

Defence and Law Enforcement (UNSPSC : 46)

Personal Safety and Protection (UNSPSC:4618)

Respiratory Protection UNSPSC: (461820)

Fire Breathing Apparatus (SCBA-IS 10245 Part-2) UNSPSC: 46182004

S No	Parameters	Value 1	Value 2	Value 3	Value 4	Value 5	Validation	Unit	Remarks	
GENERIC										
1	Conformity to Indian/ International Standrad	IS10245(Part2) latest for OPEN CIRCUIT BREATHING APPARATUS								M
2	Self-contained open circuit compressed air breathing apparatus	Compressed air carried in cylinder/cylinders is fed either via pressure reducer and lung governed demand valve or lung governed demand valve connected to the facepiece to enable the wearer to breathe Exhaled air passes through the non-return valve to the atmosphere.								M
3	Type of open circuit Breathing Appratus (effective air volume at a pressure of 1 bar absolute at a temperature of 20°C)	Capacity - Type 1 - 600 litres (minimum)	Capacity Type 2 - 800 litres (minimum)	Capacity - Type 3 - 1200 litres (minimum)	Capacity -Type 4 - 1600 litres (minimum)	Capacity - Type 5 - 2000 litres (minimum)			G	
4	Safe working duration including 10 minutes safety margin						TBD	minutes	M	
CONSTRUCTION										
1	Robust in Design	Sufficiently robust to withstand the rough usage it is likely to receive in service and designed so that it will continue to function satisfactorily, while temporarily, accidentally submerged in water at a maximum depth of one metre and thereafter until the air in the cylinder is exhausted.								M
2	The apparatus shall be so designed that no parts or sharp edges are likely to be caught on projections in narrow passages	yes								M
3	The apparatus shall be so designed that the wearer can remove it and while still wearing the facepiece, continue to breathe air from the apparatus	yes								M
4	Designed to ensure its full function in any orientation	yes								M

5	The main valve(s) of the air cylinder(s) shall be arranged so, that the wearer can operate them while wearing the apparatus	yes					M
6	The apparatus shall be so designed and constructed as to prevent ingress of the external atmosphere within the limit set out	yes					M
Material and Components							
1	Head Harness	Complete as per clause 5.2.9 of IS 10245 Part 2					M
2	Body Harness	Complete as per clause 5.2.10 of IS 10245 Part 2					M
3	Face Mask	reverted edge seal type and made of flame resistant material conforming to IS: 14166 latest. The reflex seal on the outer mask shall be so designed so as to facemask to reduce dead space, speech transmitter for clear voice reproduction and a wide angle panoramic vision visor made of Polycarbonate material and shall be self - de- misting type. The head straps shall be easy to tighten and quick to release.					M
4	Lung Governed Demand Valve	Complete as per clause 5.2.12 of IS 10245 Part 2					M
5	Types of Pressure Gauge	Bourdon pressure gauge with luminescent dial analog type	Digital Pressure gauge	Digital cum Mechanical Pressure Gauge			F
6	Pressure Gauge Compliance	Complete as per clause 5.2.13 of IS 10245 Part 2					M
7	Flexible Hoses and Tubes	Complete as per clause 5.2.11 of IS 10245 Part 2					M
8	Warning Whistle	fitted either on the back plate or provided along with the pressure gauge assembly and shall be automatic in operation giving audible alarm of minimum 90 dB intensity at 1 meter distance of low cylinder pressure in the range of 50+ 5 Bar					M
9	Air Cylinder	The air cylinder shall comply with appropriate national regulations. The cylinder shall be approved with respect to the appropriate filling pressure.					M

