International Standard 4132

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

Unplasticized polyvinyl chloride (PVC) and metal adaptor fittings for pipes under pressure — Laying lengths and size of threads — Metric series

Raccords union mixtes en polychlorure de vinyle (PVC) non plastifié et métal, pour tubes avec pression — Cotes de montage et dimension des filetages — Série métrique

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 4132 was developed by Technical Committee ISO/TC 138, *Plastic pipes, fittings and valves for the transport of fluids*, and was circulated to the member bodies in January 1978.

It has been approved by the member bodies of the following countries :

Australia	Germany, F. R.	Poland
Austria	Greece	Romania
Belgium	India	South Africa, Rep. of
Canada	Ireland	Spain
Czechoslovakia	Italy	Sweden
Denmark	Mexico	Switzerland
Egypt, Arab Rep. of	Netherlands	Turkey
Finland	New Zealand	United Kingdom
France	Norway	USA

The member body of the following country expressed disapproval of the document on technical grounds :

Japan

Printed in Switzerland

Unplasticized polyvinyl chloride (PVC) and metal adaptor fittings for pipes under pressure — Laying lengths and size of threads — Metric series

1 Scope and field of application

This International Standard specifies the series of diameters to be used and the dimensions which are common to all types of unplasticized polyvinyl chloride (PVC) and metal adaptor fittings for pipes under pressure, to achieve the connection to existing metal pipes, fittings, valves and/or apparatus with pipe threads.

The adaptor fittings have one plain socket/spigot for solvent cement jointing, and other components in metal, but the pressure-tight joint is achieved by the compression of a gasket.

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

NOTE — The figures illustrating this International Standard have been arbitrarily chosen without prejudice to the design of the adaptor fittings.

2 References

ISO 7/1, *Pipe threads where pressure-tight joints are made on the threads — Part 1 : Designation, dimensions and tolerances.*

ISO/R 49, *Malleable cast iron pipe fittings screwed in accordance with ISO 7/1.*[1)]

ISO 228/1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1 : Designation, dimensions and tolerances.*

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

ISO 727, *Unplasticized polyvinyl chloride (PVC) fittings with plain sockets for pipes under pressure — Dimensions of sockets — Metric series.*

3 Designation of size(s)

Adaptor fittings are designated by one or more of the following :

— the nominal inside and/or outside diameter of the PVC components in accordance with ISO 264;

— the nominal size of the pipe joint thread in accordance with ISO 7/1;

— the nominal size of the parallel connecting nut thread in accordance with ISO 228/1.

Examples : Adaptor union 25 × 3/4

Socket union end and loose nut 25 × 1 1/4

4 Dimensions

4.1 Diameters and lengths

The inside diameter of the plain socket or the outside diameter of the plain spigot and their lengths shall correspond with the dimensions stated in ISO 727 or ISO 264. The threaded part of the fitting shall correspond with the dimensions stated in ISO 7/1 and ISO 228/1.

4.2 Laying lengths

When assembling a pipe system, a distance between the ends of the pipes which it is required to join is necessary. This distance is designated as

— "pipe to pipe" : when the openings in the fitting concerned are in a single direction, or

— "pipe to axis" : when the openings in the fitting are not in a single direction.

The "laying lengths" are specified in clauses 5 and 6.

Metal components should conform to ISO/R 49.

4.3 Tolerances

4.3.1 Permissible deviations for "laying lengths" dimensions are given in the tables under the heading "*Z*".

4.3.2 Permissible deviations for the diameters and lengths of the plain sockets shall be in accordance with ISO 727.

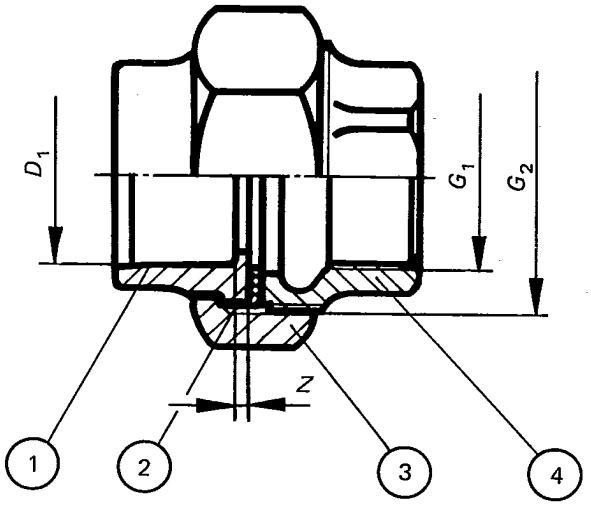
1) Under revision.

