उत्पाद मानुयल

BATTERY HYDROMETERS-PORTABLE SYRINGE TYPE FOR LEAD-ACID BATTERIES
IS 12950 : 2023 के अनुसार

PRODUCT MANUAL FOR
BATTERY HYDROMETERS-PORTABLE SYRINGE TYPE FOR LEAD-ACID BATTERIES
ACCORDING TO IS 12950:2023

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में अभ्यास और पारदर्शिता के संचालन में पारदर्शिता सुनिश्चित करने के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

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.	उत्पाद **Product**	:	IS 12950 : 2023
	शीर्षक **Title**	:	Battery Hydrometers-Portable Syringe Type for Lead-Acid Batteries
	संशोधनों की संख्या **No.of amendments**	:	NIL
2.	नमूना दिशानिर्देश **Sampling Guidelines**		
a)	कच्चामाल **Raw material**	:	i) Barrel shall be made from clear transparent and annealed glass. ii) Material for hydrometer float shall conform to requirements of Cl 4.6.4.1. iii) Loading material shall conform to requirements of Cl 4.6.4.2.
b)	समूहीकरण दिशानिर्देश **Grouping Guidelines**	:	Not applicable
c)	नमूने का आकार **Sample Size**	:	3 Nos.
3.	परीक्षण उपकरणो की सूची **List of Test Equipment**	:	कृपया Annex-ए देखें Please see Annex – A
4.	निरीक्षण और परीक्षण की स्कीम **Scheme of Inspection and Testing**	:	कृपया Annex-B देखें Please see Annex – B

5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day:**		
	All tests are possible (on conditioned samples as applicable)		
6.	**लाइसेन्स का कायिक्षेत्र/Scope of the Licence**:		
	"Licence is granted to use Standard Mark as per 12950: 2023 with the following scope:		
	Name of the product	Battery Hydrometers-Portable Syringe Type for Lead-Acid Batteries	

BUREAU OF INDIAN STANDARDS
ManakBhawan, 9, Bahadur Shah ZafarMarg,
New Delhi – 110002

ANNEX – A
List of test equipment

Sr. No.	Tests used in with Clause Reference	Test equipment
1	General Requirements, Bulb, Plug, Nozzle, Barrel, Cl 4.1-4.5	arrangement for measurement of hydrometer angle, surface with a slope of 15 degrees, scale, arrangement to measure air tight grip, vernier calliper, micrometer
2	Hydrometer floats, a) Temperature of calibration, Cl 4.6.1 b) Loading Material, Cl 4.6.4.2 c) Workmanship & Finish, Cl 4.6.6 d) Scale, Cl 4.6.724 hr conditioning e) Graduation lines, Cl 4.6.8	thermometer, oven, stop watch, arrangement for measurement of angle of float, electrolyte having a density within the range of the scale oven stop watch vernier calliper, magnifying glass, scale
3	Dimensions, Cl 4.7, Table 1	scale, micrometer, vernier calliper
4	Accuracy of float , Cl 4.8.1, Annex A	standard hydrometer of an appropriate range complying with IS 3104 (Part 1) : 1982, series M-100 high surface tension category, electrolyte solution of appropriate density, Overflow Vessel , thermometer, water bath capable of maintaining a temperature of 27 °C ± 1 °C,
5	Performance test of Elastomeric Components (Bulb and Nozzle), Cl 4.8.2.1, Annex B	stop watch, weighing balance, beaker, distilled water, arrangement for keeping hydrometer at an angle of 45 degrees.
6	Suitability Test of Elastomeric Components (Bulb and Nozzle), Cl 4.8.2.2	diluted sulphuric acid of density 1.5 g/cm3, arrangement for maintaining temperature at 27 °C ± 2 °C,
7	Resistance of Barrel to Thermal Shock, Cl 4.8.3, Annex C	stop watch, water bath maintain temperature at 50 °C ± 1 °C and 0 °C ± 1 °C, respectively,
8	Resistance to Mechanical Shock, Cl 4.8.4, Annex D	horizontal concrete surface, drop height of 700 mm ± 25 mm,

The above list is indicative only and may not be treated as exhaustive

ANNEX B
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 and implement a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. PACKING AND MARKING – The Standard Mark as given in the Schedule of the license shall be legibly and indelibly marked on each Battery Hydrometers, provided always that Battery Hydrometers to which this mark is thus applied conforms to every requirement of the specification

3.1 Packing and Marking shall be done as per the provisions of the Indian Standard.

3.2 In addition, the following shall be incorporated on the product or an accompanying label or package:

a. BIS Licence Number CM/L— ; and
b. BIS website details i.e. — “For details of BIS certification please visit www.bis.gov.in”

4. CONTROL UNIT - Lead-Acid Batteries of same size manufactured with same raw 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 Standards 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 (Levels of Control)
(Para 5 of Scheme of Inspection and Testing)

(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**				
4.1	General Requirements		IS 12950	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.2	Bulb		IS 12950				
4.3	Plug		IS 12950				
4.4	Nozzle		IS 12950				
4.5	Barrel		IS 12950		Firm to have adequate in-process controls to check compliance of dimensions and visual requirements of barrel as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity Raw material to be accompanied with Test Certificate of supplier for high grade annealed glass.		
4.6	Hydrometer floats						
4.6.1	Temperature of calibration		IS 12950	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.6.2	Range of Scale		IS 12950				
4.6.3	Surface tension		IS 12950				
4.6.4	Materials						
4.6.4.1	Float		IS 12950	R	Firm to have adequate in-process controls to check compliance of float to visual requirements as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity Raw material to be accompanied with Test Certificate of supplier for coefficient of cubical thermal expansion of glass		
4.6.4.2	Loading Material		IS 12950	R	one	Each Control Unit	
4.6.5	Pattern		IS 12950	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.6.6	Workmanship & Finish		IS 12950	R			

4.6.7	Scale		IS 12950	R	one	Each Control Unit	
4.6.8	Graduation lines			R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.7 Table 1	Dimensions		IS 12950	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.8	Performance requirements						
4.8.1	Accuracy of float	Annex A	IS 12950	R	Each Piece		
4.8.2	Elastomeric Components (Bulb and Nozzle)						
4.8.2.1	Performance test	Annex B	IS 12950	R	one	Each Control Unit	
4.8.2.2	Suitability Test		IS 12950	R	one	Each Control Unit	
4.8.3	Resistance of Barrel to Thermal Shock	Annex C	IS 12950	R	one	Each Control Unit	
4.8.4	Resistance to Mechanical Shock	Annex D	IS 12950	R	one	Each Control Unit	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. 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.