

PRODUCT MANUAL FOR FITTINGS FOR RIGID NON-METALLIC CONDUITS ACCORDING TO IS 3419:1988

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 3419:1988
	Title	:	Fittings for Rigid Non-Metallic Conduits
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	N.A
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	30 Nos.
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 :		
	“Licence is granted to use Standard Mark as per IS 3419:1988 with the following scope:		
	Name of the product	Fittings for Rigid Non-Metallic Conduits	
	Type	As per Cl. 6.2 of IS 3419:1988	
	Nominal Size		

ANNEX A

Grouping Guidelines

1. IS 3419:1988 covers the following types of fittings (Clause 6.2 of IS 3419:1988).
 - a) Slip Type Couplers
 - b) Socketed Type Couplers
 - c) Clamp Type Couplers
 - d) Normal Type Bends
 - e) Slip Type Coupling Bends
 - f) Normal Type Elbows
 - g) Normal Type Tees
 - h) Socketed Type Tees
 - i) Spout Type Circular Boxes.
2. The Firm shall declare the Type and Nominal Size of Fittings they intend to cover in the License.
3. For 1 (a) to 1 (h) above, fittings having the highest nominal size from each type shall be tested to cover all the sizes of the particular type of fitting tested.
4. For 1 (i) above, fittings having the highest nominal size from any one type of design shall be tested to cover all the sizes and design.
5. The Scope of License may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
6. During the operation of the License, BO shall ensure that all the varieties covered in the License are tested in rotation, to the extent possible.

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

Sl. No	Test Equipment	Tests Used in with Clause reference
1	Vernier Caliper, Micrometer	Cl. 9
2	Heating Cabinet with temperature controller, Ball Pressure Apparatus	Cl. 10, Cl. 14
3	Bunsen burner, Stop Watch	Cl. 11
4	Heating Cabinet, Water Bath, Weighing Balance	Cl. 12
5	Oil Bath, Vernier Calipers	Cl. 15
6	Impact Test Apparatus	Cl. 16
7	Insulation Resistance Tester, High Voltage Tester, Plugs of Insulating material, Sphenoidal metal objects, Resistance meter	Cl. 17

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 3419:1988.

4. CONTROL UNIT – All fittings of the same type and size manufactured in a day 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				
8	Visual Examination	8	IS 3419	R	Each fitting	—	—
9	Checking of Dimensions	9	IS 3419	R			
10	Resistance to Heat	10	IS 3419	R	One	Fittings of each type and size manufactured in a week	
11	Resistance to Burning	11	IS 3419	R			
17	Electrical Characteristics	17	IS 3419	R			
12	Moisture Absorption Test	12	IS 3419	R	As per Appendix B of IS 3419	Fittings of the each type and size manufactured in a month	
13	Resistance to chemical action	13	IS 3419	R			
14	Copper Test	14	IS 3419	R			
15	Resistance to Oil	15	IS 3419	R			
16	Resistance to Impact	16	IS 3419	R			

Note- 1: 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. Visual Examination
- ii. Checking of Dimensions
- iii. Resistance to Heat
- iv. Resistance to Burning
- v. Resistance to Impact
- vi. Electrical Characteristics