



**PRODUCT MANUAL FOR
SWING CHECK TYPE REFLUX (NON-RETURN) VALVES FOR
WATER WORKS PURPOSES – SINGLE DOOR PATTERN
ACCORDING TO IS 5312 (PART 1): 2004**

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 5312 (PART 1) : 2004
	Title	:	SWING CHECK TYPE REFLUX (NON-RETURN) VALVES FOR WATER WORKS PURPOSES – SINGLE DOOR PATTERN
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	Materials - Clause 5 & Table 1 of IS 5312 (Part 1) : 2004
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	1 Valve 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 :		
	(i) Manufacture (Clause 6)		
	(ii) Coating (Clause 7)		
	(iii) Hydrostatic body test (Clause 8.2)		
	(iv) Hydrostatic seat test (Clause 8.3)		
6.	Scope of the Licence : Please refer ANNEX – D		

ANNEX A

Grouping Guidelines

1. IS 5312 (Part 1) : 2004 covers Swing check type reflux (non-return) valves for water works purposes – Single door pattern, of the following classification:
 - a) Nominal pressure (PN) – 1.0 and 1.6 MPa
 - b) Nominal Size – 50 to 600 mm
 - c) Type –
 - i) Reflux valve with inclined seating and side by-pass arrangement
 - ii) Reflux valve with vertical seating and integral by-pass arrangement
 - iii) Reflux valve with vertical seating and side by-pass arrangement

2. For considering GoL/CSoL, nominal size of valves are grouped as follows:

	Group 1	Group 2	Group 3
Nominal Size	50 to 125	150 to 300	350to 600

3. Valve of any size from each size group for each nominal pressure and type shall be tested to cover valves of all sizes in that variety (size group, nominal pressure and type) tested. However, if valve of nominal pressure 1.6 MPa is tested, valve of nominal pressure 1.0 MPa may be covered in the scope of licence for the same size group and type tested.
4. The Firm shall declare the varieties of Valves 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 the varieties covered in the Licence 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*

S. No.	Tests used in with Clause Reference	Test Equipment
1	Manufacture, Dimensions of reflux valve and by-pass arrangement (Clause 6)	Vernier Caliper
		Steel Tape
		Steel Scale
		Angle Protector
		Radius Gauge
		Outside Caliper
		Outside Micrometer
2	Hydrostatic body test (Clause 8.2) Hydrostatic seat test (Clause 8.3)	Hydrostatic test Setup with Pressure gauge
		Blind Flanges for Hydrostatic Testing
		Stop Watch
		Hammer

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 5312 (Part 1): 2004

4. 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.

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

5. 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				
5	Materials	5	IS 5312 (Part 1)	S	1	Each consignment	#
6	Manufacture	6.1 to 6.13	IS 5312 (Part 1)	R	Each component	-	-
7	Coating	7.1 7.2	IS 5312 (Part 1)	-	Each valve	-	-
8	Testing						
8.2	Hydrostatic body test	8.2	IS 5312 (Part 1)	R	Each valve	-	-
8.3	Hydrostatic seat test	8.3	IS 5312 (Part 1)	R	Each valve	-	-

No further testing is required if accompanied with the Test Certificate or ISI marked.

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**Scope of the Licence**

Licence is granted to use Standard Mark as per IS 5312 (Part 1) : 2004 with the following scope:	
Name of the product	SWING CHECK TYPE REFLUX (NON-RETURN) VALVES FOR WATER WORKS PURPOSES – SINGLE DOOR PATTERN
Type	<ul style="list-style-type: none"> a) Reflux valve with inclined seating and side by-pass arrangement b) Reflux valve with vertical seating and integral by-pass arrangement c) Reflux valve with vertical seating and side by-pass arrangement
Nominal pressure (PN)	1.0 MPa /1.6 MPa
Nominal size (mm)	