



उत्पाद मैनुअल

आई एस 302-2-35 : 2017 के अनुसार

घरेलु और समान विद्युत साधित्रों की सुरक्षा भाग 2 विशेष अपेक्षाएँ अनुभाग 35 बिजली के पानी गर्म करने के लिए इंस्टेंट हीटर (दूसरा पुनरीक्षण) के लिए

दस्तावेज़ संख्या – पीएम/आईएस 302-2-35/1/जनवरी 2023

भारतीय मानक ब्यूरो की स्कीम-1 (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 दस्तावेज़ का उपयोग किया जा सकता है।

**PRODUCT MANUAL FOR
SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES
PART 2 PARTICULAR REQUIREMENTS SECTION 35 ELECTRIC
INSTANTANEOUS WATER HEATERS (SECOND REVISION)
ACCORDING TO IS 302-2-35 : 2017**

Document No - PM/IS 302-2-35/1/January 2023

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
SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES PART 2
PARTICULAR REQUIREMENTS SECTION 35 ELECTRIC INSTANTANEOUS WATER
HEATERS (SECOND REVISION)
ACCORDING TO IS 302-2-35:2017

1.	Product	:	IS 302-2-35:2017
	Title	:	Safety of Household and Similar Electrical Appliances Part 2 Particular Requirements Section 35 Electric Instantaneous Water Heaters (Second Revision)
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	-
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	2 no.
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 : Licence is granted to use Standard Mark as per IS 302-2-35 : 2017 with the following scope:		
	Name of the Product	Household and similar appliances – Electric Instantaneous Water Heaters	
	Model No.		
	Class	Class of Appliance___,	
	Type	<u>Closed / Open-Outlet</u>	
	Grade	Pollution degree____, Material group ____	
	Rating	____W,____V,____Hz,____Phase,____Pa	
	Capacity		
	Degree of protection	_____	
	Any other aspect specific to the type of the product		

ANNEX A

Grouping Guidelines

- 1) Manufacturer shall declare the capacity, pollution degree, material group, rating in wattage, input voltage, type, insulation class, degree of protection of Electric Instantaneous Water Heaters produced by them with a model number.
- 2) For grant of licence/ change in scope of licence,
 - a) Samples of Electric Instantaneous Water Heaters of each model shall be tested
 - b) The following relaxation may be given when a model is tested for all the requirements:
 - If a model with a particular degree of protection is tested, models with lower degrees of protection may also be covered subject to condition that all other parameters remain the same,
 - In case two or more models differ only in aesthetics, i.e colour, visual design etc, only one model may be tested subject to condition that all other parameters remain the same.
- 3) The Firm shall declare the models of Stationary Storage Type Electric Water Heaters they intend to cover in the Licence.
- 4) The Scope of Licence may be restricted based on the Manufacturing capability and Testing facilities of the Manufacturer.
- 5) 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**List Of Test Equipment*****Major test equipment required to test as per the Indian Standard***

S. No.	Test equipment list	Test used in with clause reference
1	Voltmeter, Ammeter, Wattmeter, Micro ammeter, Mega Ohm Meter, Frequency Meter, Test Finger, Milli Ammeter	Cl. 10, Cl. 13, Cl. 16, Cl. 27
2	High Voltage Tester, Voltmeter, milli Ammeter	Cl. 13.3
3	Glow Wire Test Apparatus – Temperature Indicator, Timer	Cl. 30
4	Endurance Test Apparatus (Voltmeter, Ammeter, Wattmeter, Energy Meter, Counter Meter, Timer)	Cl. 14, Cl. 17, Cl. 19
5	Temperature Indicator	Cl. 11
6	Humidity Chamber (Temperature Indicator, Temperature Controller, Thermo hygrometer, Hour Meter)	Cl. 15
7	Torque Screw Driver, Micrometer, Vernier Caliper, Gauges	Cl. 23, Cl. 24, Cl. 26, Cl. 28, Cl. 29
8	Pressure Gauge, Vacuum Gauge	Cl. 22.101
9	Hot Air Oven, Ball Pressure Test Apparatus	Cl. 30
10	Cord Grip Test Apparatus	Cl. 25
11	Test set up for degree of protection against moisture	Cl. 15
12	Impact Tester Cl. 21	Cl. 21
13	Air conditioner	To maintain ambient temperature

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 302-2-35 : 2017. In addition, the water heaters shall also be marked with rated pressure in Pascals, color coding/ identification for inlet and outlets rods. Each water heater shall be provided with the instruction manual for installation, operation and use, routine maintenance and safety precautions. This shall also include values declared by the manufacturer in respect of relevant test requirements.
- 4. CONTROL UNIT** – All stationary storage type electric water heaters of each model manufactured in a week or 500 stationary storage type electric water heaters of each model manufactured within a week, whichever is less, 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.
- 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
		Cl.	Ref			
5.1	Earth continuity test	A-1	IS 302-1	R	Each product	
5.1	Electric strength test	A-2		R	Each product	
5.1	Functional test	A-3		R	Each product	
8	Protection Against Access to live parts	8	IS 302-1, IS 302-2-35	R	Each product	
21	Mechanical Strength	21	IS 302-1	R	Each product	
10	Power Input and Current	10		R	Five	Every Control Unit
13	Leakage current and Electric strength at operating temperature	13		R		
22	Construction	22	IS 302-1, IS 302-2-21	R		
27	Provision for earthing	27		R		
14	Transient Overvoltages	14	IS 302-1	S	One	Every month for each model
16	Leakage current and Electric strength	16		S		
17	Overload protection of transformers and associated circuits	17		S		
20	Stability and Mechanical Hazard	20		S		

21	Mechanical Strength	21		S		
15	Moisture Resistance	15	IS 302-1, IS 302-2-35	S		
11	Heating	11		S		
19	Abnormal operation	19		S		
23	Internal Wiring	23	IS 302-1	S	One	Every six months for each model
25	Supply Connections and External Flexible Cords	25				
26	Terminals for External Conductors	26		S		
28	Screws and Connections	28		S		
29	Clearances, creepage distances and solid insulation	29		S		
31	Resistance to rusting	31		S		
32	Resistance to toxicity and similar hazards	32		S		
24	Components	24	IS 302-1, IS 302-2-35	S		
27	Provision for Earthing	27		S		
30	Resistance to heat and fire	30		S		

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

Note-2: For ensuring conformity of raw materials, further testing is not required if the consignment is accompanied by test certificate or ISI marked.

Note-3: In case of failure, all the water heaters in the control unit shall be tested and those found failing shall be rejected. Twice the number of samples shall be tested from the subsequent control units for these requirements till samples from 5 consecutive control units pass. Thereafter, the original frequency may be restored.

Note-4: In case of failure, the marking of that type & design shall be stopped and after a thorough investigation the defect shall be rectified. The markings shall be resumed when samples of that type & design tested from the improved lot show conformity to the requirements.

Note-5: Levels of control given in column 3 are 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

1. Earth Continuity test (A-1 of IS 302-1)
2. Electric strength test (A-2 of IS 302-1)
3. Protection against access to live parts (Cl. 8)
4. Power input and current (Cl. 10)
5. Heating (Cl. 11)
6. Leakage current and electric strength at operating temperature (Cl. 13)
7. Mechanical strength (Cl. 21)
8. Provision for earthing (Cl. 27)
9. Screws and connections (Cl. 28)
10. Resistance to heat and fire (Cl. 30)
11. Stability and Mechanical Hazards (Cl. 20)