



**PRODUCT MANUAL FOR
SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES - TUMBLER DRYERS
IS 302-2-11:1994**

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.

1.	मानक संख्या IS No.	:	IS 302-2-11:1994
	शीर्षक Title	:	Safety of household and similar electrical appliances – Part 2 Particular Requirements – Section 11 - Tumbler Dryers
	संशोधनों की संख्या No. of amendments	:	1
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Raw Material and Components used in the product shall be tested as per relevant Indian Standard, wherever applicable. In case, the raw material / component is notified under mandatory BIS certification, the raw material/ component shall bear the BIS Standard Mark under a valid licence. E.g. Plugs: as per IS 1293, Cables: as per IS 694/ IS 9968 (Part 1), Switches as per IS 3854, Steel – IS 6911, IS 277 etc.
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX – A
c)	नमूने का परिमाण Sample Quantity	:	1 no. (For GoL/ CSoL / Surveillance)
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	:	Please refer ANNEX-D

	Possible tests in a day		
6.	लाइसेंस का दायरा /Scope of the Licence:		
*License is granted to use Standard Mark as per IS 302-2-7:1994 with the following scope:			
	Name of the product	Safety of Household and Similar Electrical Appliances – Tumbler Dryers	
	Type of Appliance	Tumbler dryers	Condensation type Tumbler Dryers
	Maximum mass of dry clothes	(in kg)	(in kg)
	Rating	 W, V, Hz, ac / dc	 W, V, Hz, ac / dc
	Any other declarations	Constructional / Special features of dryer to be declared by the manufacturer	

ANNEX A**Grouping Guidelines**

1. Tumbler Dryers are classified based on the followings:
 - a) Type of appliance:
 - i. Tumble dryers
 - ii. Condensation type Tumble Dryers
 - b) Maximum mass of dry clothes (in kg);
2. For considering GoL / CSoL for a given type of appliance (Tumble dryer / Condensation type tumble dryer), one model of maximum mass of dry clothes shall be tested to cover all other models with less than the variety tested provided there is no change in any constructional requirements / special features of the dryer.
3. Following relaxation may be considered subject to the condition that type of appliance and class of appliance remain same:
 - a) In case a model with higher insulation class is tested, then models with lower insulation class may be covered in the scope of licence without any further testing;
 - b) In case a model with higher degree of protection is tested, then models with lower degree of protection may be covered in the scope of licence without any further testing.
4. In case of change in colour/ aesthetic changes, separate testing may not be required.
5. Along with the declarations at Sl. 1 above, manufacturer shall also declare the following for each of the model(s):
 - a) Class of Appliance
 - b) Degree of protection
 - c) Material Group
 - d) Pollution Degree
 - e) Instruction/ operation manual along with photographs of the product for each model of appliance.
6. During the operation of the Licence, BO shall ensure that models of all the rated capacity covered in the scope of the licence shall be tested in rotation to the extent possible.

ANNEX B**List of Test Equipment**

Test equipment required to cover the entire test defined in the IS 302-2-7:2024 Standard

S. No.	Test equipment list	Test used in with clause reference
1	Petroleum spirit (n-Hexane), Cloth, Stopwatch	CL 7 (Marking and instruction)
2	Test probe-B, Test Probe-13, Test probe-41, Push-Pull Gauge, Voltmeter	CL8 (Protection against access to live parts)
3	Wattmeter, Ammeter, Voltmeter,	CL 10 (Power Input and current)
4	Digital temp data logger, Steel scale, Voltmeter, ammeter, Wooden test corner, Fine wire thermocouple (wires with a diameter not exceeding 0.3 mm), Stopwatch ,	CL 11 (Heating)
5	Leakage current tester, Voltmeter, stopwatch, HV tester, Humidity chamber, IP test setup, NaCl, Metal foil , Detergent & Rinsing agent (as per Annex AA)	CL 13, CL 15, CL 16 (Leakage current and electric strength at operating temperature, Moisture resistance, Leakage current and electric strength)
6	Wattmeter, Variable voltage supply, Digital temp data logger, HV tester, Metal Foil, Fine wire thermocouple, Stopwatch, Surge test generator,	CL 19 (Abnormal Operation)
7	Inclined plane, Angle Finder, Push-pull gauge, Test probe similar to test probe B(as per cl 20.2), Steel scale, Spring Impact Hammer, vernier caliper, scratch tester, test fingernail(as per Cl. 21.2) , Door Endurance test apparatus, Impact tester, Compression resist tester	CL 20 (Stability and mechanical Hazards), CL 21 (Mechanical Strength) CL 18 (Endurance)
8	Test probe-B, Test probe-13, Test probe-41, Torque meter, Push-pull Gauge, Hot Air Oven, syringe, colored water, Stopwatch, Voltmeter, Multimeter, Vernier Caliper, Iron bars, electrodes, hydrogenated oil, gravy, salt-free butter, fuchsine, methylated spirit, Door Endurance test apparatus	CL 22 (Construction)
9	Flexing Test Apparatus, HV tester, Metal Foil, Stopwatch	CL 23 (Internal Wiring)
10	LCR meter, Endurance test apparatus	CL 24 (Components)

