



उत्पाद मैनुअल
आई एस 2997 : 1964 के अनुसार
वायु संवाहक प्रकार के विद्युत पंखे और नियामकों के लिए विनिर्देश

PRODUCT MANUAL
ACCORDING TO IS 2997 : 1964

SPECIFICATION FOR AIR CIRCULATOR TYPE ELECTRIC FANS AND REGULATORS

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.

Note:

1. The product 'Electrical appliance- fans' as per IS 302-2-80 : 2017 is covered under mandatory certification. Therefore, Licence as per IS 302-2-80 : 2017 for the concerned model no.s is a pre-requisite for getting licence for the product as per IS 2997 : 1964.

1.	मानक संख्या IS No.	:	IS 2997 : 1964
	शीर्षक Title	:	SPECIFICATION FOR AIR CIRCULATOR TYPE ELECTRIC FANS AND REGULATORS
	संशोधनों की संख्या No. of amendments	:	3
2.	नमूना दिशानिर्देश Sampling Guidelines:		

a)	कच्चा माल Raw material	:	- Insulation cords as per IS 694 - Capacitors for fan motors as per IS 1709 - Electrical sheets for stampings as per IS 648
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX – A
c)	नमूने का परिमाण Sample Quantity	:	3 Nos.
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	As per Scope of Licence and Appendix A of IS 2997
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 Possible tests in a day:	:	Please refer ANNEX – D
6.	लाइसेंस का दायरा /Scope of the Licence	:	As per below table
Licence is granted to use Standard Mark as per IS 2997:1964 with the following scope:			
	Name of the Product	SPECIFICATION FOR AIR CIRCULATOR TYPE ELECTRIC FANS AND REGULATORS	
	Model No.		
	Rating	____W, ____V, ____Hz, ____Phase	
	Class of Appliance	Class I/II/III	
	Type of insulation	Basic/ Reinforced	
	Insulation Class		
	Size of Fan(mm)	450, 600,750	
	Maximum Height (mm)		

	Degree of protection	Up to & Including IPXX
	Maximum Speed	___ r.p.m.
	Method of mounting	Rigid/ Semi-rigid/ Oscillating/ Double-oscillating or Gyrostatic
	Type of enclosure	Totally Enclosed Type/ Ventilated Type
	Additional Feature(s)	with/ without regulator

ANNEX – A

समूहीकरण दिशानिर्देश Grouping Guidelines

- 1) Manufacturer shall declare the parameters of the AIR CIRCULATOR TYPE ELECTRIC FANS AND REGULATORS as per scope of license with a model no.
- 2) For considering GoL/CSoL, Air Circulator Type Electric Fans and Regulators of the highest fan size and highest height intended to be covered in the licence shall be drawn for testing to cover all the fans with lower or same fan size and lower or same height (as permitted at Table 2 in the IS 2997). Separate sample to be tested for each Class of appliance, each method of mounting, and each type of insulation.
- 3) Further following relaxations are also given:
 - a. If fans with Oscillating mechanism are tested, fans without Oscillating mechanism may also be covered without additional testing subject to condition that all other parameters specified in the scope remain same;
 - b. If fans with regulator are tested, fans without regulator may also be covered without additional testing subject to condition that all other parameters specified in the scope remain same;
 - c. If fans of higher insulation class is tested, then fans with lower insulation class may be covered subject to condition that all other parameters specified in the scope remain same.
 - d. If a fans with a particular degree of protection is tested, fans with lower degrees of protection may also be covered subject to condition that all other parameters specified in the scope remain same;
 - e. If manufacturer covers the scope of fans without regulator in their license, and intends to cover fans with regulator, then only those parameters may be tested which are applicable to fans with regulator, subject to condition that all other parameters specified in the scope remain same.
- 4) Manufacturers shall declare all the model no. of fans intended for grant of licence. The Scope of the License may be restricted based on the Manufacturing capability and Testing facilities of the Manufacturer.
- 5) Further, manufacturer shall provide information as per Appendix A of the Indian Standard.
- 6) During the operation of the License, BO shall ensure that all the varieties covered in the License are tested in rotation to the extent possible.

