



उत्पाद मैनुअल
आई एस 8931:2021 के अनुसार
जल सेवाओं के लिए ताम्बा मिश्रा धातु के एकल नल, संयोजित नल सम्मुख,
स्टॉप वाल्व एवं एकल लीवर मिक्सर के लिए

दस्तावेज संख्या – पी एम/ आई एस 8931/2/जून 2022

भारतीय मानक ब्यूरो की स्कीम-I (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज का उपयोग किया जा सकता है।

**PRODUCT MANUAL FOR
COPPER ALLOY SINGLE TAPS, COMBINATION TAP
ASSEMBLIES, STOP VALVES AND SINGLE LEVER MIXERS FOR
WATER SERVICES ACCORDING TO IS 8931: 2021**

Document No.- PM/ IS 8931/2/June 2022

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.

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, ९, बहादुर शाह ज़फ़र मार्ग
Manak Bhawan, 9, Bahadur Shah Zafar Marg
नई दिल्ली- ११०००२
New Delhi – 110002



**PRODUCT MANUAL FOR
COPPER ALLOY SINGLE TAPS, COMBINATION TAP
ASSEMBLIES, STOP VALVES AND SINGLE LEVER MIXERS FOR
WATER SERVICES ACCORDING TO IS 8931: 2021**

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 8931 : 2021
	Title	:	Copper Alloy Single Taps, Combination Tap Assemblies, Stop Valves and Single Lever Mixers for Water Services
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	Raw material – Clause 5 and Table 1 of IS 8931 : 2021
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	2 Nos for Mechanical test and 5 nos – 5 cm x 5 cm (plated material pieces) for chemical test
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		

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar
Marg, New Delhi – 110002

ANNEX A**Grouping Guidelines**

1. IS 8931: 2021 covers Single Taps, Combination Tap Assembly, Stop Valves & Single Lever Mixers for water services which are classified based on type and nominal size as given below:

- a) **Single Taps**

- (i) Pillar Tap – 15 mm
 - (ii) Bib Tap – 15 mm

- b) **Combination Tap Assembly**

- (i) Wall Mounted Combination Tap Assembly – 15 mm
 - (ii) Pillar Mounted Combination Tap Assembly – 15 mm

- c) **Stop Valves**

- (i) Stop Valve – 15 and 20 mm
 - (ii) Angle Stop Valve – 15 and 20 mm

- d) **Single Lever Mixer**

- (i) Single Lever Concealed Bath and Shower Mixer With Diverter – 15 mm
 - (ii) Single Lever Pillar Mounted Sink Mixer With Swivel Spout – 15 mm
 - (iii) Single Lever Pillar Mounted Basin Mixer – 15 mm
 - (iv) Single Lever Wall Mounted Sink Mixer With Swivel Spout – 15 mm
 - (v) Single Lever Bath and Shower Mixer – 15 mm

2. IS 8931: 2021 also covers provision for accessible taps and additional requirements for water efficiency which are given below:

- a) **Accessible Taps**

Accessible taps should be single lever mixer or combination tap assembly with lever handle

- b) ***Additional requirements for Water Efficiency:***

In case a manufacturer opts for water efficiency ratings and labelling of taps, stop valves, combination tap assemblies, single lever mixer, accessible taps, the requirements given in IS 17650 (Part 2):2021 shall be complied with. Three ratings have been specified in the Standard, i.e. 1 star, 2 stars and 3 stars.

3. Considering the above, grouping guidelines as given below shall be followed for GoL/CSoL :

- a) Sample of any size for each type (Single Taps/ Combination Tap Assembly/Stop Valves/ Single Lever Mixer) shall be tested to cover all sizes of that type.

