

**Fittings made from
unplasticized
poly(vinyl chloride)
(PVC-U), chlorinated
poly(vinyl chloride)
(PVC-C) or
acrylonitrile/butadiene/
styrene (ABS) with
plain sockets for pipes
under pressure —**

Part 2: Inch-based series

ICS 23.040.45

National foreword

This British Standard reproduces verbatim ISO 727-2:2005 and implements it as the UK national standard. It supersedes BS ISO 727-2:2002 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee PRI/88, Plastics piping systems, to Subcommittee PRI/88/2, Plastics piping for pressure applications, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii and iii, a blank page, pages 1 to 7 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 2 August 2005

© BSI 2 August 2005

INTERNATIONAL
STANDARD

ISO
727-2

Second edition
2005-06-01

**Fittings made from unplasticized
poly(vinyl chloride) (PVC-U), chlorinated
poly(vinyl chloride) (PVC-C) or
acrylonitrile/butadiene/styrene (ABS) with
plain sockets for pipes under pressure —**

**Part 2:
Inch-based series**

*Raccords en poly(chlorure de vinyle) non plastifié (PVC-U), en
poly(chlorure de vinyle) chloré (PVC-C) ou en
acrylonitrile/butadiène/styrène (ABS), à emboîtements lisses pour tubes
sous pression —*

Partie 2: Série basée sur les inches



Reference number
ISO 727-2:2005(E)

www.parsethylene-kish.com

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 727-2 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 2, *Plastics pipes and fittings for water supplies*.

This second edition cancels and replaces the first edition (ISO 727-2:2002), which has been technically revised.

ISO 727 consists of the following parts, under the general title *Fittings made from unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) or acrylonitrile/butadiene/styrene (ABS) with plain sockets for pipes under pressure*:

- Part 1: *Metric series*
- Part 2: *Inch-based series*

www.parsethylene-kish.com

Fittings made from unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) or acrylonitrile/butadiene/styrene (ABS) with plain sockets for pipes under pressure —

Part 2: Inch-based series

IMPORTANT — It is strongly recommended that the advice of the fittings manufacturer be sought in the selection of an appropriate type of solvent cement used to connect sockets to pipes, depending upon whether the cylindrical or conical type of socketed fitting is being used for a particular installation.

1 Scope

This part of ISO 727 specifies the dimensions, in millimetres, of plain sockets (cylindrical and conical), for the inch-based pipe series, in fittings made from unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) or acrylonitrile/butadiene/styrene (ABS), intended for connecting by solvent cementing to pipes of the corresponding material for use under pressure. The resulting joint does not require mechanical anchorage.

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 161-2:1996, *Thermoplastics pipes for the conveyance of fluids — Nominal outside diameters and nominal pressures — Part 2: Inch-based series*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

cylindrical socket

parallel socket

plain socket having a generally cylindrical form with similar root and mouth dimensions

NOTE In practice, such sockets are manufactured with a slight taper in order to assist in removing the moulded fitting from the moulding tool (see 4.1).

3.2 conical socket
tapered socket
plain socket having a designed taper opening up from root to mouth, and having less clearance than a cylindrical socket

3.3 mean inside diameter at mid-point of socket depth
 d_{im}
arithmetic mean of two diameters measured at right angles to each other at the mid-point of the socket depth

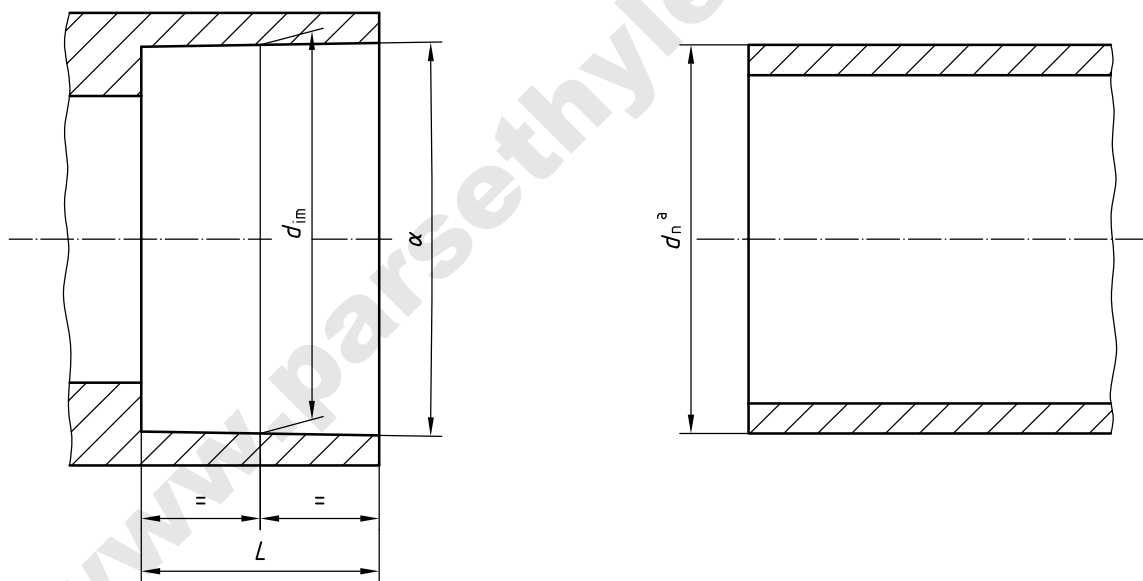
4 Socket dimensions

4.1 Cylindrical sockets

Cylindrical sockets (see Figure 1) shall conform to Table 1 for sockets made from PVC-U or PVC-C and to Table 2 for sockets made from ABS.

