



# 3M™ Scott™ Air-Pak™ X3 Pro SCBA NFPA 1981/1982, 2018 Edition

**DASTEC S.R.L.**  
 Representantes / Distribuidores Autorizados  
 Argentina  
 Tel: (+54 11) 5352 2500  
 Email: info@dastecsr.com.ar  
 Web: www.dastecsr.com.ar

## General Self-Contained Breathing Apparatus Requirements

The purpose of this bid specification is to establish the minimum requirements for an open-circuit self-contained breathing apparatus (SCBA). The SCBA shall consist of the following major sub-assemblies: (1) full facepiece assembly; (2) a removable, facepiece-mounted, positive pressure breathing regulator with airsaver switch; (3) an automatic dual path redundant pressure-reducing regulator; (4) end-of-service time indicators; (5) a harness and backframe assembly for supporting the equipment on the body of the wearer; (6) a shoulder strap mounted, remote gauge indicating cylinder pressure; (7) a rapid intervention crew/universal air connection (RIC/UAC); and (8) cylinder and valve assembly for storing breathing air under pressure.

The successful bidder agrees to provide, at their own expense, a factory trained instructor for such time as the respirator user shall require complete instruction in the operation and maintenance of the respirator. Any exceptions to these specifications must be detailed in a separate attachment. Failure to do so will automatically disqualify the bidder.

The successful bidder must be a sales distributor, authorized by the manufacturer, to sell the equipment specified herein. A signed document from the manufacture confirming this must be included with the bid. The SCBA shall maintain all NIOSH standards with any of the following types of cylinders listed as provided by the SCBA manufacturer.

	Product:		
Regulatory Approvals	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The SCBA shall be approved to NIOSH 42 CFR, Part 84 for chemical, biological, radiological and nuclear protection (CBRN).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The SCBA shall be compliant to the NFPA 1981, 2018 Edition, Standard on Open-Circuit Self-Contained Breathing Apparatus for Emergency Services.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The SCBA shall be compliant to the NFPA 1982, 2018 Edition (if including optional PASS Device), Standard on Personal Alert Safety Systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is to include an optional integrated self-rescue device, the device shall be compliant to the NFPA 1983, 2017 Edition, Standard on Life Safety Rope and Equipment for Emergency Services.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>All electronic components shall be approved for Intrinsic Safety under UL 913 Class I, Groups C and D, Class II, Groups E, F and G, Hazardous locations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
Required Components	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The facepiece shall have a large diameter inlet serving as the female half of a quarter (1/4) turn coupling which mates with the positive pressure breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece shall be approved for use with multiple respiratory applications to enable the same user to switch from one application to another without the use of tools and without doffing the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The full facepiece assembly shall fit persons of varying facial shapes and sizes with minimal visual interference.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The full facepiece assembly shall be available in three sizes marked "S" for small, "M" for Medium and "L" for large.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The facepiece sizes shall be easily identifiable through a color-coding scheme.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece assembly, including head harness, shall be latex free.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece series shall have a face seal that is secured to the lens by a U-shaped channel frame that is retained to the lens using two fasteners.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The face seal shall be a reverse reflex design for enhanced fit and comfort.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece shall contain inhalation valves that are readily visible to enable quick visual inspection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The lens shall be a single, replaceable, modified cone configuration constructed of a non-shatter type polycarbonate material.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>In accordance with NIOSH 42 CFR part 84, the facepiece meets penetration and impact requirements, including compliance with ANSI Z87.1 – 2010.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The lens shall have a coating to resist abrasion and chemical attack and meet the requirements of NFPA-1981 for lens abrasion.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The lens shall have an internal anti-fog coating to reduce fogging of the lens.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Multi-directional voicemitters shall be mounted on both sides of the facepiece and ducted directly to an integral silicone nose cup to enhance voice transmission.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece assembly shall be able to incorporate multiple electronic communications options (amplification, radio interface, wireless, etc) without affecting NIOSH approvals or NFPA/CBRN approvals where applicable.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece shall enable the installation of communications bracket on either the right or left side.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The head harness shall be available in a five-point suspension made in the fashion of a net hood to minimize interference between securing of the facepiece and the wearing of head protection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The head harness shall be available in a five-strap and four-strap configuration.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The head harness shall be constructed of a para-aramid material for fire, first responder and CBRN applications.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The head harness shall include either a positioning strap or an integrated handle to assist with donning of the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Two flame resistant elastic straps, attached to the face seal in four locations, shall provide adjustment for proper face sealing.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Product:</b>		