4.3.3 Permissible deviations for the diameters of the plain spigots shall be in accordance with ISO 264 and lengths in accordance with the corresponding socket given in ISO 727.

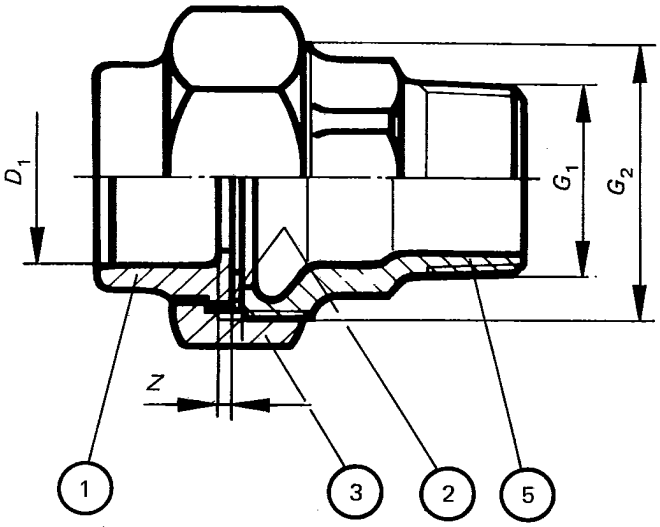
4.3.4 Permissible deviation for threaded components shall be in accordance with ISO 7/1, ISO/R 49 and ISO 228/1.

5 Adaptor unions (flat seal)

5.1 Type I — PVC/metal union (equal) with female pipe thread in metal part



5.2 Type II — PVC/metal union (equal) with male pipe thread in metal part



1. Union end (PVC)
2. Gasket
3. Union nut (metal)
4. Union bush (metal female thread)
5. Union bush (metal male thread)

Table 1

Union end (PVC)[1] (plain socket)		Union nut	Union bush	
Diameter of the socket	Laying length	Female connection[2]	Joint thread[3] male (Rc), or female (Rp)	Male connection[2]
D_1 mm	Z mm	G_2 in	G_1 in	G_2 in
16	3 ± 1	3/4	3/8	3/4
20	3 ± 1	1	1/2	1
25	3 ± 1	1 1/4	3/4	1 1/4
32	3 ± 1	1 1/2	1	1 1/2
40	3 ± 1	2	1 1/4	2
50	3 ± 1	2 1/4	1 1/2	2 1/4
63	3 ± 1	2 3/4	2	2 3/4
75	3 ± 1	3 1/2	2 1/2	3 1/2
90	5^{+2}_{-1}	4	3	4

1) Tolerance of diameter and length of sockets in accordance with ISO 727.

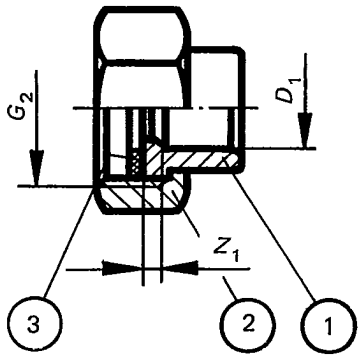
2) Parallel threads in accordance with ISO 228/1.

3) Joint threads in accordance with ISO 7/1.

NOTE — Other dimensions of metal components in accordance with ISO/R 49.

6 Adaptor connections (flat seal)

6.1 Type I — PVC union end and loose metal nut



① PVC union end
② Metal nut
③ Flat seal

Table 2

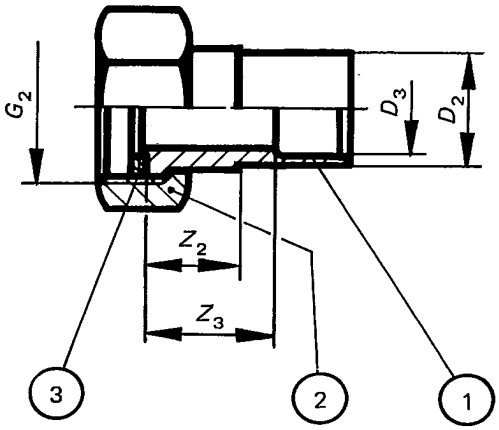
Union end[1] (plain socket)		Metal nut[2] (parallel female thread)
Diameter of the socket D_1 mm	Laying length Z_1 mm	G_2 in
16	3 ± 1	3/4
20	3 ± 1	1
25	3 ± 1	1 1/4
32	3 ± 1	1 1/2
40	3 ± 1	2
50	3 ± 1	2 1/4
63	3 ± 1	2 3/4
75	3 ± 1	3 1/2
90	5^{+2}_{-1}	4

