



**PRODUCT MANUAL FOR
WATER METERS (BULK TYPE)
ACCORDING TO IS 2373: 1981**

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 2373: 1981
	Title	:	WATER METERS (BULK TYPE)
	No. of Amendments	:	3
2.	Sampling Guidelines:		
a)	Raw material	:	As per clause 4 of IS 2373: 1981
b)	Grouping guidelines	:	Water Meter of each Type, Size and Dial Type shall be tested to cover that particular variety in the Scope of Licence.
c)	Sample Size	:	(a) For 50 mm size – 2 Nos (b) For more than 50 mm size – 1 No
3.	List of Test Equipment	:	Please refer ANNEX- A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX - B
5.	Possible tests in a day:		
	(i)	Manufacturing and dimensions (Clause 4)	
	(ii)	Hydrostatic test (Clause 5.2)	
	(iii)	Nominal capacity ratings for water meters (Clause 5.3.1)	
	(iv)	Recommended capacity of water meter (Clause 5.3.2)	
	(v)	Minimum starting flow (Clause 5.4)	
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 2373: 1981 with the following scope:		
	Name of the product	Water Meter (Bulk Type)	
	Nominal Size		
	Type	Vane wheel (Impeller type)/Helical type	
	Type of dial	Dry-dial type /Wet-dial type	
	Frost protection device	Provided (if applicable)	

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	Manufacturing and dimensions (Clause 4)	a) Vernier caliper b) Steel scale
2	Temperature suitability (Clause 5.1.1)	a) Temperature controlled water bath and temperature indicator b) Test bench as per IS 6784 with measuring tank c) Testing arrangement as per SI No 4
3	Hydrostatic test (Clause 5.2)	a) Hydrostatic pressure testing arrangement with end plugs, pressure gauge and stop watch for hydrostatic testing
4	Capacity ratings for water meters (Clause 5.3) Minimum starting flow (Clause 5.4) Metering accuracy (Clause 5.5)	a) Testing arrangement as per clause B-1.1 and Fig 3 of IS 2373: 2000 for determination of head loss in the water meter. b) Testing arrangement for measurement of flow rate from water meter c) Calibrated water tank for volumetric measurement of water d) Measuring jars

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 2373: 1981

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				
4	Materials	4.2, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10	IS 2373	S	One	Each consignment	Further testing is not required if consignment received with test certificate or ISI marked.
4	Manufacture and dimensions of various components	4.2.2, 4.3, 4.5, 4.6, 4.7, 4.8, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, Table 1, Table 2	IS 2373	R	Each meter		-
5	Performance requirements						
8.1.1	Production routine test						
5.2	Hydrostatic test	5.2	IS 2373	R	Each meter	-	-
5.3.2	Recommended capacity for intermediate flows	5.3.2, 5.3.3, Appendix -B	IS 2373	R	Each meter	-	-
5.4	Minimum Starting flow	5.4, Appendix -B	IS 2373	R	Each meter	-	-
5.5	Metering accuracy	5.5, Appendix -B	IS 2373	R	Each meter	-	-

8.1.2	Type test						
8.4.2	Flow test						
a)	Loss of head at nominal capacity and recommended capacity at intermediate flows	5.3.1, 5.3.2, 5.3.3, 8.4, 8.4.2, Appendix -B	IS 2373	R	50 mm – 2 meters > 50 mm – 1 meter	Once in six months for each type	In case of failure, marking on that type of water meter shall be stopped and necessary corrective actions may be taken. Marking shall be resumed after passing of improved samples.
b)	Minimum starting flow	5.4, 8.4, 8.4.2, Appendix -B	IS 2373	R	50 mm – 2 meters > 50 mm – 1 meter	Once in six months for each type	
c)	Metering accuracy	5.5, 8.4, 8.4.2, Appendix -B	IS 2373	R	50 mm – 2 meters > 50 mm – 1 meter	Once in six months for each type	
5.1.1	Temperature suitability test	5.1.1, 8.4.2, Appendix -B	IS 2373	R	One	Once in six months for each type	

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

Note-2: The control unit and levels of control as decided by the Bureau are obligatory, to which the licensee shall comply with.