<b>Mask-Mounted Regulator</b>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The facepiece-mounted positive pressure-breathing regulator shall supply and maintain air to the facepiece to satisfy the needs of the user at a pressure greater than atmospheric by no more than 1.5 inches of water pressure static.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall maintain positive pressure during flows of up to 500 standard liters per minute.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall also meet or exceed a dynamic flow requirement of remaining positive while supplying a minute volume of 160 liters.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The breathing regulator shall have attached a low pressure hose which shall be threaded through the left shoulder strap to couple to the pressure-reducing regulator mounted on the backframe.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>An optional breathing regulator with a inline quick connect coupling shall be available for use with the optional outlet manifold and accessory hose to allow the breathing regulator to be disconnected from the unit and reconnected to the auxiliary hose of a second unit in the event rescue is required.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The optional quick connect coupling shall be easily connected and disconnected by trained individuals with a gloved hand and/or in low light conditions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The optional quick connect coupling shall not allow the air hose to be connected without the HUD Connection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The optional coupling shall also be guarded against inadvertent disconnect during use of the equipment.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The low-pressure hose shall be equipped with a swivel attachment at the facepiece mounted breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall connect to the facepiece by way of a quarter (1/4) turn coupling.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The user shall hear an audible sound when the breathing regulator is attached correctly to the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall be equipped with a doughnut-shaped gasket which provides a seal against the mating surface of the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator cover shall be fabricated of a flame resistant, high impact plastic.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall have a demand valve to deliver air to the user, activated by a diaphragm responsive to respiration.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The demand valve shall use an extended temperature range dynamic O-ring seal composed of a fluorosilicone elastomer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The diaphragm shall include the system exhalation valve and shall be constructed from a high strength butyl elastomer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A purge valve shall be situated at the inlet of the breathing regulator and shall be capable of delivering airflow of between 125 and 225 standard liters per minute.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall be designed to direct the incoming air through a spray bar and over the inner surface of the facepiece lens for defogging purposes.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The components of the breathing regulator shall be constructed of materials that are not vulnerable to corrosion.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The flame resistant cover shall contain an air saver switch and pressure demand bias mechanism.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall reactivate and supply air only in the positive pressure mode when the wearer affects a face seal and inhales.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This device shall not affect the breathing flow through the system while in operation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Product:</b>		
<b><i>Pressure Reducer with Snap-Change Cylinder Connection</i></b>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall be mounted at the waist on the backframe and be coupled to the cylinder valve through a patented stainless steel quick connect snout for engagement and sealing within the cylinder valve outlet.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The cylinder shall be secured to the pressure-reducing regulator with two pull-rings 180° from each other.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A stainless steel rod shall secure each of the pull-rings to prevent removal of the cylinder while the SCBA is pressurized.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The stainless steel rods shall be actuated when the cylinder is opened and when cylinder pressure is above 30 psig.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>In lieu of a manual by-pass, the pressure-reducing regulator shall include a back-up pressure-reducing valve connected in parallel with the primary pressure-reducing valve and an automatic transfer valve for redundant control.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The back-up pressure-reducing valve shall also be the means of activating the low-pressure alarm devices in the facepiece-mounted breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This warning shall denote a switch from the primary reducing valve to the back-up reducing valve whether from a malfunction of the primary reducing valve or from low cylinder supply pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A press-to-test valve shall be included to allow functional testing of the back-up reducing valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall have extended temperature range dynamic O-ring seals composed of fluorosilicone elastomer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall have incorporated a reseatable over-pressurization relief valve which shall prevent the attached low pressure hose and facepiece-mounted breathing regulator from being subjected to high pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Product:</b>			
<b><i>Pressure Reducer with CGA Cylinder Connection</i></b>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall be mounted at the waist on the backframe and be coupled to the cylinder valve through a short length of internally armored high pressure hose with a hand coupling for engagement and sealing within the cylinder valve outlet.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>In lieu of a manual by-pass, the pressure-reducing regulator shall include a back-up pressure-reducing valve connected in parallel with the primary pressure-reducing valve and an automatic transfer valve for redundant control.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The back-up pressure-reducing valve shall also be the means of activating the low-pressure alarm devices in the facepiece-mounted breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This warning shall denote a switch from the primary reducing valve to the back-up reducing valve whether from a malfunction of the primary reducing valve or from low cylinder supply pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A press-to-test valve shall be included to allow functional testing of the back-up reducing valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall have extended temperature range dynamic O-ring seals composed of fluorosilicone elastomer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall have incorporated a reseatable over-pressurization relief valve which shall prevent the attached low pressure hose and facepiece-mounted breathing regulator from being subjected to high pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Product:</b>			
