

Technical Specifications and Trial Directives of BA Set with Spare cylinder

SN	Technical Specifications	Trial Directives
1.	a) General: - A Breathing Set with spare cylinder (or SCBA) is personal protective equipment designed to provide respiratory protection in CBRN environments where the air quality is compromised by hazardous CBRN materials. It is used by rescuers where the presence of hazardous gases, smoke, or lack of oxygen poses a significant threat to human health. The Breathing Set with spare cylinder (or SCBA) comprises a full-face mask, a high-pressure cylinder containing compressed breathing air, a regulator, and other associated components. The face-mask protects from inhalation of harmful substances. The high-pressure tank stores breathable air and the regulator control the flow and pressure of the air supplied to the user. Breathing Apparatus set must be holding EN 137 Type 2 / BIS 10245 (Part 2): 2023.	BOO to check EN 137 type 2/ BIS 10245 Part 2: 2023 for BA Set from Govt accredited/NABL-approved lab/ International lab Certificate/Lab test report must cover the following components: - 1. Air Cylinder 2. Pressure Gauge 3. Pressure reducer 4. Back Plate and Body Harness 5. Face Mask (EN 136/ 137 type 2/ BIS 10245 Part 2: 2023/ 14166) 6. Demand Valve 7. Hoses
2.	Air Cylinder: a) Cylinder shall be corrosion and impact resistant and made of Aluminium Cylinder/ Carbon composites with Aluminium alloy liner/ Carbon composites with PET liner. b) Volume of the cylinder: - Volume 6.8 Litre Can be charged at 300 bars pressure. Air cylinder can hold sufficient quantity of air (Not less than 1800 Litters) for providing 45 minutes' total working duration c) The cylinder shall be provided with standard flow valve.	a), b) & c) BOO to check OEM certificate against the requirements outlined in the specifications. d) BOO to check the certificates from Chief Controller Explosive / PESO approval for cylinder. e) BOO to physically check the parameter.

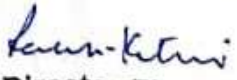

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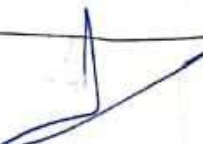

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	d) The cylinder shall be duly approved by the Chief Controller Explosive / PESO shall be capable of withstanding a minimum hydraulic testing pressure of 450 bars. e) One spare cylinder with each BA set.	
3.	Pressure reducer: This shall be so designed so as to meet the air demand at a stable pressure on the outfit with inlet pressure varying from 300 bars to 20 bars.	BOO to physically check the reading of the pressure gauge.
4.	Pressure gauge: Digital cum Analogue Pressure Gauge in which digital gauge should indicate time of usage. Features of the Pressure Gauge a) Pressure gauge part should work independently of the Alarm Cum Signalling Unit. In case of non-functioning of Digital Unit, pressure gauge should give warning in case of low air pressure. b) The gauge shall be connected to pressure reducer through non-metallic rubber hose. c) The integrated control unit shall be mounted on the shoulder of the wearer in a way that it is readable to the wearer conveniently.	a) BOO to check OEM certificate against the requirements outlined in the specifications. b) & c) BOO to physically check the parameter. Additionally, BOO to check ATEX/ PESO/Chief Controller Explosive / IECEX approval for the Digital Pressure Gauge.
5.	a) Warning System: Distress Signal Unit system (either integrated with Digital Pressure gauge or separate) for the purpose of alarm in case there is no movement by rescuer. b) Warning Whistle: Shall be automatic in operation giving audible alarm of in case of low cylinder pressure in the range of 55 +/-5 Bar.	a) & b) BOO to physically check the parameter.

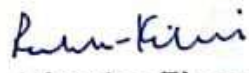

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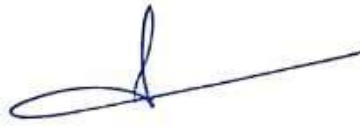

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6. Back Plate and body harness: - (a) Back plate should be made of non - metallic, antistatic material. (b) Material should be impact resistant, chemical & fire-resistant. (c) Body harness should be with adequate padding. (d) The body harness shall be safe for carrying load of the BA Set.	a) & b) BOO to check OEM certificate for the parameter. c) & d) BOO to physically check the parameters.
7. Face Mask: - a) The facemask to be made of flame-resistant material and seal on the should be designed to prevent the leakage. b) It should have a wide-angle panoramic visive (Min 120°) visor which shall be self-de-misting type. c) In facemask, all components shall be easily accessible for easy maintenance and cleaning. d) Firms to provide facemasks in universal sizes as per EN/BIS standards that would fit in all shapes and sizes of faces whether small, medium or large. e) The face mask should have: - i) Compatible communication system (e.g. Bone conduction mic etc.) or an in-built communication system in mask. ii) Communication system shall have a separate PTT button for ease of operation. iii) Communication system should produce clear voice at both ends.	For Mask- a) BOO to check the OEM certificate for the parameters. b) BOO to check the OEM certificate for the parameters. c) BOO to physically check the parameters. d) BOO to physically check the parameters & OEM certificate. e) For Communication system: - BOO to check ATEX/ PESO/ Chief Controller Explosive/ IECEX approval for the Communication system.

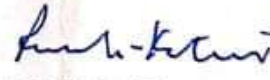

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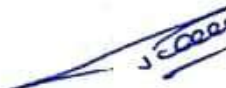

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8.	Demand Valve: a) The lung operated demand valve design shall either be tilting diaphragm type or piston type. b) The demand valve shall be detachable type. c) The demand valve shall be rated for minimum 500 LPM airflow and shall activate with the first breath.	a) BOO to check the OEM certificate for the parameters. b) BOO to physically check the parameters. c) BOO to check the OEM certificate for the parameters.
9.	Hoses: a) Hoses shall be flexible. b) Hose should withstand 30 bar air pressure. c) Hose secured to the back plate so as not to obstruct the movement of the wearer.	a) BOO to physically check the parameter. b) BOO to check the OEM certificate for the parameters. c) BOO to physically check the parameter.
10.	"Y" Manifold for additional connections: This set shall have provision through suitably placed "Y" manifold to facilitate receiving air from a different source (For e.g. Airline trolley)	BOO to physically check the parameter.
11.	Weight: The weight of the ready to use set shall not be more than 14 kgs.	BOO to physically measure the weight of equipment.
12.	Guarantee/ warranty/ Service support: - 01 Year warranty + 09 Year Service support	BOO to check the Undertaking of the guarantee/ warranty provided by the Firm/OEM.
13.	Manuals: - User Operation Manual/Technical Manual to be provided with the equipment.	BOO to physically check the manuals and literatures as mentioned in the specifications.

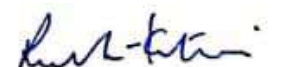

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