1) Tolerance of diameter and length of sockets in accordance with ISO 727.

2) Parallel threads in accordance with ISO 228/1.

NOTE — Other dimensions of metal components in accordance with ISO/R 49.

6.2 Type II — PVC spigot/socket end and loose metal nut



① PVC spigot socket end
② Metal nut
③ Flat seal

Table 3

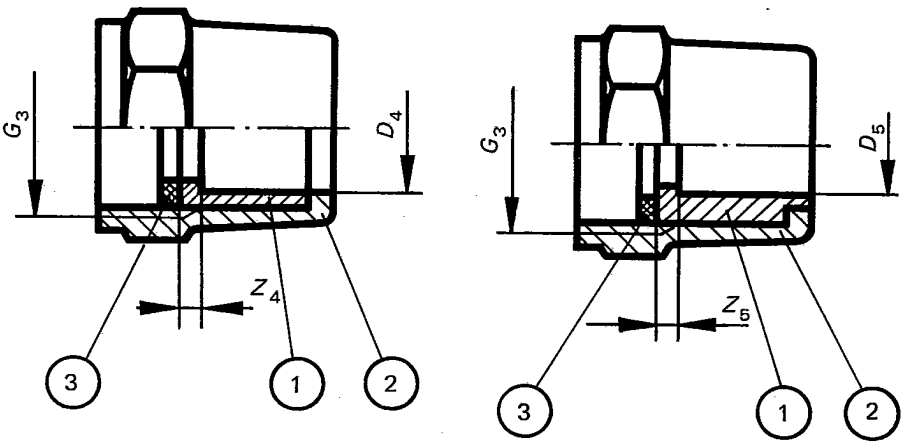
Union end (plain spigot)		Union end[1] (plain socket)		Metal nut[2] (parallel female thread)
Diameter of the spigot D_2 mm	Laying length Z_2 mm	Diameter of the socket D_3 mm	Laying length Z_3 mm	G_2 in
16	20^{+2}_{-1}	12	22^{+2}_{-1}	1/2
20	22^{+2}_{-1}	16	24^{+2}_{-1}	3/4
25	23^{+2}_{-1}	20	26^{+3}_{-1}	1
32	26^{+3}_{-1}	25	29^{+3}_{-1}	1 1/4
40	28^{+3}_{-1}	32	32^{+3}_{-1}	1 1/2
50	31^{+3}_{-1}	40	36^{+4}_{-1}	2

1) Tolerance of diameter and length of sockets in accordance with ISO 727.

2) Parallel threads in accordance with ISO 228/1.

NOTE — Other dimensions of metal components in accordance with ISO/R 49.

6.3 Type III — PVC sleeve and loose metal nut enclosure (special design)



① PVC sleeve
② Metal nut (special design)
③ Flat seal

Table 4

PVC sleeve[1] (plain socket)		Reduced sleeve[1] (plain socket)		Metal nut[2] (parallel female thread)
Diameter of the socket D_4 mm	Laying length Z_4 mm	Diameter of the socket D_5 mm	Laying length Z_5 mm	G_3 in
12	3 ± 1	—	—	3/8
16	3 ± 1	12	5 ± 1	1/2
20	3 ± 1	16	5 ± 1	3/4
25	3 ± 1	20	6 ± 1	1
32	3 ± 1	25	7 ± 1	1 1/4
40	3 ± 1	32	7 ± 1	1 1/2
50	3 ± 1	40	8 ± 1	2
63	3 ± 1	50	10 ± 1	2 1/2

1) Tolerance of diameter and length of sockets in accordance with ISO 727.

2) Parallel threads in accordance with ISO 228/1.

NOTE — Other dimensions of metal components in accordance with ISO/R 49.