SCHEME OF TESTING AND INSPECTION FOR CERTIFICATION OF SAFETY OF ELECTRIC AND HOUSEHOLD AND SIMILAR ELECTRIC APPLIANCES

ELECTRIC IMMERSION WATER HEATER
ACCORDING TO IS 302-2-201 (1992)
[INCORPORATING AMENDMENT NO.2 OF IS:302-2-201 (1992)]

1. LABORATORY: A laboratory shall be maintained, which shall suitably equipped and staffed, where different tests shall be carried in accordance with the methods given in the specification.

1.1 All the testing apparatus shall be periodically checked and calibrated and records of such checks shall be maintained.

2. TEST RECORDS: All records of tests and inspections shall be kept in suitable forms approved by BIS.

2.1 Copies of any record or chart that may be required by BIS shall be made available at any time on request.

2.2 It is recommended that, as far as possible, Statistical Quality Control (SQC) methods may be used for controlling the quality during production as envisaged in the scheme [See IS:397 (Part I)-1972, IS:397 (Part II)-1985 and IS:397 (Part III)-1980].

2.3 In addition, efforts should be made to gradually introduce Quality Management System in accordance with the Quality system model as per IS/ISO:9001 or IS/ISO:9002 or IS/ISO:9003 as appropriate to the activities of the organization.

3. STANDARD MARK: The Standard Mark as given in Column (1) of the first schedule of the licence shall be applied on each electric immersion water heater in the form of transfix labels or anodized plate suitably fixed thereon, provided always that the electric immersion water heater so marked conforms to every requirement of the specification.

4. OTHER MARKINGS: In addition, the electric immersion water heater shall be marked with the following information:

a) Manufacturers name, recognized trade mark, brand name and model or type ref. if any;
b) Rated voltage in volts;
c) Rated input in watts or kilowatts;
d) Maximum and minimum level of water immersion;
e) Country of manufacture and;
f) Identification in code or otherwise, to enable the date and lot of manufacture to be traced back to the records.
4.1 An instruction sheet giving necessary instructions including precautions to be taken for the proper use shall be provided with each electric water immersion heater.

5. **LEVELS OF CONTROL**: The tests and inspection, as indicated in Table 1 attached and at the levels of control specified therein, shall be carried out on whole production of the factory covered by the licence and appropriate records and charts maintained in accordance with paragraph 2 above. On the basis of test results decision regarding conformity or otherwise of the control unit shall be taken. All the production which conforms to the Indian Standard and covered by the license shall be marked with Certification Mark of the Bureau.

5.1 For the purpose of scheme, all electric immersion water heater of one type and rating manufactured in a day shall constitute a control unit.

5.1.1 If electric immersion water heaters of more than one type and rating are manufactured on the same day they shall constitute separate control units.

6. **RAW MATERIAL/COMPONENT**: The raw material/component used should conform to the relevant Indian Standard wherever they exist. The raw material may be marked with Certification Mark of Bureau or each consignment may be accompanied by test certificate showing it conformity to the relevant specification or the firm may get each consignment tested in their laboratory or in an independent laboratory for ascertaining its conformity to the relevant specification. The relevant test records shall be maintained and made available at any time on request.

**NOTE**: As and when the type of raw material/component is changed (vig. Heating element, thermostat, thermal cut-out etc.) samples shall be tested for all type tests and they shall pass before marking of electric immersion water heaters made out of new material is commenced.

7. **CONSTRUCTION**: The construction of electric immersion water heater shall conform to clause 22 of IS:302-2-201 (1992) which shall be adequately ensured during production process.

8. In respect of all other clauses of the specification and at all stages of manufacture, the factory shall maintain appropriate control and checks to ensure that their production conforms to various requirements of the specification.

