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मानक

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IS 10124-3 (2009): Fabricated PVC-U Fittings for Potable Water Supplies - Specification, Part 3: Specific Requirements for Straight Reducers [CED 50: Plastic Piping System]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
पेय जल आपूर्ति के लिए सविरंचित
पी वी सी-यू फिटिंगें — विशिष्ट
भाग 3 स्ट्रेट रिड्यूसरों की विशिष्ट अपेक्षाएँ
(दूसरा पुनरीक्षण)

Indian Standard
FABRICATED PVC-U FITTINGS FOR POTABLE WATER
SUPPLIES — SPECIFICATION
PART 3 SPECIFIC REQUIREMENTS FOR STRAIGHT REDUCERS
(*Second Revision*)

ICS 23.040.45; 91.140.60

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Price Group 2

FOREWORD

This Indian Standard (Part 3) (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) Additional sizes for two stage reducers have 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 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 11 Specific requirements for 30° 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 3 SPECIFIC REQUIREMENTS FOR STRAIGHT REDUCERS***(Second Revision)***1 SCOPE**

This standard (Part 3) lays down the requirements for manufacture, dimensions and marking for fabricated PVC-U straight reducers 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:

<i>IS No.</i>	<i>Title</i>
4985:2000	Unplasticized PVC pipes for potable water supplies — Specification (<i>third revision</i>)
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 materials, sizes, tests, sampling and criteria for conformity shall conform to IS 10124 (Part 1).

3.2 Manufacture

3.2.1 A typical illustration of straight reducer is given in Fig. 1.

3.2.2 Dimensions

The dimensions of straight reducers shall comply with those given in Table 1 read with Fig. 1.

4 MARKING

4.1 Each straight reducer shall be clearly and indelibly marked with the following information:

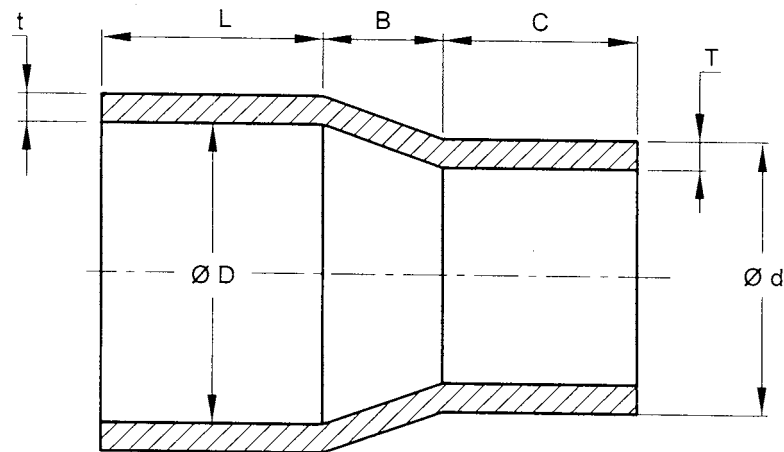
- Manufacturer's name or identification mark,
- Size of the reducer and the appropriate class (working pressure) of IS 4985 to which the pressure rating of the fitting corresponds, and
- The reducer shall be marked in colour as indicated below for different classes of fittings:

<i>Class of the Fittings</i>	<i>Colour</i>
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

4.2 BIS Certification Marking

Each straight reducer 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.



D = mean socket internal diameter at mid-point of socket length as specified in IS 10124 (Part 1).

d = mean outside diameter of a spigot portion that is mean outside diameter of pipe used for making reducer.

L = minimum socket length in accordance with in IS 10124 (Part 1).

C = minimum length of spigot portion (plain end) calculated from $0.5 d_{nom} + 10$ mm, where d_{nom} is the nominal outside diameter of pipe from which the reducer is fabricated.

T = minimum wall thickness of spigot portion (corresponds to minimum wall thickness of pipe of the same nominal size as that of the socket and the corresponding pressure class).

t = minimum wall thickness of socket portion, calculated on the basis of 90 percent of the minimum wall thickness at spigot portion rounded off to the next higher 0.1 mm.

NOTE — This drawing is only intended to define the terms used in Table 1 and is not intended to illustrate specific design features.

FIG. 1 STRAIGHT REDUCERS

Table 1 Dimensions of Straight Reducers

(Clause 3.2.2, and Fig.1)

All dimensions in millimetres.

