PRODUCT MANUAL
FOR PLANT PROTECTION AND VECTOR CONTROL EQUIPMENT – FOGGING MACHINES PART 1 PULSE-JET-TYPE THERMAL FOGGER ACCORDING TO IS 14855 (Part 1) : 2000

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.

1.	**Product**	:	IS 14855(Part 1) : 2000
	Title	:	Plant Protection and Vector Control Equipment – Fogging Machines Part 1 Pulse-Jet-Type Thermal Fogger
	No. of Amendments	:	Nil
2.	**Sampling Guidelines:**		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	NA
c)	Sample Size	:	One fogging machine along with spare parts, operation and maintenance manual and specification sheet.
3.	**List of Test Equipment**	:	Please refer ANNEX - A
4.	**Scheme of Inspection and Testing**	:	Please refer ANNEX - B
5.	**Possible tests in a day :**		
	(i) General (ii) Pesticide Tank (iii) Metering System (iv) Mounting Frame and Strap (v) Straps		
6.	**Scope of the Licence :**		
	"Licence is granted to use Standard Mark as per IS 14855 (Part 1) : 2000 with the following scope:		
	Name of the product	:	Plant Protection and Vector Control Equipment – Fogging Machines Part 1 Pulse-Jet-Type Thermal Fogger
	Any other aspect required as per the standard	:	Hand Carried or Vehicle mounted pulse-jet-type thermal fogger.

ANNEX-A

TO PRODUCT MANUAL FOR PLANT PROTECTION AND VECTOR CONTROL EQUIPMENT – FOGGING MACHINES-SPECIFICATION PART 1 PULSE-JET-TYPE THERMAL FOGGER ACCORDING TO IS 14855 (Part 1) : 2000

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

Sl No.	Tests used in with Clause Reference	Test Equipment
1.	Constructional requirements Cl 5 (5.1 to 5.7)	Pressure pump-capable of providing pressure of 30 kPa to 50 kPa or 8 kPa to 10kPa, Pressure Gauges, Dry and wet thermometer, Gap Analyzer, Stop watch, Vernier caliper, Ruler, Measuring tape, Digital and Analog Multimeter, T Square, Screw gauge, Leak chamber, kerosene, xylene, toluene, Thermometer, Tachometer, Set of Graduated plastic Measuring cylinder, Weighing balance.
2.	Performance requirements Cl 6 Cl 6.1 Engine Cl 6.2 Nozzle (Annex C of IS 14855 Part 1) Cl 6.3 Field Performance and durability (Annex A of IS 14855 Part 1)	Viscometer (Analog), Kerosene, stop watch, Measuring cylinder, Noise level meter, Beaker 100 ml,200 ml,500 ml. Kerosene, Beaker 100 ml,200 ml,500 ml, Compound microscope, Slide Holder, Magnesium Ribbon, Drop Test Stand with weights, Magnesium Ribbon Burning Chamber. Beaker 100 ml,200 ml,500 ml, weight equivalent to the maximum operational weight of the hand carried pulse-jet-type thermal fogger, Anemometer.

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

ANNEX B

SCHEME OF INSPECTION AND TESTING FOR PLANT PROTECTION AND VECTOR CONTROL EQUIPMENT – FOGGING MACHINES PART 1 PULSE-JET-TYPE THERMAL FOGGER ACCORDING TO IS 14855 (Part 1) : 2000

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- The Standard Mark as given in Schedule of the licence shall be stenciled/printed with indelible ink on each machine or printed on the labels applied to the machine, as the case may be, provided always that the machine to which the mark is thus applied conforms to every requirement of the specification.

3.1 Marking – The appropriate parts of the thermal fogger shall be indelibly marked with the information mentioned under clause 9.1 of Indian Standard IS 14855 (Part 1). In addition, the following details shall be mentioned on each machine legibly and indelibly:

a) BIS Licence No. CM/L_____.
b) BIS website details i.e – "For details of BIS Certification please visit www.bis.gov.in"

3.2 The manufacturer shall also make available to the user, together with the fogging machine, the specifications of machine consisting of the items listed in the data sheets given in Annex-B of IS 14855 (Part 1).