- b) In case of Combination tap assembly, each sub-type (Pillar mounted combination/ Wall mounted combination) shall be tested separately.
 - c) For single lever mixer or combination tap assembly with lever handle which are accessible taps, the additional requirements given in clause 8 shall be tested to cover the same.
 - d) Each water efficiency rating shall be tested for all the requirements given in IS 17650 (Part 2) to cover that particular water efficiency rating in the scope of licence.
4. The Firm shall declare the Types and Nominal Sizes they intend to cover 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, workmanship and construction (Clause 6)	- Thread ring gauges - Vernier calliper - Bore gauges
2	Dimensions (Clause 7)	- Micrometre - Vernier calliper - Thread ring gauges - Bore gauges - Thread plug gauges
3	Additional requirements for accessible taps (Clause 8)	- Force meter or similar devices - Thermometer
3	Finish (Clause 9)	- Coat meter or testing arrangement for measuring thickness as per IS 3203 - Salt spray cabinet with standard solution as per IS 5528
4	Water tightness characteristic (Clause 10.2)	- Hydrostatic test apparatus with pressure gauge or - Pneumatic pressure test arrangement - Flow rate regulator - Stop watch
5	Pressure resistance characteristic (Clause 10.3)	
6	Hydraulic characteristic (Flow rate) (Clause 10.4) (it may also be used for water efficiency rating test)	
7	Mechanical strength characteristic (Clause 10.5)	- Torque wrench - Stop watch
8	Mechanical Endurance test (Clause 10.6)	- Hydrostatic test apparatus with pressure gauge or - Pneumatic pressure test arrangement - Flow rate regulator - Stop watch - Automatic test rig - Supply circuit with a pump - Device to actuate operating mechanism of tap - Automatic machine as per Clause E-2.2.3 - Automatic machine as per Clause E-3.2.2.1 - Mechanism as per Clause E-3.2.2.2
9	Additional Requirements for Accessible Taps (Clause 8) : (Flow Rate test)	- Test Equipment for Flow Rate test [Fig 1 of IS 17650 (Part 2):2018]

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 8931:2021.

3.1 For the additional water efficiency rating label requirement, the Guidelines on Labelling and Marking Requirements for Water Efficiency Rating of Plumbing Products – Sanitaryware & Sanitary Fittings as per IS 17650 (Part 1):2021 & IS 17650 (Part 2):2021 as mentioned at Annex-F shall be complied with.

4. CONTROL UNIT – All production of same type, size and shape manufactured from samecast/forged material in one 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				
5	Material	5 & 9	IS 8931	S	1	Each consignment received	#
6	Manufacture, workmanship and construction						
	General, casting, forging, plastic moulding & Machining	6.1 to 6.5	IS 8931	R	Eight pieces	Each control unit	Samples shall be selected at random to cover entire production evenly as far as possible. In case failure of sample in any requirement, double the initial sample shall selected and tested, control unit shall be rejected in case of failure of retested samples.
	Screw threads	6.6	IS 8931	R			
	Waterway	6.7	IS 8931	R			
	Flow straightening and aerating device (As per manufacturerdeclaration)	6.8	IS 8931	R			
	Body seat	6.9	IS 8931	R			
	Bonnet assembly	6.10	IS 8931	R			
	Gland packing	6.11	IS 8931	R			
	Flanges	6.12	IS 8931	R			
	Knob	6.13	IS 8931	R			
7.1	Dimensions of Single Pillar and Bib Tap, Combination Tap Assembly, Stop Valve and Angle Stop Valve						
7.1.1	Minimum Thickness	7.1.1	IS 8931	R	Eight pieces	Each control unit	Samples shall be selected at random to cover entire production evenly as far as possible. In case failure of sample in any requirement, double the initial sample shall selected and tested, control unit shall be rejected
7.1.2	Body	7.1.2.1 to 7.1.2.6	IS 8931	R			
7.1.3	Bonnet assembly	7.1.3.1 to 7.1.3.2	IS 8931	R			
7.1.3.3	Washer plate	7.1.3.3.1 to 7.1.3.3.4	IS 8931	R			

7.1.3.4	Seat washer	7.1.3.4	IS 8931	R			in case of failure of retested samples.
7.2	Dimensions of Single Lever Mixer						
7.2.1	concealed diverter for bath and shower mixer	Table 10 read with Fig. 9	IS 8931	R	Eight pieces	Each control unit	Samples shall be selected at random to cover entire production evenly as far as possible. In case failure of sample in any requirement, double the initial sample shall selected and tested, control unit shall be rejected in case of failure of retested samples.
	single lever sink mixer with swivel spout	Table 11 read with Fig. 10	IS 8931	R			
	single lever pillar mounted basin mixer	Table 12 read with Fig. 11	IS 8931	R			
	wall mounted single lever sink mixer with swivel spout	Table 13 read with Fig. 12	IS 8931	R			
	single lever bath and shower mixer	Table 14 read with Fig. 13	IS 8931	R			
7.2.2	Diameter of Single Lever Cartridge	7.2.2	IS 8931	R			
7.2.3	Nuts	7.2.3	IS 8931	R			
8	Additional Requirements for Accessible Taps						
8.2	Lever handle	8.2	IS 8931	R	Eight pieces	Each control unit	Samples shall be selected at random to cover entire production evenly as far as possible. In case failure of sample in any requirement, double the initial sample shall selected and tested, control unit shall be rejected in case of failure of retested samples.
8.3	Information on taps	8.	IS 8931	R			
8.4	Thermostat installation, Hot & cold water taps identification	8.4	IS 8931	R			

