उत्पाद मानुयल

रेस्पिरेटरी प्रोटेक्टिव डिवाइसेस – पावर्ड फ़िल्टरिंग डिवाइस हेलमेट या हुड

विशिष्टि सम्मिलित

IS 19089: 2025 के अनुसार

PRODUCT MANUAL FOR
Respiratory Protective Devices — Powered Filtering Devices Incorporating a Helmet or Hood — Specification According to IS 19089: 2025

भारतीय मानक ब्यूरो -विनियम की स्कीम (अनुरूपता मूल्यांकन)I के तहत यह उत्पाद मानुयल प्रमाणीकरण के प्रचलन मे रीति और पारदर्शिता के सुसंगता सुनिश्चित करने के लिए सभी क्षेत्रीय शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारासंदर्भ सामग्री के रूप मे उपयोग किया जाएगा। बीआईएस लाइसेन्सप्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

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.	**उत्पाद** **Product**	:	IS 19089: 2025
	शीर्षक **Title**	:	Respiratory Protective Devices — Powered Filtering Devices Incorporating a Helmet or Hood — Specification
	संशोधन संख्या **No. of amendments**	:	0
2.	**नमुनाकरण दिशा निर्देश** **Sampling Guidelines**		-
a)	**कच्चा माल** **Raw material**	:	Material shall comply to the requirements of Cl 7.1 Note: This section indicates the requirements for raw material (if specified in the IS)for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.
b)	**समूहिकरण दिशा निर्देश** **Grouping Guidelines**	:	Please refer Annexure - A
c)	**नमूने का परिमाण** **Sample Size**	:	2 devices, 3 filters for each aerosols, 4 filters for each gas

d)	**परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर** **Parameters to be Declared in Test Request**	:	1. **Face piece** 2. Additional protection (optional) 3. Turbo unit 4. Intrinsically safe for use in potentially explosive atmospheres 5. Range of temperature and Humidity 6. Protection capacity (Filter) 7. Exhalation Means 8. Minimum design flow rate and its design duration 9. Designation Note: This section indicates declared values to be specified against a parameter (to be specified in Test Requests) to enable testing of sample against the requirement and determine its conformity. Any other requirements/parameters may also be declared as per the standard, as applicable.
3.	**परीक्षण उपकरणो की सूची List of Test Equipment**	:	Please refer Annexure - B
4.	**निरीक्षण व परीक्षण स्कीम** **Scheme of Inspection and Testing**	:	Please refer Annexure - C
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day**	:	Complete testing is not available in any lab and has to be carried out in the Factory requiring **4 days of** visit. Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies(OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.
6.	**लाइसेन्स का कार्यक्षेत्र** **Scope of the Licence :**		
	IS19089 : 2025 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्रके लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 19089 : 2025 with the following scope:		
	Name of the product	Powered Filtering Devices Incorporating a Helmet or Hood	
	Face piece	Hooded/non hooded	
	Additional protection (optional)	a) For head (IS 2925) b) For eye or face (IS 8521 (Part 1))- with/without protection against non-ionizing radiation)	
	Turbo unit	Integral/not integral (with helmet or hood)	
	Intrinsically safe for use in potentially explosive atmospheres	Claimed/ not claimed	
	Range of temperature and Humidity		

	Minimum design flow rate and its design duration	
	Exhalation Means	*Fitted/not fitted*
	Protection capacity (Filter)	1. Single filter/Multiple filter 2. Particle Filter a) solid and/or liquid aerosols b) single/Multiple shift use (reusable) 3. Gas filter (if applicable) a) Gas filter type and class (with name of gas against which protection is provided) 4. Combined filter (if applicable)- scope of Particle filter and Gas filter as given at 2 & 3 above are to be specified
	Designation	Powered filtering device/Standard No/(Class) (type) (options) ThyGaszP (for example, TH3A2P), where y = 1, 2 or 3 for Class of equipment; z = 1, 2 or 3 for class of gas filter; and Gas = one or more of the types of gas filter For example: Powered filtering device/ IS 19089/ TH2A2P SL

ANNEX-A
GROUPING GUIDELINES

1. For considering Grant of License / Change of Scope of License, the following grouping Guidelines shall be followed:

A. Respiratory Protective Devices

i. Each Face piece type, each humidity and temperature range of equipment, each Minimum design flow rate (and its design duration) each class of equipment, exhalation means (with and without), turbo unit (integral and not integral) and safe for use in potentially explosive atmospheres (claimed and not claimed) shall be tested to cover in the scope of Licence.
ii. If equipment with Additional protection is tested, equipment without Additional protection may also be covered across all varieties.

