



उत्पाद मैनुअल

आई एस 302-2-201 : 2008 के अनुसार
घरेलु और समान विद्युत साधित्रों की सुरक्षा भाग 2 विशेष अपेक्षाएँ खंड 201 बिजली के निमज्जय
वाटर हीटर (पहला पुनरीक्षण) के लिए

दस्तावेज संख्या – पीएम/आईएस 302-2-201/2/ जुलाई 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। दस्तावेज का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा
भी किया जा सकता है।

PRODUCT MANUAL FOR

**SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES
PART 2 PARTICULAR REQUIREMENTS SEC 201 ELECTRIC
IMMERSION WATER HEATERS (FIRST REVISION)**

ACCORDING TO IS 302-2-201 : 2008

Document No - PM/IS 302-2-201/2/July 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 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.*

भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

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उत्पाद मैनुअल
घरेलु और समान विद्युत साधित्रों की सुरक्षा भाग 2 विशेष अपेक्षाएँ
खंड 201 बिजली के निमज्ज्य वाटर हीटर (पहला पुनरीक्षण)
आई एस 302-2-201 : 2008 के अनुसार

PRODUCT MANUAL
SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES PART 2
PARTICULAR REQUIREMENTS SEC 201 ELECTRIC IMMERSION WATER
HEATERS (FIRST REVISION)
ACCORDING TO IS 302-2-201 : 2008

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.

NOTE:

Manufacturers of 'Electric Immersion Water Heater' are required to take BIS certification as per IS 368 : 2014. Then the requirements of the product as per IS 302-2-201 : 2008 are deemed complied.

1.	मानक संख्या IS No.	:	IS 302-2-201 : 2008
	शीर्षक Title	:	Safety of household and similar appliances - Electric Immersion Water Heater
	संशोधनों की संख्या	:	1

	No. of amendments		
2.	नमूना दिशानिर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	NIL
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX – A
c)	नमूने का परिमाण Sample Quantity	:	2 Nos. of electric immersion water heaters
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 302-2-201 : 2008 with the following scope:			
	Name of the Product	Electric Immersion Water Heaters (Safety)	
	Class	Class of Appliance ____, Insulation Class ____	
	Grade	Pollution degree ____, Material group ____	
	Rating	__ W, __ V, __ Hz, ____ Phase, ____ Pa	

ANNEX – A

समूहीकरण दिशानिर्देश **Grouping Guidelines**

- 1) For considering GoL/CSoL, following grouping shall be considered:
 - a) **Group I** – up to and including 1000 W
 - b) **Group II** – above 1000 W
- 2) One sample from each group, preferably of the highest wattage, for each voltage rating intended to be covered in the licence may be drawn for testing to cover the entire range of wattages in that group.
- 3) The Firm shall declare the varieties of Electric Immersion 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 Varieties 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.	Test Equipment/ Chemical	Tests Used In With Clause Reference
1.	Cl. 10, Cl. 13	Testing panel consisting of Voltmeter, Ammeter, Wattmeter, Micro ammeter
2.	Cl. 16, Cl. 27	High Voltage Tester, Stop Watch, Micro Ampere Meter
3.	Cl. 15	Humidity Chamber with Digital Thermometer, Hygrometer and Hour Meter
4.	Cl. 30	Hot Air Oven, Ball Pressure Apparatus, Travelling Microscope, Digital Temperature Controller, Digital Timer
5.	Cl. 11	Suitable size dull black painted wooden test corner with embedded copper disc along with thermocouple & temp. indicator
6.	Cl. 21	Impact Test Apparatus
7.	Cl. 25	Cord Grip tester
8.	Cl. 29	Vernier Calliper, Feeler gauges
9.	Cl. 28	Torque Screw Driver

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 the Standard 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 different tests 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 electric immersion water heaters of each type and rating 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 requirements of 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 house testing 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 given below. 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 per IS/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 facilities or get testing done

from BIS recognized/empaneled laboratory or any other laboratory having valid NABL 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 tests given 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 the provisions 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 laboratory or 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. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on **each electric immersion water heaters and also on its packaging** provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the **IS 302-2-201 : 2008**.

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”

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				
	Earth Continuity Test	A-1	IS 302-1	R	Each Electric Immersion Water Heater		
	Electric Strength Test	A-2	IS 302-1	R			
	Functional Test	A-3	IS 302-1	R			
7	Marking and Instruction	7	IS 302-1	R	Firm should exercise adequate control so that whole production should meet the requirements. Records shall be maintained		
8	Protection against access to live parts	8	IS 302-2-201	R	One	Each Control Unit	
27	Provision for Earthing	27	IS 302-2-201	R	One	Each Control Unit	
13	Leakage current & electric strength at operating temperature	13	IS 302-2-201	R	One	Each Control Unit	
16	Leakage Current & Electric Strength	16	IS 302-2-201	R	One	Each Control Unit	
10	Power Input & Current	10	IS 302-2-201	S	One	Once in every three months for each type of Electric Immersion Water Heater	
11	Heating	11	IS 302-2-201	S	One		
21	Mechanical Strength	21	IS 302-2-201	S	One		
12	Operation under overload conditions of appliances with heating element	12	IS 368	S	One	Once in every six months for each type of Electric Immersion Water Heater	
15	Moisture Resistance	15	IS 302-2-201	S	One		
18	Endurance	18	IS 368	S	One		
19	Abnormal Operation	19	IS 368, IS 302-2-201	S	One		
14	Transient Overvoltage	14	IS 302-2-201	S	One		

20	Stability & Mechanical Hazards	20	IS 302-2-201	S	One		
22	Construction	22	IS 302-2-201	S	One		
23	Internal Wiring	23	IS 302-2-201	S	One		
24	Components	24	IS 302-2-201	S	One	Same as above	Further testing is not required if supplied with BIS Standard Mark or with Test certificate, which ever applicable
25	Supply Connections & external flexiblecords	25	IS 302-2-201	S	One	Once in every six months for each type of Electric Immersion Water Heater	
26	Terminals for external conductors	26	IS 302-2-201	S	One		
28	Screws & Connections	28	IS 302-2-201	S	One		
29	Clearances, creepage distances & solidinsulation	29	IS 302-2-201	S	One		
30	Resistance to heat & fire	30	IS 302-2-201	S	One		
31	Resistance to rusting	31	IS 302-2-201	S	One		

ANNEX – D

एक दिन में संभावित परीक्षण Possible Tests in a day

1. Earth Continuity test (A-1 of IS 302-2-7)
2. Electric strength test (A-2 of IS 302-2-7)
3. Functional test (A-3 of IS 302-2-7)
4. Marking and Instruction (Cl. 7)
5. Protection against access to live parts (Cl. 8)
6. Power input and current (Cl. 10)
7. Leakage current and Electric strength (Cl. 16)
8. Provision for earthing (Cl. 27)