<b><i>End-of-Service Time Indicator (EOSTI)</i></b>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The SCBA shall have two end-of-service time indicators (EOSTI). A tactile alarm and a Heads-Up Display (HUD).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The primary EOSTI shall be the integral low-pressure alarm device that shall combine an audible alarm with simultaneous vibration of the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The primary EOSTI shall be located in the facepiece-mounted positive pressure breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This alarm device shall indicate either low cylinder pressure (35% +/- 2%) or a malfunction of the primary pressure-reducing valve (first stage regulator).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The HUD shall serve as the secondary EOSTI.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The HUD shall be powered by the SCBA's single power supply.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>It shall be mounted in the user's field of vision on the facepiece-mounted positive pressure breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>It shall display cylinder pressure in increments of 100%, 75%, 50% and 35%.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The display shall not have a numerical representation of bottle pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>At full cylinder pressure, two green Light Emitting Diodes (LED) shall be illuminated.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>At three-quarter cylinder pressure, one green LED shall be illuminated.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>At one-half cylinder pressure, one "yellow" LED shall be illuminated and flash at a rate not to exceed one (1x) time per second.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>At one-third cylinder pressure, one "red" LED shall be illuminated and flash at a rate not to exceed ten (10x) times per second.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The HUD shall have a low battery indication that is distinct and distinguishable from the bottle pressure indications.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Product:</b>		
<b><i>Harness and Backframe Assembly</i></b>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>A lightweight, lumbar support style backframe and harness assembly shall be used to carry the cylinder and valve assembly and the pressure-reducing regulator assembly.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall be a solid, one-piece black powder-coated aluminum alloy frame that is contoured to follow the shape of the user's back.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall include a shroud to streamline hose and wire management by minimizing exposure of the low pressure hose and electronics molded cable.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall include a mounting for the pressure reducing regulator located at the waist.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall include an over-the-center, adjustable tri-slide fixture, a para-aramid strap and a double-locking latch assembly to secure 30, 45, 60, or 75 minute cylinders.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall include a mounting area suitable for installation of a distress alarm integrated with the SCBA.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The mounting area shall permit installation of a distress alarm sensor module in an area between the pressure reducer and the backframe.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall include a waist pad and shoulder pads constructed of an outer shell material and incorporating a closedcell foam design to help minimize water absorption.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall incorporate parachute-type, quickrelease buckles with an integrated bail to help secure the webbing. Optional spring (alligator) clips shall also be available.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall consist of a one size black para-aramid strap with two red stripes along the outer edges and a reflective stripe in the center for enhanced visibility.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall include a seat-belt type waist belt attachment.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall include box-stitched construction with no screws or bolts.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The harness assembly shall be removable from the backframe without the use of tools.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall be machine washable to help with exposure reduction.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall accommodate a waist belt extension.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist pad shall be attached to the backframe such that movement by the wearer provides natural articulation. Articulation shall be accomplished without the use of mechanical devices.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist pad and belt shall freely wrap around and conform to the wearers' hips.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The shoulder harness shall be fitted with a Drag Rescue Loop (DRL) capable of being deployed in an emergency situation to drag a downed firefighter to safety.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The Drag Rescue Loop (DRL) shall be sewn into the shoulder harness assembly and shall provide a horizontal pull strength of 1000 lbs.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The Drag Rescue Loop (DRL) shall be stored in a manner to prevent accidental snag, but maintain accessibility with gloved hands.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The shoulder harness shall be attached to the backframe such that the harness presents itself for ease of donning.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The shoulder harness shall include reflective material to enhance the visibility of the wearer in low-light conditions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The shoulder harness shall accommodate two distinct positions for a chest strap attachment.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The shoulder harness shall accommodate a mounting clip for attachment of a handheld radio remote speaker microphone.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Product:</b>		