Socket sizes specified are based on the nominal outside diameters of thermoplastics pipes, d_n , according to ISO 161-2.

The maximum included angle α of the socketed portion of a fitting (taper of cylindrical socket) shall not exceed $0^\circ 40'$ for $\leq DN 2\ 1/2$ and $0^\circ 30'$ for $\geq DN 3$.



^a In accordance with ISO 161-2.

a) Socket

b) Pipe

Figure 1 — Dimensions of cylindrical sockets

Table 1 — Dimensions of cylindrical sockets made from PVC-U or PVC-C

Dimensions in millimetres

DN	Minimum socket length ^a <i>L</i>	Mean inside diameter at midpoint of socket depth		Out-of-roundness max.
		min.	max.	
3/8	14,5	17,1	17,3	0,25
1/2	16,5	21,3	21,5	0,25
3/4	19,5	26,7	26,9	0,25
1	22,5	33,5	33,7	0,25
1 1/4	27	42,2	42,4	0,3
1 1/2	30	48,2	48,4	0,4
2	36	60,3	60,5	0,5
2 1/2	43,5	75,1	75,3	0,6
3	50,5	88,8	89,1	0,7
3 1/2	56,5	101,6	101,9	0,7
4	63	114,2	114,5	0,8
5	76	140,1	140,4	1,0
6	90	168,2	168,5	1,2
7	103	193,7	194,0	1,4
8	115,5	219,0	219,4	1,6
10	142,5	272,8	273,4	2
12	168	323,7	324,3	2,3

NOTE The values given for *L* and d_{im} in this table have been taken from BS 4346-1:1969.

^a Due to the shrinkage behaviour of cylindrical sockets made from PVC-C, the socket length may be 1 mm shorter.

Table 2 — Dimensions of cylindrical sockets made from ABS

Dimensions in millimetres

DN	Minimum socket length <i>L</i>	Mean inside diameter				Out-of-roundness max.
		Socket mouth		Socket root		
		d_{s1}		d_{s2}		
		min.	max.	min.	max.	
3/8	14,5	17,1	17,3	16,9	17,3	0,25
1/2	16,5	21,3	21,5	21,1	21,4	0,25
3/4	19,5	26,7	26,9	26,4	26,8	0,25
1	22,5	33,5	33,7	33,2	33,6	0,25
1 1/4	27,0	42,2	42,5	41,9	42,3	0,3
1 1/2	30,0	48,2	48,6	47,9	48,3	0,4
2	36,0	60,3	60,7	60,0	60,4	0,5
3	50,5	89,0	89,3	88,5	88,9	0,6
4	63,0	114,4	114,8	113,9	114,3	0,8
6	90,0	168,4	168,8	167,8	168,3	1,2
8	115,5	219,3	219,9	218,7	219,1	1,6

NOTE The values given for L , d_{s1} and d_{s2} in this table have been taken from BS 5392-1:1976.

4.2 Conical sockets

Conical sockets (see Figure 2) shall conform to Table 3.

Socket sizes specified are based on the nominal outside diameters of thermoplastics pipes, d_n , according to ISO 161-2.