9	Finish						
9.1	General	9.1 & 9.1.1	IS 8931	R	Eight pieces	Each control unit	Samples shall be selected at random to cover entire production evenly as far as possible. In case failure of sample in any requirement, double the initial sample shall selected and tested, control unit shall be rejected in case of failure of retested samples.
9.2	Nickel chromium plating on taps & valves, knobs & knobs components of plastic/zinc base alloy	9.2	IS 8931	R	One sample at the beginning, intermediate and end of plating cyclefor each component shall be tested for requirement specified. In case of failure, double the number of samples for that component shall be tested and lot shall be accepted only if the retested samplespass.		
10	Performance test						
10.2	Water tightness characteristic	10.2.1 to 10.2.4 Annex- B	IS 8931	R	Eight pieces	Each control unit	Samples shall be selected at random to cover entire production evenly as far as possible. In case failure of sample in any requirement, double the initial sample shall selected and tested, control unit shall be rejected in case of failure of retested samples.
10.3	Pressure resistance characteristic	10.3.1 to 10.3.3 Annex-C	IS 8931	R			
10.4	Hydraulic characteristic (Flow rate)	10.4.1 to 10.4.4 Annex-D	IS 8931	R			
11	Additional Requirements for Water Efficiency (Flow rate)	11	IS 8931 IS 17650 (Pt 2)	R			
10.5	Mechanical strength characteristic	10.5.1 to 10.5.4	IS 8931	R			
10.6	Mechanical Endurance Characteristics	10.6.1 to 10.6.2	IS 8931	S	One	Once in three months	-

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

Possible tests in a day

- (i) Manufacture, workmanship and construction (Clause 6)
- (ii) Dimensions (Clause 7)
- (iii) Additional Requirements for Accessible Taps (Clause 8)
- (iv) Finish (Clause 9)
- (v) Water tightness characteristic (Clause 10.2)
- (vi) Pressure resistance characteristic (Clause 10.3)
- (vii) Hydraulic characteristic (Flow rate) (Clause 10.4)
- (viii) Mechanical strength characteristic (Clause 10.5)
- (ix) Additional Requirements for Water Efficiency (Flow rate to be tested only) (Clause 11)

ANNEX – E**Scope of the Licence**

Licence is granted to use Standard Mark as per IS 8931 : 2021 with the following scope:	
Name of the product	Copper Alloy Single Taps, Combination Tap Assemblies, Stop Valves and Single Lever Mixers for Water Services
Type and nominal size	Pillar Tap – 15 mm Bib Tap – 15 mm Pillar mounting Combination Tap Assembly – 15 mm Wall mounting Combination Tap Assembly – 15 mm Stop Valves – 15 and 20 mm Angle Stop Valve – 15 and 20 mm Single Lever Concealed Bath and Shower Mixer With Diverter – 15 mm Single Lever Pillar Mounted Sink Mixer With Swivel Spout – 15 mm Single Lever Pillar Mounted Basin Mixer – 15 mm Single Lever Wall Mounted Sink Mixer With Swivel Spout – 15 mm Single Lever Bath and Shower Mixer – 15 mm Accessible Taps (Type & size of single lever mixer or combination tap assembly)
Water Efficiency Rating (additional requirement)	1 Star/ 2 Stars/ 3 Stars

ANNEX-F

Ref: CMD-III/CED-Plumbing Products

Subject: Labelling & Marking Requirements for Water Efficiency Rating of Plumbing Products – Sanitaryware & Sanitary Fittings as per IS 17650 (Part 1):2021 & IS 17650 (Part 2):2021

1. This has reference to the conformity assessment of Plumbing products - Sanitaryware & Sanitary Fittings. In this regard, two new Indian Standards have been published for water efficiency requirements of plumbing products:

a) **IS 17650 (Part 1) : 2021** Water Efficient Plumbing Products — Requirements : Part 1 Sanitaryware

b) **IS 17650 (Part 2) : 2021** Water Efficient Plumbing Products — Requirements : Part 2 Sanitary Fittings

2. The above two new standards on water efficient plumbing products cover additional requirements to be met by respective plumbing products to qualify for water efficiency rating based on water consumption; the criteria for being rated as 1 Star, 2 Stars or 3 Stars based on water consumption; and labelling requirements. Further, as per the above Indian Standards, in order to qualify for water efficiency rating, the products must conform to the respective product Standards, i.e. Sanitaryware-IS 2556 (Part 6), IS 2556 (Part 8), IS 774, IS 7231 and Sanitary Fittings- IS 8931. These Standards specify water efficiency as an additional requirement which is to be complied as per IS 17650 (Part 1):2021 or IS 17650 (Part 2):2021, as the case may be.