B. Protection capacity (Filter)

i. Both type of particle filter, solid & water-based aerosols (S) and solid & liquid aerosols (SL) shall be tested separately to be covered in the scope of licence. Combined filter to be tested separately to cover in the scope of licence. Both single and Multiple shift use (reusable) filters shall be tested separately to cover in the scope of licence
ii. Each gas filter type is to be tested for all applicable gases and all classes under the type to cover in the scope of Licence.
iii. Single filter and Multiple filter are to be tested separately for each filter (particle, gas or combined) type and each class to cover the single/multiple filter for that filter type and class in the scope of licence.

3. The Firm shall declare the Varieties of Respiratory Protective Equipment and filter intended to cover in the Licence

4. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the manufacturer.

5. During the operation of Licence, it shall be ensured that all the varieties covered in the Licence are tested in rotation, to the extent possible

ANNEXURE B

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl No.	Test Used in with Clause Reference	Test equipment
1.	Clause 7.2 Resistance to Temperature	Temperature Humidity Chamber
2.	Clause 7.3.1 Helmet & Hoods (Optional)	i) Applicable test equipment as per IS 8521(Part 1) ii) Applicable test equipment as per IS 2925
3.	Clause 7.3.3 Visor	Field of Vision Headforms, Apertometer, Visual field score plotting chart, arrangement for ambient conditions protection against certain type of non-ionizing radiation iii) apparatus as per 8521 (Part 1), ISO 16321
4.	Clause 7.4 Inward Leakage	Test panel of ten clean shaven person selected as per the criteria given in IS 17274 (Part 1). - Test agents Sulphur Hexafluoride (SF6)/ Sodium chloride aerosol (NaCl),Test agent generator, Detection system Inward leakage enclosure/ chamber Treadmill Arrangement for the ambient conditions for testing as per IS 17274 (Part 1).
5.	Clause 7.5 Breathing Resistance	Breathing Machine • Support for the RPD, • Pressure gauge and recording device, • ambient conditions for testing as per IS 17274 (Part 2) and Ambient temperature and ambient atmospheric pressure measuring equipment.
6.	Clause 7.6 Air Supply	Test arrangement as per Cl 8.7 including- Dummy head or torso, Suction or blower with Control means, Flow meter (calibrated from 50 l/min to 500 l/min.), Micro manometer (capable of detecting a pressure difference of ± 0.01 mbar), Stop watch, Light weight plastics bag
7.	Clause 7.8 Clogging	Dolomite clogging test equipment as per IS 15322 Breathing machine, DRB 4/15 grade dolomite.
8.	Clause 7.9 Electrical Components	Practical performance test setup: Hopper 1.5 m height, small basket with 12 mm chipping
9.	Clause 7.10 Breathing Hose	Resistance to collapse of Breathing hose setup as per Cl 8.9.2 2 Circular plates 100 mm diameter, Force gauge
10.	Clause 7.10 Strength of hose and couplings	Apparatus as per Cl 8.10, stop watch
11.	Clause 7.11 Filters	Sodium chloride particle filtering efficiency equipment , Paraffin oil particle filtering efficiency equipment as per 7.2.2 & 7.2.3 IS 17274 (Part 3) Mechanical strength test equipment as per Cl 8.11 (Clause 6.8 IS 17274 Part 6) Gas test bench setup, Flow meters, Thermo hygrometer For protection capacity of A, B, E, & K filters: Class A: Cyclohexane vapour analyser Class B: Chlorine (Cl_2), Hydrogen sulphide (H_2S), & Hydrogen cyanide (HCN) gas analysers Class E: SO2 gas analyser Class K: Ammonia (NH3) gas analyser

		For Special Filters: Type NOP Nitric oxide(NO) gas analyser Type Nitrogen dioxide(NO2) gas analyser Type HgP Mercury vapour(Hg) gas analyser For AX Filters Dimethyl ether (CH3-O-CH3) analyser Isobutane (C4H10) analyser
12.	Clause 7.12 Noise Level	Microphone, Sound level meter Type 1 or Type 2 as specified in IS 15575 (Part 1)
13.	Clause 7.13 Carbon Dioxide Content of the Inhalation Air	Dummy head, Breathing Machine, Carbon dioxide analyser (as per IS 17274 (Part 9)), standard head/torso Exhalation and inhalation reservoirs CO_2 Analyzer CO_2 Absorber CO_2 Cylinder CO_2 Flow meter
14.	Clause 7.14 Resistance to Flame	Metallic dummy head, Test rig as per 6.2.4.2 of IS 17274 (part 10), propane cylinder with flow control device, pressure gauge, flashback arrester, specimen support, rotation motor with speed controller, timer, and burner
15.	Clause 7.15 Exhalation Means	Flow meter (calibrated from 50 l/min to 500 l/min.), Force gauge Stop watch Strength of Housing of Exhalation Means- arrangement for applying a tensile force as per Cl 7.15.6
16.	Clause 7.16 Mass	Weighing balance
17.	Clause 7.17 Practical Performance	Practical performance testing set up as per IS 17274 (Part 7) with test conditions as per 19089, Sound level meter, Thermo hygrometer, stop watch

ANNEXURE C

SCHEME OF INSPECTION AND TESTING

1. **QUALITY ASSURANCE PLAN**

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

1.2. The manufacturers shall define a Quality Assurance Plan 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 2.4.

1.3. RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1. For the guidance of manufacturers, the recommended definition of control unit is the entire quantity of the respiratory protective devices of one variety assembled in a day.

