



उत्पाद मैनुअल
आई एस 11329: 2018 के अनुसार
कमरे मे एयर कंडीशनर के लिए फिन्ड प्रकार के हीट एक्सचेंजर के लिए

दस्तावेज संख्या - पी एम/आई एस 11329/7/जून 2026

भारतीय मानक ब्यूरो की स्कीम-I (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिशिष्ट की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज का उपयोग किया जा सकता है।

**PRODUCT MANUAL FOR
FINNED TYPE HEAT EXCHANGER FOR ROOM AIR CONDITIONER
ACCORDING to IS 11329:2018**

Document No.- PM/IS 11329/7/June 2026

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 licence/certificate.

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1.	Product	:	IS 11329: 2018
	Title	:	Finned Type Heat Exchanger for Room Air Conditioner
	No. of Amendments	:	Five
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl. 5 of IS 11329
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	One
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – <u>C</u>
5.	Possible tests in a day :		
	(i) Visual Inspection		
	(ii) Assembly leakage test		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 11329 with the following scope:		
	Name of the product	Finned Type Heat Exchanger for Room Air Conditioner	
	Type	1) Fin pack with collar and tube type, Tube material- Copper/Aluminium, Fin material - Aluminium 2) Micro channel tube with continuous fin type	

ANNEX A

Grouping Guidelines

1. The following parameters are taken into consideration for evolving the grouping guidelines for certification of Finned type heat exchangers for room air conditioners as per IS 11329: 2018
 - Classification based upon construction:
 - a) Fin pack with collar and tube type
 - b) Micro channel tube with continuous fin type
 - Classification based upon material of Tube:
 - a) Copper
 - b) Aluminium
2. Any variety of heat exchanger from each classification shall be tested to cover the entire range of variety from that classification.

However, separate sample for each material of tube used shall be tested considering the classification based on tube material. Manufacturer shall declare the material used for tube.
3. Manufacturer shall declare the varieties of Heat exchanger intended to be covered in scope. Manufacturer shall also declare the grades of brazing alloy used and submit the evidence of conformity of the same.
4. The scope of license may be restricted based on manufacturing and testing capabilities of the manufacturer.
5. During the operation of license, it shall be ensured that all varieties covered in the license are tested in rotation, to the extent possible.

ANNEX B**List of Test Equipment**

Indicative list of major test equipment required to test as per the Indian Standard

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Construction, Cl 6.2	Plug gauge, Vernier Caliper
2.	Internal Contamination, Cl 7.1.1	Glass Beaker, Conical Flask, Oven (0-110° C), Balance with resolution 0.0001 g, Paper filter
3.	Leak test, Cl 7.2	(As applicable for the test method chosen) Vacuum chamber, Nitrogen Gas cylinder, Helium gas cylinder, Probe, dry nitrogen/air source
4.	Burst test, Cl. 7.3.1	Pressure gauge
5.	Fatigue strength test, Cl 7.3.2	Fatigue strength test assembly
6.	Corrosion Resistance test, Cl 7.4	Apparatus as per IS 9844

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

ANNEX C**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 in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.2 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. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

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

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. PACKING, LABELLING AND MARKING – As per the requirement of IS 11329:2018. The Standard Mark, as given in the Schedule of the licence, shall be marked on each Heat Exchanger, provided always that the product thus marked conforms to all the requirement of the specification.

In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place on product or package as follows: “For details of BIS certification 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(Recommended levels of control- For guidance only)

(1)				(2)		
Test Details				Levels of Control		
Cl.	Requirement	Test Method		No. of Sample	Frequency	Remarks
		Clause	Reference			
5	Materials	5.1, 5.2, 5.3, 6.2.1.5 Annex B Annex C Annex D	IS 11329 IS 10773 IS 737 IS 2927 ISO 17672	One	Each consignment	No further testing is required, if accompanied with test certificate or is ISI marked.
6.2	Construction	6.2	IS 11329	Firm should exercise adequate control so that whole production should meet the requirements. Records shall be maintained.		
9.1	Type tests					
7.1.1	Internal Contamination	7.1.1	IS 11329	One	Once in a Week	
7.3	Test for Mechanical Strength	7.3	IS 11329	One	Once in a Year for each type	
7.4	Test for Corrosion Resistance	7.4	IS 11329 IS 9844	One	Once in a Year	
9.2	Routine tests					
6.1	Visual inspection	6.1	IS 11329	Each unit, Conformity shall be established as per Internal quality management system of the licensee		
7.2	Leak test	7.2.1, 7.2.2, 7.2.3	IS 11329	Each Unit. Also see “Note” below Cl. 9.2 of IS 11329		