3. In case a manufacturer opts for the additional requirement for water efficiency, then water efficiency rating label of plumbing products as given in IS 17650 (Part 1):2021 or IS 17650 (Part 2):2021 is required, in addition to the marking requirements laid down in the product Standards. Licence shall be granted under the respective plumbing Product Standards and in case a manufacturer opts for the additional requirement for water efficiency, the same shall be included in the scope of licence.

4. For water efficient plumbing products, the water efficiency rating label shall be pasted with water proof sticker having water rating label along with the BIS Standard Mark for the product (for which the licence is granted) on each appliance/ sanitaryware/ sanitary fittings. The carton containing the product shall also be pasted with a sticker as above.

5. IS 17650 (Part 1):2021 or IS 17650 (Part 2):2021 have depicted the marking requirements of the label which is only typical in nature. Based on this, labelling and marking requirements of water efficiency rating labels for water efficient sanitaryware and sanitary fittings have been designed which are enclosed at Annex-F(1). Dimensions and color scheme of water efficiency rating label are enclosed at Annex-F(2).

6. The label shall be reproduced in full. The label shall be faithfully reproduced, and all text shall be readable with normal or corrected vision. The dimensions of the label can be proportionately reduced or enlarged with respect to the size of the plumbing product, but should be prominently visible. The label shall be prominent and visible when the product is profiled, displayed, promoted, marketed, sold or supplied at any point in the supply chain.

7. It may be noted that IS 17650 (Part 1):2021 and IS 17650 (Part 2):2021 as standalone Standards are not certifiable. Licence shall not be granted to a manufacturer in standalone as per IS 17650 (Part 1):2021 or IS 17650 (Part 2):2021 only.

ANNEX-F (1)**A) WATER EFFICIENT SANITARYWARE (Water Closet/ Squatting Pan/ Flushing Cistern/ Flush Valve)****(i) 3 STARS –**

			3 STARS	IS XXXXX  CM/L-XXXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 1)				
Name of Manufacturer: Model No: Product Name: Full Flush:_ litres/ flush Reduced Flush:_ litres/ flush				

(ii) 2 STARS –

			2 STARS	IS XXXXX  CM/L-XXXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 1)				
Name of Manufacturer: Model No: Product Name: Full Flush:_ litres/ flush Reduced Flush:_ litres/ flush				

(iii) 1 STAR –

			1 STAR	IS XXXXX  CML-XXXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 1)				
Name of Manufacturer: Model No: Product Name: Full Flush: _ litres/ flush Reduced Flush: _ litres/ flush				

B) WATER EFFICIENT SANITARYWARE (URINALS)

(i) 3 STARS –

			3 STARS	IS XXXXX  CML-XXXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 1)				
Name of Manufacturer: Model No: Product Name: Flush Volume of Urinals : _ litres/ flush				

(ii) 2 STARS –

			2 STARS	IS XXXXX  CM/L-XXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 1)				
Name of Manufacturer: Model No: Product Name: Flush Volume of Urinals :_ litres/ flush				

(iii) 1 STAR –

			1 STAR	IS XXXXX  CM/L-XXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 1)				
Name of Manufacturer: Model No: Product Name: Flush Volume of Urinals :_ litres/ flush				

C) WATER EFFICIENT SANITARY FITTINGS

(i) 3 STARS –

			3 STARS	IS XXXXX  CM/L-XXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 2)				
Name of Manufacturer: Model No: Product Name: Pressure Range for functional requirement Flow Rate : _ litres/ min, or litres/ use				