10	Air Cylinder material (Non Corrosive Type)	aluminum alloy	Alloy steel	Carbon Composite with Aluminum alloy Liner	Carbon Composite with PET Liner			G
11	Total weight of the ready to use set	10 ≤N≤18					Kg	TBD
12	Approval of Cylinder from Chief Controller of Explosives, Nagpur	yes						M
13	PESO Approval Type for Cylinder	Type 1	Type 2	Type 3	Type 4			F
14	Hydrostatic Pressure Test for Breathing Apparatus Cylinder	Cylinder of adequate water capacity for 45 minutes effective duration at filling pressure not exceeding 300 bar duly hydro-tested to 1.5 times of filling pressure						M
15	High Pressure Parts	Metallic high pressure tubes, valves and coupling shall be capable of withstanding a test pressure twice the maximum filling pressure or 50 percent of the maximum filling pressure. Nonmetallic parts shall be capable of withstanding a test pressure twice the maximum filling pressure of the cylinder.						M
16	It shall not be possible to fit a low pressure tube or hose directly to a high pressure part of the circuit	Yes						M
17	All other requirements as per clause 5 of IS 10245 Part 2 regarding design and material	yes						M
18	Cylinder Valve	The cylinder valve shall be such as to ensure safe performance. The valve shall be so designed that the valve spindle cannot be completely unscrewed from the assembly during normal operation of the valve.						M
19	Valve Design	designed so that a minimum two turns of the handwheel are required to open fully the valve.						M
20	Lockable Type valve in open position	yes						M
21	Apparatus fitted with more than 2 cylinders may be fitted with individual valve in the cylinder	yes						M

22	Cylinder valve connection (valve outlet)	It shall not be possible to connect apparatus with a higher maximum filling pressure (e.g. 300 bar) to an apparatus which is designed only for a-lower maximum filling pressure (e.g. 200 bar).							M
23	Pressure Reducer	Complete as per clause 5.2.16 of IS 10245 Part 2							M
24	Second-Man Attachment	yes	No						F
25	Carrying Case	<p>a) A standard strong carrying case to store complete assembled BA set along with BA cylinder should be provided. It should be designed in such a way that all parts of the assembled set could be placed in its proper position.</p> <p>b) A black colour plastic bag to avoid deterioration due to the effect of ultra violet light and also to prevent mask being contaminated by oil, fuel, dust etc. It will be used to cover the face mask and then store it in the carrying case.</p>							M
26	Workmanship and Finish	It is essential that the standard of workmanship and finish of all parts is such that replacement parts can be supplied and that they will fit correctly and without difficulty. Exposed metal parts would have a finish which can be kept up without the use of metal polish or any other special preparation							M
27	Tools	Tools necessary for routine testing and servicing must be provided with each set along with one kit of consumable spares							M
28	Instruction Book	An instruction book in English, for the guidance of the user including both operating and normal maintenance procedure must be supplied. The book must include an itemized and illustrated spare parts list, giving reference numbers to all parts.							M
29	Training	The supplier shall provide training to selected staff / Officer for operation and maintenance of BA set.							M
30	Spares	Supplier shall ensure availability and supply of fast moving spares at short notice for at least five years. The supplier shall provide a price list of such spares along with commercial bid.							M
PERFORMANCE									
1	Water Capacity of Breathing Apparatus Cylinder	4.7	6	6.8	8	9		litres	G

		10	12						
2	Charging Pressure	200 to 250 Bars		251 to 300			Bars	G	
3	Air Capacity of Breathing Apparatus after charging					TBD	litres	M	
4	Storage and Performance Temperature	The apparatus shall operate trouble-free within the temperature range - 30°C to + 60°C						M	
5	Protection Against Particulate Matter	Yes						M	
6	Practical Performance Test	Complete as per clause 5.10 of IS 10245 Part 2						M	
CERTIFICATION									
1	ISI Marked to IS 10245 (part 2)	Yes						M	
2	CM/L NO							M	
3	Complete System to be tested to prove conformity of declared parameters as per IS-10245 (Pt -2) latest from any ILAC/NABL accredited/Central Govt Lab	Yes						M	
4	Test Report Number							M	
5	Test Report Date							M	
6	Name of the Lab where test Conducted							M	
7	Test Reports to be furnished to the buyer on demand	Yes						M	
8	Any other certification/markings on complete set (like CE/ UL/ FM/ NFPA/ etc)							TBD	M
9	Warranty / Guaranty	1	2	3	5		year	G	
10	Service warranty at consignee end	5		10		15	year	F	