IS 10124-11 (2009): Fabricated PVC-U fittings for Potable Water Supplies, Part 11: Specific Requirements for 30 degree Bends [CED 50: Plastic Piping System]

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भारतीय मानक

पेय जल आपूर्ति के लिए सविरंचित पी वी सी-यू फिटिंगें — विशिष्टि

भाग 11 30° बैंडों की विशिष्ट अपेक्षाएँ

(दूसरा पुनरीक्षण)

Indian Standard

FABRICATED PVC-U FITTINGS FOR POTABLE WATER SUPPLIES — SPECIFICATION

PART 11 SPECIFIC REQUIREMENTS FOR 30° BENDS

(Second Revision)

ICS 23.040.45; 91.140.60

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May 2011 **Price Group 2**

Plastics Piping Systems Sectional Committee, CED 50

FOREWORD

This Indian Standard (Part 11) (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Plastics Piping Systems Sectional Committee had been approved by the Civil Engineering Division Council.

This standard was first published in 1982 and revised in 1988. In this revision, following modifications have been made:

a) Sizes and classes of fittings have been aligned with IS 4985 : 2000 'Unplasticized PVC pipes for potable water supplies — Specification'.
b) Requirements for bends for elastomeric sealing ring joints have also been included.

The requirements of fabricated PVC-U fittings are covered in thirteen parts. The other parts in the series are:

Part 1 General requirements
Part 2 Specific requirements for sockets
Part 3 Specific requirements for straight reducers
Part 4 Specific requirements for caps
Part 5 Specific requirements for equal tees
Part 6 Specific requirements for flanged tail pieces with metallic flanges
Part 7 Specific requirements for threaded adaptors
Part 8 Specific requirements for 90° bends
Part 9 Specific requirements for 60° bends
Part 10 Specific requirements for 45° bends
Part 12 Specific requirements for 22 ½° bends
Part 13 Specific requirements for 11 ¼° bends

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

FABRICATED PVC-U FITTINGS FOR POTABLE WATER SUPPLIES — SPECIFICATION

PART 11 SPECIFIC REQUIREMENTS FOR 30° BENDS

(Second Revision)

1 SCOPE

This standard (Part 11) lays down the requirements for manufacture, dimensions and marking for fabricated PVC-U 30° bends for potable water supplies.

2 REFERENCES

The standards listed below contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
4985 : 2000	Unplasticized PVC pipes for potable water supplies — Specification (*third revision*)
10124 (Part 1) : 2009	Specification for fabricated PVC-U fittings for potable water supplies — Specification: Part 1 General requirements

3 REQUIREMENTS

3.1 General

The general requirements for material, sizes, tests, sampling and criteria for conformity shall conform to IS 10124 (Part 1).

3.2 Manufacture

3.2.1 Typical illustration of 30° bend is shown in Fig.1. Typical illustration of 30° bend for elastomeric sealing ring joint is shown in Fig. 2.

3.2.2 *Dimensions*

The dimensions of 30° bends shall comply with those given in Table 1 read with Fig.1. The dimensions of 30° bends for elastomeric sealing ring joint shall comply with those given in Table 2 read with Fig. 2.

3.2.3 The bends may either be plain at both ends socketed either at one end or both ends as agreed to between the manufacturer and the purchaser. In the case of socket, measurements shall comply with IS 10124 (Part 1).

NOTE — For 0.25 MPa pressure class, bends should not be made from 0.25 MPa pressure class pipes. For this bends made from 0.4 MPa pressure class should be used.

4 MARKING

4.1 Each 30° bend shall be clearly and indelibly marked with the following information:

a) Manufacturer's name or identification mark,

b) Size of the bend and the appropriate class (working pressure) of IS 4985 to which the pressure rating of the fitting corresponds,

c) Degree of bend, and

d) Bends shall be marked in colour as indicated below for different classes of fittings:

Class of the Fittings	*Colour*
Class 2 (0.4 MPa)	Blue
Class 3 (0.6 MPa)	Green
Class 4 (0.8 MPa)	Brown
Class 5 (1.0 MPa)	Yellow
Class 6 (1.25 MPa)	Black
Plumbing	Pink

4.2 BIS Certification Marking

Each 30° bend may also be marked with the Standard Mark.

4.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for the use of the Standard Mark may be granted to the manufacturer or producer may be obtained from the Bureau of Indian Standards.

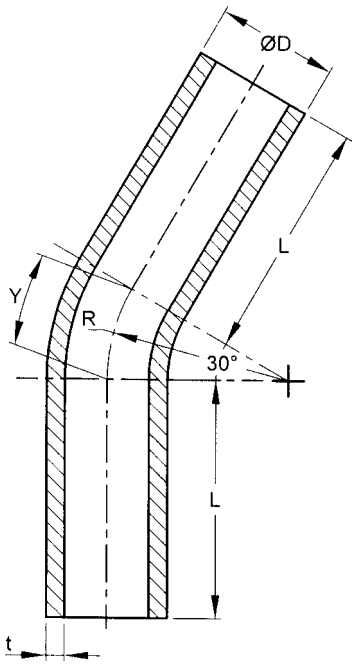


FIG. 1 30° BEND

Table 1 Dimensions of 30° Bends

(*Clause* 3.2.2, and *Fig*. 1)

All dimensions in millimetres.