Sl No.	Nominal Size	d	B	C	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)			
					T	t	T	t	T	t	T	t	T	t		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
i)	25-20	20.0	20.3	10	20	—	—	—	—	—	—	1.1	1.0	1.4	1.3	
ii)	32-25	25.0	25.3	10	23	—	—	—	—	1.2	1.1	1.4	1.3	1.7	1.5	
iii)	40-32	32.0	32.3	10	26	—	—	—	—	1.5	1.4	1.8	1.6	2.2	1.9	
iv)	50-40	40.0	40.3	15	30	—	—	1.4	1.3	1.8	1.6	2.2	2.0	2.8	2.5	
v)	63-50	50.0	50.3	15	35	—	—	1.7	1.5	2.3	2.1	2.8	2.5	3.4	3.0	
vi)	75-63	63.0	63.3	20	42	1.5	1.4	2.2	2.0	2.8	2.5	3.5	3.2	4.3	3.8	
vii)	90-75	75.0	75.3	35	48	1.8	1.7	2.6	2.4	3.4	3.1	4.2	3.8	5.1	4.6	
viii)	110-90	90.0	90.3	35	55	2.1	1.9	3.1	2.8	4.0	3.6	5.0	4.5	6.1	5.5	
ix)	125-110	110.0	110.4	35	65	2.5	2.3	3.7	3.4	4.9	4.4	6.1	5.5	7.5	6.7	
x)	140-125	125.0	125.4	45	73	2.9	2.7	4.3	3.9	5.6	5.1	6.9	6.3	8.5	7.6	
xi)	160-140	140.0	140.5	45	80	3.2	2.9	4.8	4.4	6.3	5.7	7.7	7.0	9.5	8.6	
xii)	180-160	160.0	160.5	45	90	3.7	3.4	5.4	4.9	7.2	6.5	8.8	8.0	10.9	9.8	
xiii)	200-180	180.0	180.6	45	100	4.2	3.8	6.1	5.5	8.0	7.2	9.9	9.0	12.2	10.9	
xiv)	225-200	200.0	200.6	55	110	4.6	4.2	6.6	6.2	8.9	8.0	11.0	10.0	13.6	12.3	
xv)	250-225	225.0	225.7	55	123	5.2	4.7	7.6	6.9	10.0	9.0	12.4	11.2	15.3	13.8	
xvi)	280-250	250.0	250.8	55	135	5.7	5.2	8.5	7.7	11.2	10.0	13.8	12.5	17.0	15.3	
xvii)	315-280	280.0	280.9	55	150	6.4	5.8	9.5	8.6	12.5	11.3	15.4	13.9	19.0	17.1	
xviii)	355-315	315.0	316.0	65	168	7.2	6.5	10.7	9.7	14.0	12.6	17.3	15.6	21.4	19.3	

Table 1 (Concluded)

Sl No.	Nominal Size	<i>d</i>	<i>B</i>	<i>C</i>	Minimum Wall Thickness (<i>t</i>) for Working Pressure MPa											
					0.4 (Class 2)		0.6 (Class 3)		0.8 (Class 4)		1.0 (Class 5)		1.25 (Class 6)			
					<i>T</i>	<i>t</i>	<i>T</i>	<i>t</i>	<i>T</i>	<i>t</i>	<i>T</i>	<i>t</i>	<i>T</i>	<i>t</i>		
					(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
xix)	400-355	355.0	356.1	65	188	8.1	7.3	12.0	10.8	15.8	14.3	19.6	17.7	24.1	21.7	
xx)	450-400	400.0	401.2	65	210	9.1	8.2	13.5	12.2	17.8	16.1	22.0	19.8	27.2	24.5	
xxi)	500-450	450.0	451.4	65	235	10.3	9.3	15.2	13.7	20.0	18.0	24.8	22.4	30.5	27.5	
xxii)	560-500	500.0	501.5	75	260	11.4	10.3	16.9	15.3	22.3	20.1	27.5	24.8	33.9	30.5	
xxiii)	630-560	560.0	561.7	75	290	12.8	11.6	18.9	17.2	24.9	22.4	30.8	27.8	38.0	34.2	
xxiv)	90-63	63.0	63.3	30	42	—	—	2.0	2.0	2.8	2.5	3.5	3.2	4.3	3.8	
xxv)	140-110	110.0	110.4	45	65	2.5	2.3	3.7	3.4	4.9	4.4	6.1	5.5	7.5	6.7	
xxvi)	160-110	110.0	110.4	65	65	2.5	2.3	3.7	3.4	4.9	4.4	6.1	5.5	7.5	6.7	
xxvii)	280-200	200.0	200.6	65	110	4.6	4.2	6.8	6.2	8.9	8.0	11.0	10.0	13.6	12.3	
xxviii)	250-200	200.0	200.6	65	110	4.6	4.2	6.8	6.2	8.9	8.0	11.0	10.0	17.0	15.3	
xxix)	315-250	250.0	250.8	85	135	5.7	5.2	8.5	7.7	11.2	10.0	13.8	12.5	17.0	15.3	
xxx)	355-280	280.0	280.9	85	150	6.4	5.8	9.5	8.6	12.5	11.3	15.4	13.9	19.0	17.1	

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

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Amendments Issued Since Publication

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