

PRODUCT MANUAL FOR SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES -ROOM HEATERS ACCORDING TO IS 302-2-30:2007

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 302-2-30:2007 |
| | Title | : | Safety of household and similar appliances – Room Heaters. |
| | No. of Amendments | : | 2 |
| 2. | Sampling Guidelines: | | |
| a) | Raw material | : | – |
| b) | Grouping guidelines | : | Please refer ANNEX – A |
| c) | Sample Size | : | 2 nos. of Room Heaters |
| 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 302-2-30:2007 with the following scope: | | |
| | Name of the Product | Room Heater (Safety) | |
| | Type of heater | | |
| | Class | Class of Appliance _____, Insulation Class _____ | |
| | Grade | Pollution degree _____, Material group _____ | |
| | Rating | _____ W, _____ V, _____ Hz, _____ Phase _____ | |

ANNEX A

Grouping Guidelines

- 1) 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
- 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 Room 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**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, Ammeter, Wattmeter | Cl. 10, Cl. 19 |
| 2 | Step-less variable voltage transformer | Cl. 8 |
| 3 | Milli-ammeter for Leakage Current, High Voltage Tester | Cl. 13, Cl. 16 |
| 4 | Thermocouple with digital/analog indicator | Cl. 30 |
| 5 | Cord grip test apparatus, Micrometer | Cl. 25 |
| 6 | Vernier Caliper, Feeler gauges | Cl. 29 |
| 7 | Torque Screw Drivers | Cl. 25, Cl. 28 |
| 8 | Wooden Test Corner, Laboratory ovens having thermostatic controls | Cl. 11 |
| 9 | Ball pressure apparatus, Inclined plane , Impact test apparatus | Cl. 21, Cl. 30 |
| 10 | Generator having a virtual impedance of 12 Ω | Cl. 14 |
| 11 | Humidity Chamber | Cl. 15 |

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 30):2007.

4. CONTROL UNIT – For the purpose of this Scheme, room heaters 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 room heater | — | — |
| 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 302-2-30 IS 302-1 | R | | | |
| 27 | Provision for Earthing | 27 | | R | | | |
| 10 | Power input and current | 10 | IS 302-2-30 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 | 11 | IS 302-2-30 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 302-2-30 IS 302-1 | S | One | Every year for each type and rating | |
| 21 | Mechanical Strength | 21 | IS 302-2-30 IS 302-1 | S | Two from each type and rating every 3 months or 5000 room heaters whichever is earlier | | |
| 17 | Overload Protection of transformers and associated circuits | 17 | IS 302-2-30 IS 302-1 | S | Two | Every six months for each type and rating | |
| 19 | Abnormal Operation | 19 | | S | | | |
| 20 | Stability & Mechanical Hazards | 20 | | S | | | |

| | | | | | | | |
|----|-----------------------------------------------------|----|-------------------------|---|-----|-------------------------------------------|-------------------|
| 22 | Construction | 22 | IS 302-2-30 IS 302-1 | S | Two | Every six months for each type and rating | Please see Note 2 |
| 23 | Internal wiring | 23 | | 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 | | | |

Note-1: In case of failure, all room heaters in the control unit shall be tested and those found failing shall be rejected. All room heaters produced subsequently shall be tested for these requirements till 13 consecutive heaters 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. Heating
7. Leakage current and electric strength at operating temperature
8. Mechanical strength
9. Provision for earthing
10. Screws and connections
11. Resistance to heat and fire
12. Stability and Mechanical Hazards