<i>Rapid Intervention Crew / Universal Air Connection (RIC/UAC)</i>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The SCBA shall incorporate a RIC/UAC fitting to be compliant with the 2018 edition of the NFPA 1981 Self-Contained Breathing Apparatus standard.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC shall be an integral part of the pressure reducer and protected by the backframe.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC inlet connection shall be within 4" (4-inches) of the tip of the CGA threads of the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC shall consist of a connection for attaching a high-pressure air source and a self-resetting relief valve allowing a higher pressure than that of the SCBA to be attached to the SCBA.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The self-resetting relief valve shall be color-coded to identify pressure rating of the SCBA.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC shall have a check valve to prevent the loss of air when the high-pressure air source has been disconnected.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Cylinder	Product:		
	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The cylinder threads shall be straight with an O-ring or quad-ring gasket type seal.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder valve shall be a “fail open” type, constructed of forged aluminum and designed such that no stem packing or packing gland nuts are required.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>It shall contain an upper and lower seat such that the pressure will seal the stem on the upperseat, thus preventing leakage past the stem.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>No adjustment shall be necessary during the life of the valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is equipped with a CGA cylinder connection, the cylinder valve outlet shall be a modification of the Compressed Gas Association (CGA) standard threaded connection number 346 for breathing air for 2216 and CGA 347 for 4500 and 5500 systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is equipped with a Snap-Change Cylinder connection, the cylinder valve shall be designed with a patented stainless steel quick connect snout that delivers air directly to the first stage pressure-reducing regulator. The quick connect snout shall be an integral part of the cylinder valve, rather than an adapter that threads onto the CGA fitting.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is equipped with a Snap-Change Cylinder connection, the cylinder valve shall be offered with a CGA 346 or CGA 347 fitting for the purposes of filling the cylinder only.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is equipped with a Snap-Change Cylinder connection, the fill fitting shall have a check valve to prevent flow from the cylinder.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is equipped with a Snap-Change Cylinder connection, the fill fitting shall be provided with a dust cover to protect threads from damage and prevent interior surfaces from being contaminated when not in use.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is equipped with a Snap-Change Cylinder connection, the dust cover shall be retained to the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Each cylinder valve shall consist of the following: 1) a hand activated valve mechanism with a spring-loaded, positive action, ratchet type safety lock and lock-out release for selecting “lock open service” or “non-lock open service”; 2) an upstream connected frangible disc safety relief device; 3) a dual reading pressure gauge indicating cylinder pressure at all times; 4) an elastomeric bumper; 5) an angled outlet.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder valve shall have an RFID tag molded into the elastomeric bumper with a universal RFID marking embossment.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RFID tag shall be capable of storing product specific information, including serial number, manufacture date, hydrostatic test date, pressure rating, life expectancy, and fill logs.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The SCBA shall maintain all NIOSH and NFPA standards with any of the following types of cylinders listed as provided by the SCBA manufacturer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>Aluminum</i>			
<ul style="list-style-type: none"> <li>The cylinder shall be manufactured in accordance with DOT specifications and meet the Transport Canada requirements with a working pressure of 2216 psig.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be made of an aluminum alloy.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be available in a 30-minute duration based on the NIOSH breathing rate of 40 liters per minute (lpm).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Carbon-Wrapped</i>			
<ul style="list-style-type: none"> <li>The cylinder shall be manufactured in accordance with DOT specifications and meet the Transport Canada requirements with working pressures of 2216, 4500, or 5500 psig.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be lightweight, composite type cylinder consisting of an aluminum alloy inner shell, with a total overwrap of carbon fiber, fiberglass and an epoxy resin.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall have a 2D barcode located under the protective gel coat programmed with the following information, at a minimum: serial number, manufacture date, and hydrostatic test date.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be available in a 30-minute, 45-minute, 60-minute or 75 minute duration based on the NIOSH breathing rate of 40 liters per minute (lpm).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be available in an approved 30-year life design as defined by the DOT Special Permit 14232.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Product:</b>		
<i>Warranty</i>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The unit shall be covered by a warranty providing protection against defects in materials and workmanship.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This warranty period shall be for as long as the SCBA is owned by the original purchaser.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This warranty shall not require a registration in order to activate.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This warranty shall not be contingent upon completing mandatory overhaul or recommended preventative maintenance.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Product:</b>		