1.3.2. For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1.

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

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

2. **ENSURING COMPLIANCE THROUGH TESTING-** Manufacturers (licensees/applicants) shall 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.

2.1. For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as "R" or other tests which can be subcontracted as "S". Subcontracting is permitted to BIS recognized/empaneled laboratory or any other laboratory accredited as per ISO/IEC 17025.

2.2. TEST RECORDS- The manufacturers shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empaneled laboratory or any other laboratory having valid accreditation as per 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 the Respiratory Protective Device, provided always that the device so marked conforms to each requirement of the specification.

3.1. Packing and Marking shall be done as per the Indian Standard.

3.2. Additional Marking requirements: The Respiratory Protective Device or package of the device shall also be marked with the following:

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

4. **REJECTION -** All 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)				*(2)*	*(3)*		
Test Details				***Test equipment requirement R: required (or) S: Subcontracting permitted***	***Levels of Control***		
Cl.	***Requirement***	***Test Method***			***No. of Sample***	***Frequency***	***Remarks***
		Clause	***Reference***				
7.1	Materials						
	General	8.2	IS 19089	Firm to have adequate in- process controls to check compliance of this parameter given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity			
	Compatibility with Skin	**8.2**					
	Cleaning and Disinfection	8.2 and 8.3.5.16.		R	One	Once a month	
	Surface finish	**8.2**		Firm to have adequate in- process controls to check compliance of this parameter given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity			
7.2	Resistance to temperature	8.1, 8.2	IS 19089	R	One	Once a month	
7.3	Helmets and hoods General	8.2, 8.3, 8.4 8.5, 8.16	IS 19080	Firm to have adequate in- process controls to check compliance of this parameter given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity			
	Additional protection (If applicable)		IS 8521-1/IS 2925	S	one	Each batch	If the device is intended to provide additional protection for head, eye or face, against possible risks, it shall comply with relevant requirements of applicable national standards covering related protectors. (for example, IS 8521 (Part 1) and IS 2925). In such cases no testing is required if the devices (helmet, etc) are

							ISI marked
	Head harness	8.2, 8.3, 8.16	IS 19089	R	One	Once in a month	If fitted
	Visor	8.3, 8.16	IS 19089	R	One	Once in a month	
	Field of vision	8.4	IS 19089	R	One	Once in a month	
	Protection against non-ionizing radiation	-	IS 8521 (Part 1), IS 16321	S	Each consignment		1. If applicable 2. No testing required if accompanied with Test Certificate from material manufacturer/supplier
7.4	Inward leakage	8.3, ~~8.17~~	IS 19089/17274 (Part 1)	R	One	Once in a month	
7.5	Breathing resistance	8.6	IS 19089/17274 (Part 2)	R	One	Each Control Unit	
7.6	Air supply	8.2, 8.3, 8.7 8.16	IS 19089/17274 (Part 8)	R	One	Once in a month	
7.7	Checking and warning Facilities	8.2, 8.16	IS 19089	R	One	Once in a month	
7.8	Clogging	8.8	IS 19089/IS 15322	R	One	Once in a month	
7.9	Electrical components	8.2, 8.16	IS 19089	R	One	Once in a month	
	intrinsically safe for use in potentially explosive atmospheres	-	IS IEC 60079(Part 0) and (Part 11)	S	Each consignment		3. If applicable 4. No testing required if accompanied with Test Certificate from material manufacturer/supplier

7.10	Breathing hose	8.3, 8.9 8.10, 8.16	IS 19089	R	One	Once in a month	
7.11	Filters						-
	construction	8.2	IS 19089	Firm to have adequate in- process controls to check compliance of this parameter given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity			
	Material	-	IS 19089	S	Each consignment		Conformity may be established through material manufacturers/supplier's certificate
	Mechanical Strength	8.11	IS 19089	R	One	Each control unit	
	Protection efficiency/capacity	8.12	IS 19089	R	One	Each control unit	
7.12	Noise Level	8.13	IS 19089	R	One	Each control unit	
7.13	Carbon dioxide content of inhalation air	8.14	IS 19089/17274 (Part 9)	R	One	Once a month	
7.14	Resistance to flame	8.15	IS 19089/17274 (Part 10)	R	One	Each control unit	
7.15	Exhalation means	8.2, 8.3, 8.6 8.7, 810	IS 19089	R	One	Once in a month	If applicable
7.16	Mass		IS 19089	R	One	Each equipment	
7.17	Practical performance	8.16	IS 19089/17274 (Part 7)	R	one	Once in a month	