3.3 The manufacturer shall also make available to the user, together with the fogging machine, a list of spare parts illustrated and coded as specified in clause 7.1 of IS 14855 (Part 1), and Operational and Maintenance Manual that include the details as specified in clause 7.2 of IS 14855 (Part 1).

4. CONTROL UNIT – For the purpose of this scheme, all the fogging machine of the same type, i.e. hand carried or vehicle mounted pulse-jet-type, assembled in one day shall constitute a control unit.

NOTE 1: The control unit number assigned to a particular control unit shall be such that it shall be possible to trace back the manufacturing details of each competent from the factory records.

NOTE 2: Manufacturing details shall mean shift-wise production details of each component including mould number, quantities produced, accepted and rejected.

5. LEVELS OF CONTROL – The tests as indicated in Table-1 and at levels of control specified therein, shall be carried out on the whole production of the factory covered by this scheme and appropriate records be maintained in accordance with clause 2 above.

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

5.2 On the basis of test and inspection results, a decision regarding conformity or otherwise of control unit with the requirements of the specification shall be taken.

5.2.1 A sample shall be taken from each control unit and tested for all requirements of the specification. In case sample(s) fail in one or more requirement(s) of the specification, the control unit represented by the sample(s) shall not be marked. The control unit may be suitably reprocessed/replaced, as the case may be, and defect(s) rectified. Two samples drawn from such reprocessed control unit shall be tested for conformity to all the requirement of the specification.

6. RAW MATERIAL – The material for the construction of different components of the pulse-jet-type thermal fogging machine shall conform to the requirements stipulated in the clause 4.0 and 8.1 of IS 14855 (Part 1).

6.1 The material used for different components shall be declared by the manufacturer in the parts catalogue.

7. 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
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				**Test equipment requirement R:required (or) S: Sub-contracting permitted**	**Levels of Control**		
Clause	**Requirements**	**Test Method**			**No. of Samples**	**Frequency**	**Remarks**
		Clause	**Reference**				
4	Material	8.1	IS 14855 (Pt-1)	S	One	Each Consignment	Tests may be carried out in the factory OR TC from supplier may also be accepted
5	Constructional Requirements						
5.1	General	5.1.1 to 5.1.7	IS 14855 (Pt-1)	R	Each Machine	Every Machine	See Clause 5 of SIT
5.2	Pump	5.2	-do-	R	One	Every Control Unit	-do-
5.3	Pulse-Jet Engine	5.3	-do-	R	-do-	-do-	-do-
5.4	Fuel Tank	5.4	-do-	R	-do-	-do-	-do-
5.5	Pesticide Tank	5.5	-do-	R	-do-	-do-	-do-
5.6	Metering System	5.6	-do-	R	-do-	-do-	-do-
5.7	Mounting Frame and Straps	5.7 & 5.7.1	-do-	R	-do-	-do-	-do-
6	Performance Requirements						
6.1	Engine	8.2	IS 14855 (Pt-1)	R	One	Every Control unit	-do-

6.1 (a)	Fuel Consumption	8.2.1	-do-	R	One	Every Control unit	-do-
6.1 (b)	Ability of the engine to operate for not less than one hour of fogging without the need to refuel	8.2.1	-do-	R	-do-	-do-	-do-
6.1 (c)	Noise Level	8.2.2	-do-	R	-do-	-do-	-do-
6.1 (d)	Durability	8.2.3	-do-	S	-do-	Once in six months	-do-
6.2.1	Nozzle Throughput	8.3.1	-do-	S	-do-	Once in three months	-do-
6.2.2	Droplet Size	8.3.2	-do-	S	-do-	Once in three months	-do-
6.3	Field Performance and Durability	Annex-A	-do-	S	-do-	Once in six months	-do-
7	Other Requirements	7.1, 7.2 and 7.3	-do-	R	Each Machine	Every Machine	See Clause 3.2 and 3.3 of SIT
8.4	Strap Test	8.4	-do-	R	One	Every Control unit	See Clause 5 of SIT

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-2: Levels of control given in column 3 are only 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.