

**APPENDIX-A****SPECIFICATION OF POSITIVE PRESSURE SELF CONTAINED COMPRESSED AIR BREATHING APPARATUS SET CONFIRMING TO BIS-10245 PART-II 1994 & EN-137.**

Automatic Positive pressure self contained compressed air breathing apparatus set for 45 minutes of working duration & 10 minutes safety margin having antistatic back plate made of high strength carbon fiber, having high degree chemical impact resistance , Harness easy for fitting and removal , pressure reducer valve , an automatic positive pressure demand valve , cylinder straps with comlock arrangement ,warning whistle , pressure gauge with luminous dial calibrated, face mask with double reflex face seal , replaceable visor , speech transmitter and expiratory valve. The main valve of the cylinder of Cap 06 Litre shall be spring loaded to avoid any accidental closing. The Breathing Apparatus set confirming to BIS: 10245 Part-2:1994 & EN-137. The cylinder and valve duly certified by Chief Controller of Explosive, Nagpur. The complete set shall be packed in FRP Box.

**1. Standard:**

Approved to EN-137-1986 & BIS: 10245 Part-2:1994

**2. Cylinder and valve assembly:**

Construction : Cr-MO Steel Cylinder approved by CCE

Water capacity : 6 liters

Charging press : 300 bar

Duration : 45 minutes

Cylinder mouth should be covered with Cylinder Blank to prevent accidents due to accidental opening of Cylinder Valve. The cylinder valve should comply with Para 5.2.15.2 of IS: 10245 Part-2 :1994

**3. Warning Device:**

Self-actuating medium pressure driven warning whistle unit, integrated into the fully luminescent pressure gauge for snag resistant streamlined handling.

The warning whistle must activate automatically at a residual cylinder pressure of 50+/-5 bar to alert the wearer.

The warning whistle should be positioned on the shoulder in front of the user & close to the ear of the user so that he can recognize his warning whistle while working in a group. The warning device should comply with Para 5.2.14 of IS: 10245 Part-2:1994

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4. **Full Face Piece Assembly:**

Construction- EPDM  
Double reflex sealing  
Polycarbonate Lens  
5-strap head harness  
Secure and comfortable fit  
Wide field of vision  
Spring loaded expiratory valve  
Speech diaphragm of good voice transmission mounted on facemask  
Easy & quick fitting plug-in connection to Lung Demand Valve  
It should feature an inner mask to minimize CO2 build up.  
The face piece should comply with Para 5.2.8 of IS: 10245 Part-2:1994

5. **Lung Demand Valve:**

Balanced Piston Design, stable, quiet operation & first breath activated.  
The demand valve should be very easy to connect to facemask (by a push in mechanism) and should be capable of delivering up to 500 lpm of air.  
It should be compact and easy to service and it should be possible to switch off air supply to mask by pressing a centrally located switch off button.  
It should be encased in a tough wrap around silicone cover incorporated in a streamlined shape for easy handling-even when wearing gloves.  
A lung demand valve retainer should be provided on the waist belt to plug-on the Lung Demand Valve when the set is not being used to prevent dust etc. from entering the Lung Demand Valve.

6. **Back plate Assembly:**

Orthopaedically designed back plate moulded from glass-filled polyamide with carbon fiber for resilience & strength, following the natural contours of the back & attached securely to the waist belt assembly ensuring the weight of the apparatus is concentrated on the hips- thereby reducing back strain, stress & fatigue.  
High degree of chemical, heat & flame resistant, anti static, impact resistant, lightweight and water resistant incorporating moulded carrying handles without compromising comfort.  
Polypropylene webbing harness (easily replaceable – no rivets or welding).  
Harness should pass through the back plate to give proper fit & should not be fixed on back plate by buckles as this creates uneven weight distribution and can damage the backbone of the user.  
Cylinder strap capable of accommodating all common cylinder configurations to twin 6 liter cylinders with a failsafe self-locking cylinder clamp-cam lock type locking mechanism.  
The materials used for harness & waist belt should be carefully chosen to provide greatest possible chemical & wear resistance, including a high proportion of Kevlar, Nomex & other aramid materials.  
The back plate should have a rubber boot at the bottom end to absorb impacts and prevent damage.



An anti-vibration strap should be provided to prevent accidental opening of cylinder knob from back plate in transit.

7. **Pressure Reducer:**

Small, light, sturdy & encapsulated pressure reducer with high air delivery (enough for 2 users).

It should be compact to prevent damage and should be capable of delivering up to 1000 lpm of air if required.

It should have a safety relief valve to release excess pressure in the demand valve hose in case of emergency.

The Pressure reducer should comply with Para 5.2.16 of IS: 10245 Part-2

8. **Pressure Gauge:**

The pressure gauge should be connected to the pressure reducer by a high-pressure rubber hose (non-metallic outer surface) to prevent sparks and injuries due to sharp edges.

The pressure gauge should have a luminescent dial for easy reading in the dark and should be enclosed in a rubber covering to prevent damage.

The pressure gauge should be integrated into the fully luminescent pressure gauge without requiring any additional manifold for snag resistant streamlined handling.

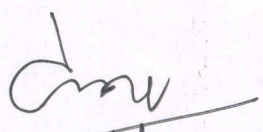
The Pressure gauge should comply with Para 5.2.13 of IS: 10245 Part-2 :1994

9. **Hoses:**

The hoses should not have any metallic outer cover to prevent sparks due to friction and injury due to sharp edges.

10. **Carrying Case:**

Each set should be supplied properly in moulded LLDP carrying case tailor made for the set so that all components fit in proper space within the box.

  
ASSTT.COMMANDANT/FIRE  
CISF Unit BHEL Hardwar

APPENDIX-BTERMS & CONDITIONS

- i) All parts of B.A set should be confirming with **BIS & DGS & D approved**
- ii) The vendors must produce copy of previous supply order, manufacturing/dealership certificate and performance test report with their offer.
- iii) The cylinder and its valve should be approved by Chief Controller of Explosive Nagpur & their certificate from CCE Nagpur.
- iv) The vendors shall be supplied guarantee & testing certificate alongwith material.
- iv) The Pre- dispatch inspection & testing as per relevant specification will be carried out at firm site & final acceptance at BHEL Hardwar Store site.

  
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