



**PRODUCT MANUAL FOR
FABRICATED HIGH DENSITY POLYETHYLENE (HDPE)
FITTINGS FOR POTABLE WATER SUPPLIES
ACCORDING TO IS 8360 (PART 1 TO 3): 1977**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	Product	:	IS 8360 (Part 1 to 3) : 1977
	Title	:	FABRICATED HIGH DENSITY POLYETHYLENE (HDPE) FITTINGS FOR POTABLE WATER SUPPLIES
	No. of Amendments	:	NIL
2.	Sampling Guidelines:		
a)	Raw material	:	HDPE Pipes – IS 4984
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	2 Nos for all tests
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – C
5.	Possible tests in a day : Please refer ANNEX – D		
6.	Scope of the Licence : Please refer ANNEX – E		

ANNEX A**Grouping Guidelines**

1. IS 8360 (Part 1 to 3): 1977 covers requirements for various types of Fabricated High Density Polyethylene (HDPE) fittings for water supplies.
2. Each type of fittings are categorized into the following groups:
 - A) Based on Type – i) 90° Tees
ii) 90° Bends

B) Based on pressure ratings and sizes of HDPE pipes used in manufacturing of fittings :

Material Grade	Pressure Rating Group (PN)			Size Group DN (mm)			
	Low	Medium	High	Group-I	Group-II	Group-III	Group-IV
PE 63	2 to 4	5 to 10	12.5 to 20	16 to 180	200 to 500	560 to 1000	1200 to 2000
PE 80	2 to 4	5 to 10	12.5 to 20	16 to 180	200 to 500	560 to 1000	1200 to 2000
PE 100	2 to 4	5 to 10	12.5 to 20	16 to 180	200 to 500	560 to 1000	1200 to 2000

3. For considering GoL/CSoL, testing shall be done as follows:
 - a) Fittings with highest pressure rating from each pressure rating group (Low, Medium and High) shall be tested to cover fittings of all pressure ratings in that pressure rating group and manufactured from same material grade.
 - b) One fitting from each size group and type shall be tested to cover fittings of all sizes in that size group and type tested.
4. The Firm shall declare the varieties of fittings intended to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
5. During the operation of the Licence, BO shall ensure that all Pressure ratings, Material grades and Sizes covered in the Licence are tested in rotation, to the extent possible.

Note:

- (i) As IS 8360 (Part 1) covers General Requirements and are applicable to all other parts i.e IS 8360 (Part 2 to Part 3) wherein specific requirements relevant to each type of fittings are prescribed, licence may be granted as per IS 8360 (Part 1).

(ii) Various types of fittings proposed to be covered in the licence as per different parts of IS 8360 shall be shown as varieties under the licence.

(iii) The marking on the product shall be as per the relevant part as applicable.

(iv) Minimum marking fee applicable for the licence shall be as given below:

- Whenever both the types as per different parts are covered under the licence, the highest minimum marking fee amongst the minimum marking fee of both the parts shall be collected.
- However if only one type is covered in the licence, minimum marking fee applicable for that part shall be collected.
- Unit Rate shall be as per the existing unit rates for the relevant part.

ANNEX B**List of Test Equipment***Major test equipment required to test as per the Indian Standard*

S. No.	Tests used in with Clause Reference	Test Equipment
1	Dimensions of fittings [Clause 4 of IS 8360 (Part 1)] Laying length [Clause 2.2.2 of IS 8360 (part 2) and (Part 3)] Wall thickness [Clause 2.3.2 of IS 8360 (part 2) and (Part 3)]	<ul style="list-style-type: none"> - Vernier caliper - Measuring Tape - Pi Tape or Circometer - Ball ended Micrometer - Measuring scale
2	Hydraulic proof test [Clause 5.1 of IS 8360 (Part 1)]	<ul style="list-style-type: none"> - Hydrostatic pressure testing apparatus with pressuring unit, timer and multiple outlets - End plugs

The above list is indicative only and may not be treated as exhaustive.

ANNEX C

Scheme of Inspection And Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipment.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – As per the requirements of IS 8360 (Part 1): 1977 and relevant part of IS 8360 (Part 2) and (Part 3).

4. CONTROL UNIT – All fittings of same type, size, pressure class and resin grade manufactured from same consignment of pipes in a maximum duration of 24 h shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of [Table 1](#) and the levels of control in column 3 of [Table 1](#), shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
2	Material	2 2.1	IS 8360 (Part 1) IS 8360 (Part 2 & Part 3)	S	One	From each lot received	No further testing is required if received with manufacturers test certificate or ISI marked.
3	Sizes of fittings	3.1	IS 8360 (Part 1)	-	Each fitting	-	-
4	Dimensions of fittings	4.1 & 4.2 2.1	IS 8360 (Part 1) IS 8360 (Part 2 & Part 3)	R	Five	Each Control Unit	-
5.1	Hydraulic proof test	5.1	IS 8360 (Part 1)	R	One	Each control unit	-
2.2.2	Laying length	2.2.2 & Table 1	IS 8360 (Part 2 & Part 3)	R	Five	Each Control Unit	-

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

ANNEX – D

Possible tests in a day

- (i) Dimensions of the fittings [Clause 4 of IS 8360 (Part 1)]
- (ii) Hydraulic proof test [Clause 5.1 of IS 8360 (Part 1)]
- (iii) Laying length [Clause 2.2.2 of IS 8360 (Part 2 & 3)]

ANNEX – E**Scope of the Licence**

Licence is granted to use Standard Mark as per IS 8360 (Part 1) : 1977 with the following scope:	
Name of the product	Fabricated high density polyethylene (HDPE) fittings for potable water supply
Type of fittings	90° Tees /90° Bends
Resin grade / pressure class	
Size and Lay length of fittings	