PRODUCT MANUAL FOR FORGED BRASS GATE, GLOBE AND CHECK VALVES FOR WATER WORKS PURPOSES ACCORDING TO IS 13114: 1991

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 13114 : 1991
	Title	:	Forged Brass Gate, Globe and Check Valves for Water Works Purposes.
	No. of Amendments	:	Nil
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	As per Clause 5.1 and Table 1 of IS 13114 : 1991
b)	**Grouping guidelines**	:	Please refer ANNEX – A
c)	**Sample Size**	:	For physical tests: 1 valve For chemical tests: 1 valve or 100 gm drillings (approx.)
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) Dimensions and tolerances (Clause 7) ii) Design and manufacture (Clause 8) iii) Hydrostatic Testing (Clause 9.3)		
6.	**Scope of the Licence :**		
	"Licence is granted to use Standard Mark as per IS 13114 : 1991 with the following scope:		
	Name of the product		Forged Brass Gate, Globe and Check Valves for Water Works Purposes
	Type		
	Nominal sizes (mm)		

ANNEX A

Grouping Guidelines

1. IS 13114: 1991 covers Forged Brass Gate, Globe and Check Valves for Waterworks Purposes which are categorized as given below:

Sl No	Type	Nominal Sizes (mm)	
		Group- I	**Group- II**
1	Gate valves	8, 10, 15, 20, 25, 32,	40, 50
2	Globe valves	8, 10, 15, 20, 25, 32,	40, 50
3	Check valves		
	a) Swing type	15, 20, 25	-
	Lift type		
	i) Straight (or Horizontal)	8, 10, 15, 20, 25, 32,	40, 50
	ii) Vertical	8, 10, 15, 20, 25, 32,	40, 50

2. Considering the above, the following grouping guidelines is developed for GoL/CSoL:

- One valve of each type/sub-type(s) from each group, preferably highest size, shall be tested for all requirements to cover valves of all sizes covered in that group for the particular type/sub-type(s) tested.

3. The Firm shall declare the varieties of Valves they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.

4. During the operation of the Licence, BO shall ensure that all the types and sizes covered in the Licence are tested in rotation, to the extent possible.

ANNX-B

List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Dimensions and tolerances (Clause 7) and Design and manufacture (Clause 8)	- Vernier caliper - Micrometer - Thread ring Gauges - Thread plug gauges - Go-No Go gauges - Plug gauges - Snap gauges - Protractor - Calliper- Inside and outside - Templates for various dimension checking - Depth gauge etc.
2	Hydrostatic Tests (shell test, Seat and Seatback Test) (Clause 9.3)	- Hydrostatic pressure test equipment with end plugs, pressure gauge etc - Stop watch

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 13114: 1991.

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 Method**			**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**				
5, 9.2, Table 1	**Materials**						
i)	Body, bonnet, cover, stuffing box, disc, wedge and hinge:	5.1, 9.2, Table 1	IS 13114	S	One	Each cast	No further testing is required, if received with test certificate or ISI marked.
	Forged brass		IS 6912				
ii)	Gland, gland nut, hall, stem, stem nut, hinge pin:	5.1, 9.2, Table 1	IS 13114	S	One	Each cast	No further testing is required, if received with test certificate or ISI marked.
	Forged brass or free cutting brass		IS 6912 IS 319				
iii)	Hand wheel:	5.1, 9.2, Table 1	IS 13114	S	One	Each cast	@@ No further testing is required, if received with test certificate or ISI marked.
	Cast iron		IS 210				
iv)	Gland packing:	5.1, 9.2, Table 1	IS 13114	S	One	Each cast	No further testing is required, if received with test certificate or ISI marked.
	Hemp and Jute		IS 5414				
	Asbestos		IS 4687				
	Any other equally efficient packing material suitable for cold water						

v)	Spring (In case check valve is spring loaded): Phosphor bronze wire	5.1, 9.2, Table 1	IS 13114 IS 7608	S	One	Each cast	No further testing is required, if received with test certificate or ISI marked.
7	Dimensions and Tolerances	7.1, 7.2, Table 2, Table 3	IS 13114	R	Each valve	-	Each valve may be checked with templates and gauges and random check done for actual dimensions.
8	Design and Manufacture	8.1 to 8.8, Table-2, Table 4	IS: 13114	R	Each valve	-	--
9.3	Hydrostatic Testing a) Shell test b) Sear and Backseat test	9.3	IS: 13114	R	Each valve	-	--

@@ Handwheel may also be made either in steel, aluminium alloy, zinc alloy and non-metallic materials

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.