9. **REJECTION**: A separate record shall be maintained giving information relating to the rejection of product which do not conform to the specification and the method of their disposal. Such product shall not in any case, be stored together with those conforming to the requirements of the specification.
10. **SAMPLES**: The licensee shall supply, free of charge, the sample required in accordance with Bureau of Indian Standards (Certification Regulations from his factory or godown(s). The Bureau shall pay of the samples taken by it from the open market.

11. **REPLACEMENT/REPAIR**: Whenever a complaint is received soon after the goods with Standard Mark have been purchased and used and if there is adequate evidence that the goods have not been misused, defective goods or their component are replaced or repaired free of cost by the licensee in case the complaint is proved to be genuine and the warranty period (where applicable) has not expired. The final authority to judge conformity shall be with the Bureau.

12. **STOPPAGE OF MARKING**: The marking of the product shall be stopped under intimation to the BIS, if, at any time, there is some difficulties in maintaining the conformity of the product to the specification, the testing equipment goes out of order. The marking may be resumed soon as the defects are removed under intimation to BIS.

The marking of the product shall be stopped immediately if directed to do so by BIS for any reason. The information regarding resumption of marking shall also be sent to the BIS.

13. **PRODUCTION DATA**: The licensee shall maintain production data as per enclosed proforma-1, which may be authenticated by a chartered accountant or by giving affidavit (which may be required along with renewal application). The licensee shall send to BIS as per the enclosed proforma-2 and proforma-3, a statement of the quantity produced, marked and exported by him and the trade value thereof during the half year ending 30 June and 31 December. This statement is required to be forwarded to the Bureau on or before the 31st day of July and January for the preceding half year.
## TEST DETAILS

<table>
<thead>
<tr>
<th>Clause</th>
<th>Requirements</th>
<th>Test Method</th>
<th>No. of Samples</th>
<th>Lot Size</th>
<th>Frequency</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clause</td>
<td>Reference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Protection against electric shock</td>
<td>8 IS:302-2-201 (1992)</td>
<td>Each electric water heater.</td>
<td></td>
<td>10% subject to a minimum of three and maximum thirteen</td>
<td></td>
</tr>
<tr>
<td>101.3</td>
<td>High Voltage</td>
<td>13.3.2 IS 302-1 (1979)</td>
<td></td>
<td></td>
<td>Every control unit</td>
<td>In case a sample(s) fails, each product in the control unit shall be tested and those not passing shall be rejected. The products produced subsequently shall be tested for these requirements till 13 consecutive samples pass. The original frequency may then be restored.</td>
</tr>
<tr>
<td>27</td>
<td>Provision for Earthing.</td>
<td>27 IS 302-2-201 (1992)</td>
<td></td>
<td></td>
<td>Every control unit</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Input</td>
<td>10 ---do----</td>
<td></td>
<td></td>
<td>One control unit</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Electrical insulation and leakage current at operating temperature.</td>
<td>13 ---do----</td>
<td></td>
<td></td>
<td>Every control unit for each type and rating</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Moisture resistance</td>
<td>15 IS 302-2-201 (1992)</td>
<td>Two</td>
<td>One control unit</td>
<td>Every week</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Insulation resistance and electric strength (after humidity treatment)</td>
<td>16 -do-</td>
<td>Two</td>
<td>One control unit</td>
<td>Every month or after every 5000 pieces of electric imm. Water heater manufactured whichever is earlier for such type and rating.</td>
<td>In case a sample fails in any of the requirements, the marking of that type and rating of immersion shall be made and defect rectified. The marking shall only be resumed when five samples of that type and rating produced show conformity to these requirements. The original frequency may then be restored.</td>
</tr>
<tr>
<td>11</td>
<td>Temperature rise.</td>
<td>11 IS 302-2-201 (1992)</td>
<td>Two</td>
<td>One control unit.</td>
<td>Every month or after every 5000 pieces of electric imm. Water heater manufactured whichever is earlier for such type and rating.</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Mechanical Strength</td>
<td>21 -do-</td>
<td>Two</td>
<td>One control unit.</td>
<td>Every month or after every 5000 pieces of electric imm. Water heater manufactured whichever is earlier for such type and rating.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Operation under over load condition.</td>
<td>12 -do-</td>
<td>Two</td>
<td>One control unit.</td>
<td>Every month or after every 5000 pieces of electric imm. Water heater manufactured whichever is earlier for such type and rating.</td>
<td></td>
</tr>
</tbody>
</table>
## TEST DETAILS