ANNEX – B

परीक्षण उपकरणों की सूची **List Of Test Equipment**

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Major test equipment required to test as per the Indian Standard

Sl. No.	Test used in with clause reference	Test equipment list
1.	Cl. 18 (Marking)	Petroleum spirit, Cloth
2.	Cl. 19.14 (Protection against Electric Shock)	Voltmeter, Finger Test Apparatus
3.	Cl. 19.3 (Temperature Rise)	Test Corner consisting of dull- black painted plywood, Temperature Controller
4.	Cl. 19.8 (Leakage Current)	IR Meter, Micro ammeter, HV Tester, Stopwatch
5.	Cl. 19.4 (Moisture Resistance)	Humidity Test Chamber, Counter Meter,
6.	Cl. 19.5 (Cord grip test)	Cord Grip Test Apparatus, Measuring Tape, Micro ohmmeter
7.	Cl. 19.11 (Earthing Connection)	Earth Contact Resistance Testing Panel (ECR Measurement), Voltmeter, Ammeter, Wattmeter
8.	Cl. 19.2 (Air Delivery)	Test Chamber, Tachometer, Power Factor Meter, Anemometer
9.	Cl. 19.12 (Electrical Input)	Multi test Panel
10.	General	Air Conditiner, Temperature Indicator

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

ANNEX – C

निरीक्षण और परीक्षण की स्कीम

Scheme Of Inspection And Testing

1. QUALITY ASSURANCE PLAN:

1.1 It is expected that during operation of BIS licence, manufacturers will implement a Quality Assurance Plan (QAP) 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.

1.2 The manufacturers shall define a Quality Assurance Plan (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: **All AIR CIRCULATOR TYPE ELECTRIC FANS AND REGULATORS of same model number manufactured in a day, shall constitute a control unit.**

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan.

2. ENSURING COMPLIANCE THROUGH TESTING- Manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognised/empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025.

2.1 TEST RECORDS- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the

product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. **MARKING** - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly each AIR CIRCULATOR TYPE ELECTRIC FANS AND REGULATORS and also on its packaging (wherever applicable) provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the IS 2997 : 1964.

3.2 Additional Marking requirements: Additionally, the following shall also be marked on product or package or both:

- a) "For BIS certification details please visit www.bis.gov.in";

4. **REJECTION** - The production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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
(ONLY FOR GUIDANCE PURPOSE)

(1)				(3)		
Test Details				Levels of Control		
Cl.	Requirement	Test Methods		No. of Sample	Frequency	Remarks
		Clause	Reference			
8	Design and General Construction	8	IS 2997	Each consignment of components received	Further testing is not required if supplied with BIS Standard Mark or with Test certificate, which ever applicable Firm should exercise adequate control so that whole production should meet the requirements. Records shall be maintained	
18	Marking	18	IS 2997			
8.17	Stability	8.17	IS 2997			
8.18	Finish	8.18	IS 2997			
9	Height of Fan	9	IS 2997			
10	Speed Regulators	10	IS 2997			
11	Starting	11	IS 2997			
15	Oscillating Mechanism	15	IS 2997			
19.9	High Voltage	19.9	IS 2997	One	Each Control unit	
19.10	Insulation Resistance Test	19.10	IS 2997	One	Each Control unit	

19.11	Earth Continuity Test	19.11	IS 2997	One	Each Control unit	
19.12	Electrical Input Test	19.12	IS 2997	One	Each Control unit	
19.13	Measurement of Fan Speed	19.13	IS 2997	One	Each Control unit	
19.2	Air Delivery	19.2	IS 2997	One	Each model of AIR CIRCULATOR TYPE ELECTRIC FANS AND REGULATORS manufactured in the period of six months	
19.3	Temperature-Rise of Fan Motor and Regulator	19.3	IS 2997	One		
19.4	Moisture Proofness Test	19.4	IS 2997	One		
19.5	Cord Grip Test	19.5	IS 2997	One		
19.6	Mechanical Endurance for Regulator only	19.6	IS 2997	One		
19.7	Power Factor Test	19.7	IS 2997	One		
19.8	AC leakage Test	19.8	IS 2997	One		

ANNEX – D

एक दिन में संभावित परीक्षण Possible Tests in a day

1. Earth Continuity test (A-1 of IS 302-1, 19.11 Of IS 2997:1964)
2. Electric strength test (A-2 of IS 302-1)
3. Starting (Cl. 11);
4. Marking (Cl. 18);
5. Air Delivery (Cl. 19.2)
6. Temperature-rise (Cl. 19.3);
7. Cord grip Test (Cl. 19.5)
8. AC leakage test (Cl. 19.8)
9. High Voltage (Cl. 19.9)
10. Insulation Resistance (Cl. 19.10)
11. Electrical Input (Cl. 19.12)
12. Fan speed and input (Cl. 19.13);