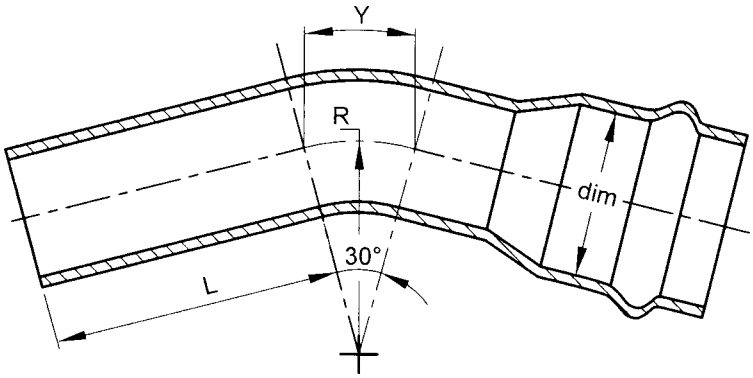
Sl No.	Nominal Size	*Y* *Min*	*L* (Only for Plain Ends) *Min*	*R* *Min*	Minimum Wall Thickness (*t*) for Working Pressure MPa					
					0.4 (Class 2)	0.6 (Class 3)	0.8 (Class 4)	1.0 (Class 5)	1.25 (Class 6)	Plumbing
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
i)	20	32	20	60	—	—	—	1.0	1.3	2.5
ii)	25	40	25	75	—	—	1.1	1.3	1.5	2.6
iii)	32	51	32	96	—	—	1.4	1.6	1.9	3.1
iv)	40	63	40	120	—	1.3	1.6	1.9	2.5	3.3
v)	50	79	50	150	—	1.5	2.1	2.5	3.0	3.4
vi)	63	99	63	189	1.4	2.0	2.5	3.2	3.8	—
vii)	75	118	75	225	1.7	2.4	3.1	3.8	4.6	—
viii)	90	142	90	270	1.9	2.8	3.6	4.5	5.5	—
ix)	110	173	110	330	2.3	3.4	4.4	5.5	6.7	—
x)	125	197	125	375	2.7	3.9	5.1	6.3	7.6	—
xi)	140	220	140	420	2.9	4.4	5.7	7.0	8.6	—
xii)	160	252	160	480	3.4	4.9	6.5	8.0	9.8	—
xiii)	180	283	180	540	3.8	5.5	7.2	9.0	10.9	—
xiv)	200	314	200	600	4.2	6.2	8.0	10.0	12.3	—
xv)	225	354	225	675	4.7	6.9	9.0	11.2	13.8	—
xvi)	250	393	250	750	5.2	7.7	10.0	12.5	15.3	—
xvii)	280	440	280	840	5.8	8.6	11.3	13.9	17.1	—
xviii)	315	495	315	945	6.5	9.7	12.6	15.6	19.3	—
xix)	355	558	355	1 065	7.3	10.8	14.3	17.7	21.7	—
xx)	400	628	400	1 200	8.2	12.2	16.1	19.8	24.5	—
xxi)	450	707	450	1 350	9.3	13.7	18.0	22.4	27.5	—
xxii)	500	785	500	1 500	10.3	15.3	20.1	24.8	30.5	—
xxiii)	560	880	560	1 680	11.6	17.2	22.4	27.8	34.2	—
xxiv)	630	990	630	1 890	13.0	19.2	25.2	31.8	38.4	—

NOTES

1 Minimum wall thickness is calculated on the basis of 90 percent of the minimum wall thickness of the corresponding size and pressure class of pipe rounded off to the next higher 0.1 mm.

2 *Y*, *Min* is calculated from $\frac{30^{o} \times 2 \eth R}{360^{o}}$

3 *R*, *Min* radius of the bend, is equal to 3 times the nominal outside diameter (*D*).



NOTE — The drawings are only intended to define the terms used in Table 1 and Table 2 and are not intended to illustrate specific design features.

FIG. 2 30° BEND FOR ELASTOMERIC SEALING RING JOINT

Table 2 Dimensions of 30° Bend for Elastomeric Sealing Ring Joint

(*Clause* 3.2.2, and *Fig*. 2)

All dimensions in millimetres.

Sl No.	Nominal Size	*Y* *Min*	*L* (Plain Ends) *Min*	*R* *Min*	Minimum Wall Thickness (*t*) for Working Pressure MPa				
					0.4 (Class 2)	0.6 (Class 3)	0.8 (Class 4)	1.0 (Class 5)	1.25 (Class 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i)	63	99	107	189	—	2.0	2.6	3.2	3.9
ii)	75	118	112	225	—	2.4	3.1	3.8	4.6
iii)	90	142	118	270	—	2.8	3.6	4.5	5.5
iv)	110	173	127	330	2.3	3.4	4.4	5.5	6.8
v)	125	197	133	375	2.7	3.9	5.1	6.3	7.7
vi)	140	220	139	420	2.9	4.4	5.7	7.0	8.6
vii)	160	252	146	480	3.4	4.9	6.5	8.0	9.9
viii)	180	283	156	540	3.8	5.5	7.2	9.0	11.0
ix)	200	314	164	600	4.2	6.2	8.0	10.0	12.3
x)	225	354	175	675	4.7	6.9	9.0	11.2	13.8
xi)	250	393	185	750	5.2	7.7	10.1	12.5	15.3
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xix)	630	990	322	1 890	13.0	19.2	25.2	31.3	38.5

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This Indian Standard has been developed from Doc No. : CED 50 (7441).

Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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