<table>
<thead>
<tr>
<th>Clause</th>
<th>Requirements</th>
<th>Test Method</th>
<th>No. of Samples</th>
<th>Lot Size</th>
<th>Frequency</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Abnormal operation</td>
<td>19 IS 302-2-201</td>
<td>Two</td>
<td>Control unit</td>
<td>Every six months for each type &amp; rating.</td>
<td>In case a sample fails in any of the requirements, the marking of that type and rating of immersion. Water heater shall be suspended. A thorough investigation of the cause of failure shall be made and defect rectified. The marking shall only be resumed when five samples of that type and rating produced show conformity to these requirements. The original frequency may then be restored.</td>
</tr>
<tr>
<td>20</td>
<td>Stability &amp; Mechanical hazards.</td>
<td>20 -do-</td>
<td>One control unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Construction.</td>
<td>22 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Internal wiring</td>
<td>23 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Components</td>
<td>24 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Cord grip &amp; cord guard.</td>
<td>25 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Terminals for external conductors.</td>
<td>26 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Screws &amp; connections</td>
<td>28 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Creep age distances &amp; clearances.</td>
<td>29 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Resistance to heat, fire &amp; tracking.</td>
<td>30 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Resistance to rusting.</td>
<td>31 -do-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PROFORMA – 1
PRODUCTION ACCOUNT

<table>
<thead>
<tr>
<th>Date</th>
<th>Total Production</th>
<th>Stock Opening</th>
<th>Quantity Despatched</th>
<th>Bill No.</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Opening</td>
<td>Closing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISI</td>
<td>Non-ISI (Rejection)</td>
<td>ISI Non-ISI (Rejection)</td>
<td>ISI Non-ISI (Rejection)</td>
<td>ISI Non-ISI (Rejection)</td>
<td>Total Qty.</td>
</tr>
</tbody>
</table>

---------------------------------------------------------------------------------------------------------------------------

PROFORMA – 2

STATEMENT OF QUANTITY PRODUCED, MARKED AND EXPORTED DURING THE PERIOD __________ TO _____________

CM/L-
Licensee:

Product: IS No:

---------------------------------------------------------------------------------------------------------------------------

Quantity Value*

1. Total Production.
2. Production covered with Standard Mark.
3. Production Exported
   a) With Standard Mark;
   b) Without Standard Mark.
4. Country to which material exported.
   a) With Standard Mark;
   b) Without Standard Mark.

---------------------------------------------------------------------------------------------------------------------------

*f.o.b. Value may be given.

Signature
PROFORMA – 3

PROFORMA FOR PRODUCTION DETAILS

(Period covered by the Report being _______ to _______)

Name of Licensee

CM/L No.

Name of Article(s)       IS No.

1. Total production of the article(s) licensed for certification marking.

1.1 Total production of the article(s) conforming to Indian Standard.

2. Production covered with BIS Certification Mark and its approximate value.

   a) Quantity
   b) Value Rs.

2.1 Calculation of marking fee on unit-rate basis:       Marking Fee per unit

   a) Unit
   b) Quantity covered with BIS Certification Mark.
   c) Marking fee rounded off in whole rupees as obtained by applying unit rates given in
      (a) on quantity given in (b)

3. Quantity not covered with BIS Certification Mark. If any, and the reasons for such non-coverage.

Signature:

Date:                Seal
------------------------------------------------------------------------------------------------------------------

Note: In case a clause is not applicable, suitable remarks may be given against it.