उत्पाद मैन्युअल
आई एस 2082 : 2018 के अनुसार
स्थिर भण्डारण प्रकार बिजली पानी के हीटरों की विशिष्टि (पांचवां पुनरीक्षण)के लिए
दस्तावेज़ संख्या – पीएम/आईएस 2082/6/ सितम्बर 2024

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना-I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता 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 प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

PRODUCT MANUAL FOR
STATIONARY STORAGE TYPE ELECTRIC WATER HEATERS - SPECIFICATION (FIFTH REVISION) ACCORDING TO IS 2082 : 2018
Document No - PM/IS 2082/6/September 2024

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification underScheme-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.

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

उत्पाद मैन्युअल
स्थिर भण्डारण प्रकार बिजली पानी के हीटरों की विशिष्टि (पांचवां पुनरीक्षण)
आई एस 2082 : 2018 के अनुसार

PRODUCT MANUAL
STATIONARY STORAGE TYPE ELECTRIC WATER HEATERS - SPECIFICATION (FIFTH REVISION)
ACCORDINGTO IS 2082 : 2018

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता 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 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 uniformity 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.

1.	**मानक संख्या** **IS No.**	:	IS 2082 : 2018
	शीर्षक **Title**	:	Stationary Storage Type Electric Water Heaters
	संशोधनों की संख्या **No. of amendments**	:	1
2.	**नमूना दिशानिर्देश** **Sampling Guidelines:**		
a)	**कच्चा माल** **Raw material**	:	• Components as per Cl. 24 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21
b)	**समूहीकरण दिशानिर्देश** **Grouping Guidelines**	:	Please refer ANNEX – A
c)	**नमूने का परिमाण**	:	2 numbers

	Sample Quantity		
3.	**परीक्षण उपकरणों की सूची** **List of Test Equipment**	:	Please refer ANNEX – B
4.	**निरीक्षण और परीक्षण की स्कीम** **Scheme of Inspection and Testing**	:	Please refer ANNEX – C
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day:**	:	Please refer ANNEX-D
6.	**लाइसेंस का दायरा /Scope of the Licence**	:	As per below table
	Licence is granted to use Standard Mark as per IS 2082 : 2018 with the following scope:		
	Name of the Product	Stationary Storage Type Electric Water Heaters	
	Model No.		
	Class	Class of Appliance I/II/III	
	Type	Closed / Open-Outlet/ Cistern-fed/ Cistern-type/Low-pressure/ Heat Exchange	
	Grade	Pollution Degree ____, Material Group_____ declarations	
	Material of Inner Tank	Stainless Steel/ Copper Tank/ Vitreous Enamelled Tank/ any other material as declared by the manufacturer	
	Rating	____ W, ____ V, ____ Hz, _____Phase, _____ Pa	
	Capacity (in L)	As declared by the manufacturer	
	Degree of protection	_____	

NOTE:

The requirements of 'Stationary Storage Type Electric Water Heaters' as per IS 302 (Part 2/ Sec 21) : 2024/ IEC 60335-2-21 : 2022 are deemed complied if the product meets to the requirements of IS 2082 : 2018 under BIS certification licence.

ANNEX – A

समूहीकरण दिशानिर्देश
Grouping Guidelines

1) Manufacturer shall declare parameters indicated in the scope of the licence of Stationary Storage Type Electric Water Heaters produced by them with a model number.

2) For grant of licnce/ change in scope of licence, each model of Stationary Storage Type Electric Water Heaters to be tested. Change in aesthetics, i.e colour, visual design etc may not be treated as different model.

3) The Firm shall declare the varieties of Stationary Storage Type Electric Water Heaters they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing capability and testing facilities of the Manufacturer.

4) During the operation of the Licence, BO shall ensure that all the models covered in the Licence are tested in rotation to the extent possible

ANNEX – B

परीक्षण उपकरणों की सूची

List Of Test Equipment

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests Used in With Clause Reference	Test Equipment/Chemical
1.	Cl. 10, Cl. 13, Cl. 16, Cl. 27	Voltmeter, Ammeter, Wattmeter, Micro ammeter, Mega Ohm Meter, Frequency Meter, Test Finger, Mili Ammeter
2.	Cl. 13.3	High Voltage Tester, Voltmeter, mili Ammeter
3.	Cl. 30	Glow Wire Test Apparatus – Temperature Indicator,Timer
4.	Cl. 14, Cl. 17, Cl. 19	Endurance Test Apparatus (Voltmeter, Ammeter, Wattmeter, Energy Meter, Counter Meter, Timer)
5.	Cl. 11	Temperature Indicator
6.	Cl. 15	Humidity Chamber (Temperature Indicator, Temperature Controller, Thermo hygrometer, Hour Meter), Test set up for degree of protection against moisture
7.	Cl. 23, Cl. 24, Cl. 26, Cl. 28, Cl. 29	Torque Screw Driver, Micrometer, Vernier Caliper,Gauges
8.	Cl. 22.101	Pressure Gauge, Vacuum Gauge
9.	Cl. 30	Hot Air Oven, Ball Pressure Test Apparatus
10.	Cl. 25	Cord Grip Test Apparatus
11.	Cl. 21	Impact Tester

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

ANNEX – C

निरीक्षण और परीक्षण की स्कीम

Scheme Of Inspection And Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing theStandard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the differenttests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 **RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:**

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: **All stationary storage type electric water heaters of each model number manufactured in a day shall constitute a control unit**. The manufacturer has the choice to define their own control unit/batch/lot and submit the same to the BIS.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively,the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirementsof the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In housetesting facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is givenbelow. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as perIS/ISO/IEC 17025.