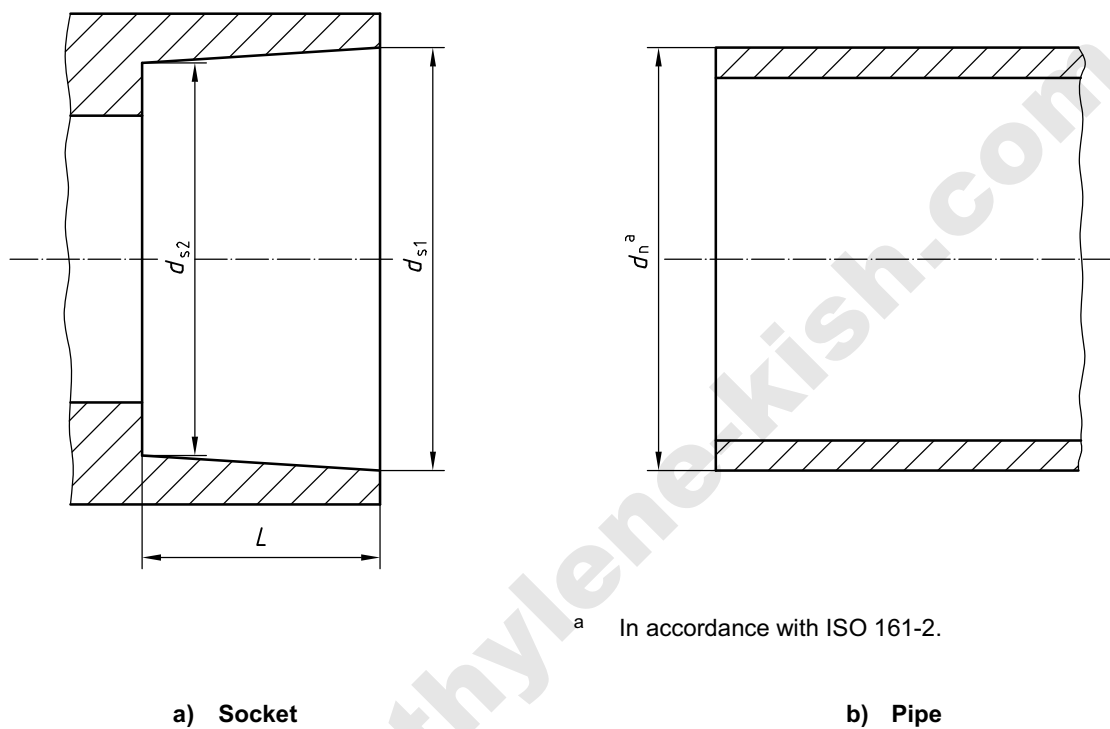


Figure 2 — Dimensions of conical sockets

Table 3 — Dimensions of conical sockets made from PVC-U or PVC-C

Dimensions in millimetres

DN	Minimum socket length ^a <i>L</i>	Mean inside diameter				Out-of-roundness max.
		Socket mouth		Socket root		
		<i>d_{s1}</i>		<i>d_{s2}</i>		
		min.	max.	min.	max.	
1/8	12,7	10,49	10,69	10,08	10,28	0,41
1/4	15,9	13,92	14,12	13,51	13,71	0,41
3/8	19,1	17,35	17,55	16,94	17,14	0,41
1/2	22,2	21,44	21,64	21,13	21,33	0,41
3/4	25,4	26,77	26,97	26,47	26,67	0,51
1	28,6	33,53	33,79	33,14	33,40	0,51
1 1/4	31,8	42,29	42,55	41,91	42,17	0,61
1 1/2	34,9	48,41	48,71	47,96	48,26	0,61
2	38,1	60,48	60,78	60,02	60,32	0,61
2 1/2	44,5	73,20	73,56	72,67	73,03	0,76
3	47,6	89,11	89,51	88,5	88,9	0,76
3 1/2	54	101,81	102,21	101,2	101,6	0,76
4	57,2	114,53	114,99	113,84	114,30	0,76
5	66,7	141,56	142,06	140,8	141,3	1,52
6	76,2	168,55	169,11	167,72	168,28	1,52
8	101,6	219,46	220,22	218,32	219,08	2,29
10	127,0	273,43	274,19	272,29	273,05	2,54
12	152,4	324,23	324,99	323,03	323,85	3,05

NOTE The values in this table have been taken from ASTM D 2467:2004 and ASTM F 439:2002.

^a Rounded to 1/10 of a millimetre.

5 Marking

The identification of the different types of plain socket (cylindrical and conical) shall be reflected in the minimum required marking for the relevant product and shall be included in the corresponding product standard.

Bibliography

- [1] BS 4346-1:1969, *Joints and fittings for use with unplasticized PVC pressure pipes — Injection moulded unplasticized PVC fittings for solvent welding for use with pressure pipes, including potable water supply*
- [2] BS 5392-1:1976, *Specification for acrylonitrile-butadiene-styrene (ABS) fittings for use with ABS pressure pipe — Fittings for use with pipe for industrial uses*
- [3] ASTM D 2467:2004, *Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80*
- [4] ASTM F 439:2002, *Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80*

www.parsethylene-kish.com

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover.
Tel: +44 (0)20 8996 9000. Fax: +44 (0)20 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: +44 (0)20 8996 9001.
Fax: +44 (0)20 8996 7001. Email: orders@bsi-global.com. Standards are also available from the BSI website at <http://www.bsi-global.com>.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre.
Tel: +44 (0)20 8996 7111. Fax: +44 (0)20 8996 7048. Email: info@bsi-global.com.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration.
Tel: +44 (0)20 8996 7002. Fax: +44 (0)20 8996 7001.
Email: membership@bsi-global.com.

Information regarding online access to British Standards via British Standards Online can be found at <http://www.bsi-global.com/bsonline>.

Further information about BSI is available on the BSI website at <http://www.bsi-global.com>.

Copyright

Copyright subsists in all BSI publications. BSI also holds the copyright, in the UK, of the publications of the international standardization bodies. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI.

This does not preclude the free use, in the course of implementing the standard, of necessary details such as symbols, and size, type or grade designations. If these details are to be used for any other purpose than implementation then the prior written permission of BSI must be obtained.

Details and advice can be obtained from the Copyright & Licensing Manager.
Tel: +44 (0)20 8996 7070. Fax: +44 (0)20 8996 7553.
Email: copyright@bsi-global.com.