accordance with ISO 264;
- plain socket in accordance with ISO 264;
- adaptor socket with thread in accordance with ISO 4434.

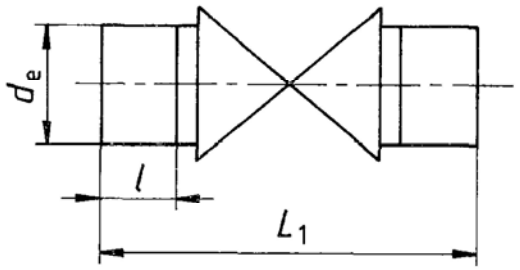

Figure 3

Table 3

Values in millimetres

Spigot diameter[1] (equal to the nominal outside diameter of pipe)	**Spigot length** (minimum)	**Overall dimension**[4]			
		Series I		Series II	
d_e[2]	l[3]	L_1[5]	tolerance	L_1[5]	tolerance
16	14	114	± 2	80	± 2
20	16	124		90	
25	18,5	144		102	
32	22	154		116	
40	26	174		136	
50	31	194		154	
63	37,5	224		182	
75	43,5	284	± 3		
90	51	300			
110	61	340			
125	68,5	390			
140	76	390			
160	86	470			

1) Tolerances of diameters in accordance with ISO 264 (reducing bush).

2) Spigot diameter of valve equal to the nominal outside diameter of thermoplastics pipes in accordance with ISO 161/1.

3) Spigot length equal to the minimum socket length in accordance with ISO 727.

4) For face-to-face dimensions with adaptors in accordance with ISO 3460, see table 1.

5) Overall length of valves with plain spigot ends without any accessories.

NOTE — The centre-to-face dimension for three-way valves is $L_1/2$.

4.4 Valves with plain socket ends

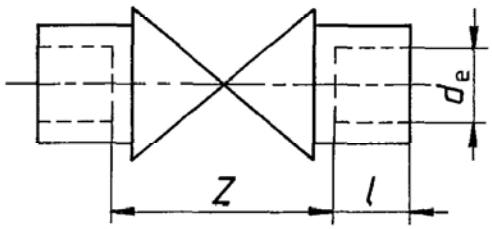

Figure 4

Table 4

Values in millimetres

Inside diameter of socket[1] (equal to the nominal outside diameter of pipe) d_e[2]	Socket length (minimum)	Laying length					
		Series I		Series II		Series III	
	l[3]	Z[4]	tolerance[5]	Z[4]	tolerance[5]	Z[4]	tolerance[5]
16	14	85		65		45	
20	16	88		70		48	
25	18,5	92		75		53	
32	22	100		82		58	
40	26	110	± 5	92	± 5	66	± 5
50	31	120		100		75	
63	37,5	140		120		95	
75	43,5	165		145		120	
90	51	180		165		142	

1) Tolerances of inside diameter of socket in accordance with ISO 727.

2) Inside diameter of the plain socket equal to the nominal diameter of thermoplastics pipes in accordance with ISO 161/1.

3) Minimum socket length in accordance with ISO 727.

4) Laying length in accordance with definition given in ISO 264.

5) Further studies are being undertaken to determine the possibility of reducing the tolerances.

NOTE — The centre-to-face dimension for three-way valves is Z/2.