2.2 **For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional**.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilitiesor get testing done from BIS recognized/empaneled laboratory or any other laboratory having validNABL accreditation as per IS/ISO/IEC 17025.

2.3 **Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as "R" in Column 2 of Table 1)**, where different testsgiven in the specification shall be carried out in accordance with the method given in the specification**.** They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize theprovisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 **TEST RECORDS**- The manufacturers maintaining an in-house laboratory or utilizing common cluster-based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratoryor any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on **each Stationary Storage Type Electric Water Heaters** provided always that the **Stationary Storage Type Electric Water Heaters** so marked conforms to each requirement of the specification.

3.1 Marking shall be done as per the Cl. 7 of **IS 2082 : 2018**.

3.2 **Additional Marking requirements**: The material shall also be marked with the following additional requirement on packaging:

a) "For BIS certification details please visit www.bis.gov.in"
b) Capacity in Litres
c) Material of inner tank of the **Stationary Storage Type Electric Water Heaters**
d) Each Stationary Storage Type Electric Water Heaters shall be provided with the instruction manual for installation, operation and use, routine maintenance and safety precautions.

4. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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
(ONLY FOR GUIDANCE PURPOSE)

(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**				
8	Components	24	IS 302 (Part 1)/ IEC 60335-1, IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21	S	Each consignment of components received	Further testing is not required if supplied with BIS Standard Mark or with Test certificate, whichever is applicable	
22.1.3	Earth Continuity Test	A-1	IS 302 (Part 1)/ IEC 60335-1	R	Each Stationary Storage Type Electric Water Heater		
22.1.3	Electric Strength Test	A-2		R			
22.1.3	Functional Test	A-3		R			
8	Provision to earthing	27	IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21	R			
8	Pressure Test	A.101		R			
14	Capacity	14	IS 2082	R	One	Each Control Unit	
7	Marking and Instruction	7		R	Firm should exercise adequate control so that whole production should meet the requirements. Records shall be maintained		
21	Finish	21		R			

8	Protection against access to live parts	8	IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21	R	One sample of each model of Stationary Storage Type Electric Water Heaters manufactured in the period of three months.
	Power Input & Current	10		R	
	Charging of metal-ion batteries	12		R	
	Leakage current & electric strength at operating temperature	13		R	
15	Standing Loss per 24 hours	15	IS 2082	S	One sample of each model of Stationary Storage Type Electric Water Heaters manufactured in the period of six months.
19	Deviation of dial calibration	19		S	
16	Hot Water Output	16		S	
17	Reheating Time	17		S	
18	Mixing Factor	18		S	
20	Cyclic Temperature Variation (differential)	20		S	
8	Heating	11	IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21	S	One sample of each model of Stationary Storage Type Electric Water Heaters manufactured in the period of six months.
	Transient Overvoltage	14		S	
	Moisture Resistance	15		S	
	Leakage Current & Electric Strength	16		S	
	Overload Protection of Transformers and associated circuits	17		S	
	Abnormal Operation	19		S	
	Stability & Mechanical Hazards	20		S	
	Mechanical Strength	21		S	
	Construction	22		S	

	Internal Wiring	23		S	
	Supply Connections & external flexiblecords	25		S	
	Terminals for external conductors	26		S	
	Screws & Connections	28		S	
	Clearances, creepage distances & solidinsulation	29		S	
	Resistance to heat & fire	30		S	
	Resistance to rusting	31		S	
	Radiation, toxicity and similar hazards	32		S	

ANNEX – D

एक दिन में संभावित परीक्षण
Possible Tests in a day

1. Finish (Cl. 21)
2. Pressure Test (Cl. 22.101 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
3. Protection against access to live parts (Cl. 8 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
4. High Voltage (Cl. 13.2.2 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
5. Earthing Connection (Cl. 27 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
6. Power Input and Current (Cl. 10 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
7. Heating (Cl. 11 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
8. Leakage Current & Electric Strength at operating temperature (Cl. 13 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
9. Leakage Current & Electric Strength (Cl. 16 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
10. Mechanical Strength (Cl. 21 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
11. Internal Wiring (Cl. 23 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
12. Supply connections & external flexible cords (Cl. 25 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
13. Terminals for external conductors (Cl. 26 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
14. Provision for Earthing (Cl. 27 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
15. Screws and Connections (Cl. 28 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)
16. Stability and Mechanical Hazards (Cl. 20 of IS 302 (Part 2/ Sec 21)/ IEC 60335-2-21)