(ii) 2 STARS –

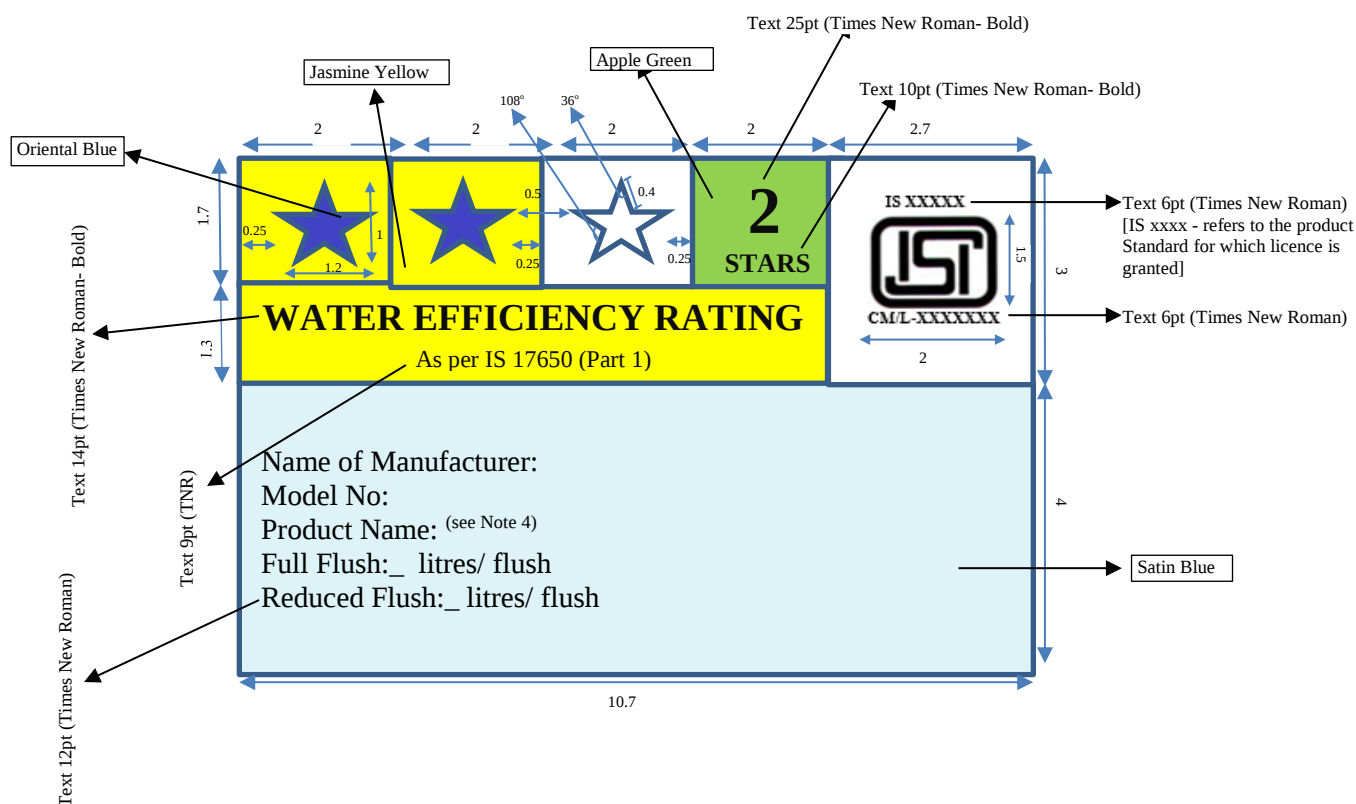
			2 STARS	IS XXXXX  CM/L-XXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 2)				
Name of Manufacturer: Model No: Product Name: Pressure Range for functional requirement Flow Rate : _ litres/ min, or litres/ use				

(iii) 1 STAR –

			1 STAR	IS XXXXX  CM/L-XXXXXXX
WATER EFFICIENCY RATING As per IS 17650 (Part 2)				
Name of Manufacturer: Model No: Product Name: Pressure Range for functional requirement Flow Rate : _ litres/ min, or litres/ use				

ANNEX-F (2)

DIMENSIONS AND COLOR SCHEME OF WATER EFFICIENCY RATING LABEL



- Note: (1) All dimensions are in cm & all letters are in black colour
 (2) The font sizes are typical in nature.
 (3) The dimensions of the label can be proportionately reduced or enlarged with respect to the size of the plumbing product, but should be prominently visible.
 (4) Indicate the exact name of the products such as Washdown water closet, Close-coupled waster closet, One-piece water closet, One-piece syphonic water closet, Universal water closet, Washdown Wall Mounted water closet, Squatting pan, Integrated squatting pan, Plastic flushing cistern, Ceramic flushing cistern and Flush valves

Colour Scheme for Logo:

- a) Satin Blue - Shade No 177 of IS 5
- b) Apple Green - Shade No 281 of IS 5
- c) Jasmine Yellow – Shade No 397 of IS 5
- d) Oriental Blue - Shade No 174 of IS 5