



उत्पाद मैनुअल

आई एस 302-2-9 : 2009 के अनुसार

घरेलु और समान विद्युत साधित्रों की सुरक्षा भाग 2 विशेष अपेक्षाएँ अनुभाग 9 टोस्टर, ग्रिल, रोस्टर और समान साधित्र (पहला पुनरीक्षण) के लिए

दस्तावेज़ संख्या – पीएम/आईएस 302-2-9/1/नवंबर 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 दस्तावेज़ का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES PART 2 PARTICULAR REQUIREMENTS SECTION 9 TOASTERS, GRILLS, ROASTERS AND SIMILAR APPLIANCES (FIRST REVISION) ACCORDING TO IS 302-2-9 : 2009

Document No - PM/IS 302-2-9/1/November 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.

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**PRODUCT MANUAL FOR
SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES - TOASTERS,
GRILLS, ROASTERS AND SIMILAR APPLIANCES
ACCORDING TO IS 302-2-9:2009**

1.	Product	:	IS 302-2-9:2009
	Title	:	Safety of household and similar appliances – TOASTERS, GRILLS, ROASTERS AND SIMILAR APPLIANCES
	No. of Amendments	:	0
2.	Sampling Guidelines:		
a)	Raw material	:	-
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	1 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 302-2-9:2009 with the following scope:		
	Name of the Product	Household and similar appliances – Safety Requirements	
	Type of Appliance	Electric Oven/toaster/grill/roaster / other products in scope of the Indian Standard	
	Rating	_____W, _____V, _____Hz, _____Phase _____	
	Class	Class of Appliance _____,	
	Degree of protection		
	Any other aspect specific to the type of the product		

ANNEX A

Grouping Guidelines

- 1) On sample to be tested
 - a) Samples of Toasters, Grills, Roasters and Similar Appliances shall be tested considering the following:
 - Type/ Functionality of the product (For example Oven, toaster, grills etc)
 - Rated voltage
 - Rated input power
 - Class of appliance
 - Degree of protection against harmful ingress of water
 - b) All other parameters stated above remaining the same, the following relaxation may be given when a variety is tested for all the requirements:
 - To cover a range of rated inputs, samples of minimum and maximum rated power rating may be tested.
 - If a variety with a particular degree of protection is tested, varieties with lower degrees of protection may also be covered.
- 2) The Firm shall declare the varieties 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.
- 3) 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.	Test equipment list	Test used in with clause reference
1	Petroleum spirit, Cloth, Stopwatch	Cl. 7 (Marking and instruction)
2	Test probe-B, Test Probe-13, Test probe-41, Push-Pull Gauge, Voltmeter	Cl.8 (Protection against access to live parts)
3	Wattmeter, Voltmeter	Cl. 10 (Power Input and current)
4	Digital temp Indicator, Steel scale, Voltmeter, Wattmeter, Wooden test corner, Thermometer, Stopwatch	Cl. 11 (Heating)
5	Leakage current tester, Wattmeter, Voltmeter, Stop watch, HV tester, Humidity chamber	Cl. 13, Cl. 15, Cl. 16 (Leakage current and electric strength, Moisture resistance test)
6	Watt-meter, Voltmeter, Temp indicator, HV tester, Metal Foil, Thermometer, Stop watch	Cl. 19 (Abnormal Operation)
7	Inclined plane, Angle Finder, Push pull gauge, Test probe B, Steel scale, Spring Hammer	Cl. 20 (Stability and mechanical Hazards), Cl. 21 (Mechanical Strength)
8	Test probe-B, Test probe-13, Test probe-41, Push-pull Gauge, Hot Air Oven, Stop watch, Voltmeter, Multi meter, Vernier Caliper,	Cl. 22 (Construction)
9	Flexing Test Apparatus, HV tester, Metal Foil, Stop watch	Cl. 23 (Internal Wiring)
10	LCR meter, Endurance test apparatus	Cl. 24 (Components)
11	Vernier Caliper, weighing balance, Cord grip test apparatus, Stop watch, Micro ohm meter, Torque Screw Drivers, HV tester, Metal foil, Cord flexing test apparatus, Push pull gauge	Cl. 25 (Supply connections and External Flexible Cables and Cords), Cl. 26 (Terminal for external Conductors) Cl. 28 (Screw and connections), Cl. 29 (Creepage distances and Clearances and distances through insulation)
12	ECR Tester	Cl. 27 Provision for Earthing

13	Hot Air Oven, Ball pressure test apparatus, Vernier caliper, Glow wire tester, Travelling microscope	Cl. 30 (Resistance to heat, Fire and tracking)
14	Humidity Chamber with Temp and Humidity Controller, Measuring Cylinder 500 ml Ammonium Chloride, Carbon Tetrachloride, Distilled Water	Cl. 31 (Resistance to rusting)
15	Temp recorder, Fine wire thermocouples, Winding resistance measurement system, Test Corner, probe for measurement of surface temperature	Cl.17, (Overload protection of transformers and associated circuits)
16	Impulse voltage test generator and monitor	Cl. 14 (Transient voltages)
17	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 -2-9 : 2009.
- 4. CONTROL UNIT** – For the purpose of this Scheme, Ovens, Toasters, Grills, Roasters and Similar Appliances of each type, rating, class of appliance, and degree of protection manufactured in a 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.
- 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 Electric Shock	8	IS 302-2-9	R	Each product	
27	Provision for earthing	27		R	Each product	
10	Power Input and Current	10		R	Each product	
11	Heating	11		R	One	Each control unit
13	Leakage current and Electric strength at operating temperature	13		R	One	Each control unit
15	Moisture Resistance	15		R	One	Every month for each type, rating, class of appliance, and degree of protection
16	Leakage current and Electric strength	16		R	One	Each control unit
14	Transient Overvoltages	14		S	One	Every six months for each type, rating, class of appliance, and degree of protection
17	Overload protection of transformers and associated circuits	17		S		
19	Abnormal operation	19		S		

20	Stability and Mechanical hazards	20	S	One	Every six months for each type, rating, class of appliance, and degree of protection
21	Mechanical strength	21	S		
22	Construction	22	S		
23	Internal wiring	23	S		
24	Components	24	S		
25	Supply connection and external flexible cables and cords	25	S		
26	Terminals for external conductors	26	S		
28	Screws and connections	28	S		
29	Creepage distances, clearances and distances through insulation	29	S		
30	Resistance to heat, fire and tracking	30	S		
31	Resistance to rusting	31	S		
32	Radiation, Toxicity and Similar Hazards	32	S		

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

Note-2: 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)