11	Vernier Caliper, weighing balance, Cord grip test apparatus, Stopwatch, Resistance meter, Torque Screw Drivers, HV tester, Metal foil, Cord flexing test apparatus, Push-pull gauge, vernier, slip gauges.	CL 25 (Supply connections and External Flexible Cords), CL 26 (Terminal for external Conductors) CL 28 (Screws and connections), CL 29 (Clearances, Creepage Distances and solid insulation insulation)
12	Earth continuity tester, Dry Film thickness Meter	CL 27 Provision for Earthing
13	Hot Air Oven, Ball pressure test apparatus, Vernier caliper, Glow wire tester, magnifying glass with 20X magnification, Humidity Chamber with Temp and Humidity Controller, Needle flame tester	CL 30 (Resistance to heat and Fire)
14	Humidity Chamber with Temp and Humidity Controller, Measuring Cylinder 500 ml Ammonium Chloride, Carbon Tetrachloride, Distilled Water	CL 31 (Resistance to rusting)
15	Temperature data logger, Fine wire thermocouples, Test Corner	CL 17 (Overload protection of transformers and associated circuits)
16	Impulse voltage test generator and monitor, slip gauges, vernier caliper	CL 14 (Transient Over Voltages)
17	Temperature Indicator	For all clause

Note: The above list is indicative only and may not be treated as exhaustive.

ANNEX C

Scheme of Inspection and Testing

1. 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.

1.1 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility is optional.

1.2 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates where test equipment is required in house i.e “R” or whether it can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

1.3 Large Scale manufacturers (including foreign manufacturers) shall maintain an in-house laboratory, which shall be suitably equipped (as given in column 2 of Table 1) and staffed, 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 test equipment.

Alternatively, in lieu of an in-house laboratory, these manufacturers can also utilize the provisions of Sharing of testing facilities as per the Annexure-X (Relaxation in test facilities) of the guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process)

1.4 Further, 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 as per 1.2 above (guidelines available on BIS website www.bis.gov.in (Under Conformity Assessment>Product Certification Process)).

2. QUALITY ASSURANCE PLAN

2.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Control 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.

2.2 The manufacturers shall define a Quality Control system 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 2.5.

2.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

2.3.1 As mentioned above, recommended levels of control are given in Table 1 for guidance only.

2.3.2 The tests as indicated in Table 1 and at the levels of control in column 3 of Table 1 or the Quality Assurance Plan as submitted by the manufacturer to BIS may be carried out on the whole production of the factory which is covered by this plan and records maintained in accordance with para 2.5.

2.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2.5 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 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 Tumble dryers provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per Cl. 7 of IS 302 (Part 2 / Sec 11): 1994.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on each product and packaging:

- (i) “For BIS certification details please visit www.bis.gov.in”
- (ii) In case tumbler dryer are incorporated in washing machine and the firm is not having licence as per IS 302 (Part 2 / Sec 7), BIS Certification Marks shall therefore be done for “Tumbler dryer” only.

3.3 All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark.

4. HYGIENIC CONDITIONS (if applicable) – NA.

5. REJECTION - 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			
8	Protection Against Electric Shock	8	IS 302-2-11	R	One	Each Appliance
13	High Voltage	13.3.2	IS 302-1	R	One	Each Appliance
27	Provision for earthing	27	IS 302-2-11	R	One	Each Appliance
7	Marking and Instruction	7	IS 302-2-11	R	Firm to have adequate in-process controls to check compliance of this parameter as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity.	
10	Power Input and Current	10	IS 302-2-11	R	One	Once in every three months for each type of model as per Grouping guidelines mentioned at Annex - A of the Product Manual
11	Heating	11	IS 302-2-11	R	One	
13	Leakage current and Electric strength at operating temperature	13	IS 302-2-11	R	One	
15	Moisture Resistance	15	IS 302-2-11	R	One	
16	Leakage current and Electric strength	16	IS 302-2-11	R	One	
14	Transient Overvoltage	14	IS 302-2-11	S	One	Once in every six months for each type of model as per Grouping guidelines mentioned at Annex - A of the Product Manual
17	Overload protection of transformers and associated circuits	17	IS 302-2-11	S	One	
18	Endurance	18	IS 302-2-11	S	One	
19	Abnormal operation	19	IS 302-2-11	S	One	
20	Stability and Mechanical hazards	20	IS 302-2-11	S	One	

21	Mechanical strength	21	IS 302-2-11	S	One	
22	Construction	22	IS 302-2-11	S	One	
23	Internal wiring	23	IS 302-2-11	S	One	
24	Components	24	IS 302-2-11	S	One	----do----
25	Supply connection and external flexible cords	25	IS 302-2-11	S	One	No further testing required, if accompanied with BIS Standard Mark or with Test Certificate Once in every six months for each type of model as per Grouping guidelines mentioned at Annex - A of the Product Manual
26	Terminals for external conductors	26	IS 302-2-11	S	One	
28	Screws and connections	28	IS 302-2-11	S	One	
29	Clearances, Creepage Distances and solid insulation	29	IS 302-2-11	S	One	
30	Resistance to heat and fire	30	IS 302-2-11	S	One	
31	Resistance to rusting	31	IS 302-2-11	S	One	
32	Radiation, Toxicity and Similar Hazards	32	IS 302-2-11	S	One	

ANNEX D

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)