



उत्पाद मैनुअल
आई एस 3118: 1978 के अनुसार
विद्युत बैक्टेरिऑजिकल इन्क्यूबेटर्स
दस्तावेज संख्या - पी एम/आई एस 3118/1/जनवरी 2021

भारतीय मानक ब्यूरो की स्कीम-1 (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता 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
ELECTRIC BACTERIOLOGICAL INCUBATORS
ACCORDING to IS 3118: 1978

Document No.- PM/IS 3118/1/January 2021

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 3118: 1978
	Title	:	Electric Bacteriological Incubators
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl.4 of IS 3118
b)	Grouping guidelines	:	Please refer ANNEX- A
c)	Sample Size	:	One incubator
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:	:	All test except Temperature variation test as per Cl. 7.2
6.	Scope of the Licence:	:	
	“Licence is granted to use Standard Mark as per IS 3118: 1978 with the following scope:		
	Name of the product	Electric Bacteriological Incubators	
	Voltage Rating	AC/ DC ____ volts.	
	Load rating (kW)		

ANNEX A

Grouping Guidelines

1. For the purpose of GoL/CSoL, classification as given below shall be considered:
 - Voltage Rating:
 - AC, 240 V
 - DC, 230V or 240 V
2. Considering the above, Incubator of highest load rating for each voltage rating shall be tested to cover all load ratings up to and including the load rating tested for that particular voltage rating.
3. The Firm shall declare the varieties of Incubators they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities 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.	Tests used in with clause reference	Test Equipment(s)
1.	Protection Against Electric Shock (Cl. 6.1)	Test probe with multimeter
2.	Electric Insulation (Cl. 6.2)	Metal foil, Leakage Current Tester, Isolation transformer, HV test supply, Network as per relevant fig. of IS 302-1
3.	Stability (Cl. 6.3)	Inclined plane, masses, force gauges, test probe similar to test probe B of IS 1401 with circular stop face 50 mm Ø, Stop plate, test rod
4.	Mechanical Strength (Cl. 6.4)	Spring hammer, Hardened steel pin, Force gauges
5.	Supply Connections (Cl. 6.5)	Flexing test apparatus, Cord anchorage force & torque tester, Cold chamber
6.	Terminals (Cl. 6.6)	Torque screwdriver
7.	Earthing (Cl. 6.7)	Earth continuity tester
8.	Screws and Connections (Cl. 6.8)	Torque gauge
9.	Resistance to Rusting (Cl. 6.9)	Humidity Chamber with Temp and Humidity Controller Measuring Cylinder 500 ml Ammonium Chloride, Carbon Tetrachloride, Distilled Water
10.	Heating up Time (Cl. 7.1)	Thermometer, Stop watch.
11.	Temperature variation (Cl. 7.2)	Long stem thermometer of mercury-in glass type, thermocouple/thermistor, Stop watch.
12.	High Voltage test (Cl. 9.2).	HV tester.

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 requirement of IS 3118.

4. CONTROL UNIT - All Incubators manufactured in a week 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.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

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 Required (R) or Sub-contracting permitted (S)	Levels of Control		
Cl.	Requirement	Test Method			No. of samples	Frequency	Remarks
		Clause	Reference				
4	Material	4.1	IS 3118	S	one	Each consignment	Please see Note 1
5	Construction						
	General	5.1	IS 3118	-	Each Incubator		-
	Cabinet	5.2	IS 3118	-	Each Incubator		-
	Water Jacket	5.3					-
	Heating Element	5.4					-
	Thermostat	5.5					-
	Thermometer	5.6					-
6	General and Safety Requirement						
	Stability	6.3	IS 3118	R	One	Each control unit	Please see Note 2
	Mechanical Strength	6.4		S	One	Every 5 th control unit	Please see Note 4
	Supply Connections	6.5		R	One	Each control unit	Please see Note 2
	Terminals	6.6			Each Incubator		-
	Earthing	6.7					
	Screws and	6.8	IS 3118	R	One	Each control	Please see Note 2

	Connections					unit	
	Resistance to Rusting	6.9					Please see Note 3
7	Performance Requirements						
7.1	Heating up Time	7.1	IS 3118	R	Each Incubator		-
7.2	Temperature variation	7.2, 9.2.4 to 9.2.8			One	Every 5 th control unit	Please see Note 4
	Routine Test						
	Visual Examination and Inspection	9.2.1	IS 3118	-	Each Incubator	-	
	Protection against Electric Shock	Table 1		R		-	
	High Voltage	Table 1				-	
	Insulation resistance	9.2.2 & Table 1				-	
	Leakage Current	Table 1				-	
	Earthing connection	Table 1				-	
	Type Test						
	Performance test for thermostats	9.2.3 & Table 1	IS 3118	S	Three	Each lot	Please see Note 4

Note-1: The Component parts used in the assembly and construction shall conform to the relevant Indian Standards wherever they exist. Raw materials which are covered under mandatory certification of BIS shall be ISI marked and received along with manufacturer's test certificate. For other materials, no further testing is required if received with test certificate or ISI marked.

Note-2: In case of failure, all the incubators in the control unit shall be tested and those not passing shall be rejected. Twice the number of samples shall be tested in the subsequent control units for these requirements till five consecutive control units pass, the original frequency may then be restored.

Note-3: In case of failure twice the original number of samples from the control unit shall be tested and the control unit shall be accepted only if there is no failure.

Note-4: In case of failure the marking shall be suspended. Necessary corrective actions shall be taken. Marking and frequency of testing shall only be resumed when five incubators from the improved production show conformity to the requirements.

Note-5: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-6: Levels of control given in column 3 are 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.