



PRODUCT MANUAL FOR SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – ELECTRIC IRON ACCORDING TO IS 302-2-3:2007

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 license/certificate.

1.	Product	:	IS 302-2-3:2007
	Title	:	Safety of household and similar appliances – Electric Iron.
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	–
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	4 nos. of Electric Irons
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 :	:	Please refer ANNEX-E

ANNEX A

Grouping Guidelines

- 1) IS 302-2-3:2007 covers Safety of Electric Irons of the following major Types:
 - Dry Iron - Cordless
 - Dry Iron – With Cord
 - Vented Steam Iron - Cordless
 - Vented Steam Iron – With Cord
 - Pressurized Steam Iron - Cordless
 - Pressurized Steam Iron – With Cord
 - Instantaneous Steam Iron - Cordless
 - Instantaneous Steam Iron – With Cord

- 2) For GoL/CSoL, following grouping shall be considered provided the samples are of the same Type, Class, Grade and Rating:
 - a) **Group I** - up to and including 1000 W
 - b) **Group II** – above 1000 W

- 3) One sample from each group, preferably of the highest wattage, intended to be covered in the licence shall be drawn for testing to cover the entire range of wattages in that group. However, if a particular type of iron tested is with cord, cordless variety of that type may also be covered and vice-versa.

- 4) The Firm shall declare the varieties of Electric Irons 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.

- 5) 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*

Sl. No.	Test Equipment	Tests used in with Clause Reference
1	Voltmeter, Finger Test Apparatus	Cl. 8
2	Voltmeter, Ammeter, Wattmeter	Cl. 10
3	Test Corner consisting of dull-black painted plywood, Temperature Controller	Cl. 11
4	IR Meter, Micro ammeter, HV Tester, Stopwatch	Cl. 13
5	Humidity Test Chamber	Cl. 15
6	Metal foil, HV Test Supply,	Cl. 16
7	Test Corner, Felt Strips, Copper/brass disks	Cl.19
8	Inclined Test Apparatus	Cl. 20
9	Spring Hammer, Finger Test Apparatus	Cl. 21
10	Micrometer, VAW meter, Pressure Test Apparatus	Cl. 22
11	Flexing Test Apparatus	Cl. 23
12	Cord Grip Test Apparatus, Measuring Tape, Micro ohmmeter	Cl. 25
13	Torque Screwdriver	Cl. 26
14	Earth Contact Resistance Testing Panel (ECR Measurement), Voltmeter, Ammeter	Cl. 27
15	Torque Wrench	Cl. 28
16	Filler Gauge, Vernier Caliper, Micrometer	Cl. 29
17	Glow Wire Test Apparatus, Oven, Ball Pressure Apparatus, Heating Oven with temperature controller	Cl. 30
18	Humidity Chamber with temperature and humidity controller, measuring cylinder, Ammonium chloride, Carbon Tetrachloride	Cl. 31

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 (Part 2/Sec 3):2007.

4. CONTROL UNIT – Electric irons of each type and rating 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	Remarks
		Clause	Reference				
5	Earth Continuity test	5.1, A-1	IS 302-1	R	Each electric iron	—	—
5	Electric strength test	5.1, A-2	IS 302-1	R			
5	Functional test	5.1, A-3	IS 302-1	R			
8	Protection against access to live parts	8	IS 302-2-3 IS 302-1	R			
27	Provision for Earthing	27		R			
10	Power input and current	10	IS 302-2-3 IS 302-1	R	10% subject to a minimum of three and maximum of thirteen	Every Control Unit	Please see Note 1
13	Leakage current and electric strength at operating temperature	13		R			
11	Heating (Temperature Rise)	11	IS 302-2-3 IS 302-1	R	Two	Every week for each type and rating	Please see Note 2
15	Moisture resistance	15		R			
16	Leakage current and Electric Strength	16		R			
14	Transient Overvoltage	14	IS 302-2-3 IS 302-1	S	Two	Every year for each type and rating	
21	Mechanical Strength	21	IS 302-2-3 IS 302-1	S	Two from each type and rating every 3 months or 5000 electric irons whichever is earlier		
19	Abnormal Operation	19		S	Two	Every six months for each type and rating	
20	Stability & Mechanical Hazards	20	IS 302-2-3 IS 302-1	S			

22	Construction	22		S	Two	Every six months for each type and rating	Please see Note 2
23	Internal wiring	23	IS 302-2-3 IS 302-1	S			
24	Components	24		S			
25	Supply connection and external flexible cords	25		S			
26	Terminals for external conductors	26		S			
28	Screws and connections	28		S			
29	Clearances, creepage distances and solid insulation	29		S			
30	Resistance to heat & fire	30		S			
31	Resistance to rusting	31		S			
32	Radiation, toxicity and similar hazards	32		S			

Note-1: In case of failure, all electric irons in the control unit shall be tested and those found failing shall be rejected. All electric irons produced subsequently shall be tested for these requirements till 13 consecutive electric irons pass. The original frequency may then be restored.

Note-2: In case of failure in any type and rating, a thorough investigation of the cause of failure shall be made and defects rectified. Five samples of that type and rating from the improved lot shall be tested for these requirements till samples from five consecutive control units pass. The original frequency may then be restored.

Note-3: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-4: 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.

ANNEX D

Possible Tests in a day

1. Earth Continuity test
2. Electric strength test
3. Functional test
4. Protection against access to live parts
5. Power input and current
6. Leakage current and electric strength at operating temperature
7. Provision for earthing

ANNEX-E

License is granted to use Standard Mark as per IS 302-23:2007 with the following scope:

Name of the Product	:	Electric Iron (Safety)
Type	:	Dry Iron (Cordless/ With Cord) / Vented Steam Iron (Cordless/ With Cord)/ Pressurized Steam Iron (Cordless/ With Cord) / Instantaneous Steam Iron (Cordless/ With Cord)
Class	:	Class of Appliance _____, Insulation Class _____
Grade	:	Pollution Degree _____, Material Group _____
Rating	:	_____W, _____V, _____Hz, _____Phase