<i>Personal Alert Safety System with Firefighter Locator</i>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The PASS Device shall be compliant to the NFPA 1982, 2018 Edition Standard on Personal Alert Safety Systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Operation of this distress alarm shall be initiated with the opening of the valve of an SCBA charged cylinder.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall feature a “hands-free” re-set capability that may be activated by means of a slight movement of the SCBA when the system is in a pre-alarm mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall operate from a single power source-containing six “AA” batteries.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



<ul style="list-style-type: none"> <li>The battery life of the SCBA with PASS only shall be no less than 200 hours.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall have a battery check function that provides an LED indication of battery status while the SCBA is not pressurized.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is manually activated, the locator system shall immediately emit a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is activated due to lack of motion, the locator system shall have a ten second delay prior to emitting a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall utilize a 2.4 GHz signal to provide the best path to a “downed” firefighter.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The locating system shall be programmable with eight alphanumeric characters to provide identification information.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The PASS device shall contain two components: a Console and a Sensor Module.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS device goes into pre-alarm, the user shall be notified through a distinct light pattern in the breathing regulator-mounted HUD display.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Console</i>			
<ul style="list-style-type: none"> <li>The console shall be located on the user’s right shoulder harness.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain an integral edge lit mechanical pressure gauge that is automatically turned on by opening the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall display to the user the following: Pre-Alarm: alternating red flashing LED’s; Full Alarm: dual flashing red LED’s and a flashing PASS icon; Low Battery: red flashing LED’s; Normal System Operation: flashing green LED.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain a photo sensing diode that automatically adjusts the brightness of the HUD as the ambient lighting conditions change.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain an integrated RFID tag.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain push buttons for user interface.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The push buttons shall be designed to minimize accidental activation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A yellow color-coded push button shall permit system re-set.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A red color-coded push button shall permit manual activation of the full alarm mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall be equipped with a LED “External HUD” allowing others to determine the wearer’s cylinder pressure through the same color-code scheme as the breathing regulator-mounted HUD.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A green LED shall be illuminated across the gauge face to indicate a cylinder with greater than half cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A yellow LED shall be illuminated across the gauge face to indicate a cylinder with less than half cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A red LED shall be illuminated across the gauge face to indicate a cylinder with less than 35% cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>Sensor Module</i>			
<ul style="list-style-type: none"> <li>The system shall include a sensor module mounted to the SCBA backframe and located in an area between the cylinder and backframe in a manner designed to protect the assembly from damage.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain a motion sensor that is sensitive to user hip movement to reduce false activations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain redundant, dual sound emitters for the audible alarm and dual visual "buddy" indicator lights.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module sound emitters shall be oriented in multidirections for optimal sound projection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module sound emitters shall broadcast a unique alarm tone for the following conditions: Pre-alarm PASS, Full-alarm PASS, EVAC, System Integrity, PAR, and Low-battery.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators on the backframe mounted sensor module shall flash green during normal operation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash red when the device is in prealarm and full-alarm.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash orange when the SCBA has reached one-half cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash a combination of red, green, and white when the SCBA has reached 35% of the rated cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall have a Bluetooth chip set integral to the unit to provide wireless connectivity to external devices.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Optional Components</b>	<b>Product:</b>		
<b><i>Personal Alert Safety System with Accountability</i></b>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The PASS Device shall be compliant to the NFPA 1982, 2018 Edition Standard on Personal Alert Safety Systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Operation of this distress alarm shall be initiated with the opening of the valve of an SCBA charged cylinder.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall feature a "hands-free" re-set capability that may be activated by means of a slight movement of the SCBA when the system is in a pre-alarm mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall operate from a single power source containing six "AA" batteries.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall have a battery check function that provides an LED indication of battery status while the SCBA is not pressurized.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is manually activated, the locator system shall immediately emit a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is activated due to lack of motion, the locator system shall have a ten second delay prior to emitting a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall utilize a 2.4 GHz signal to provide the best path to a "downed" firefighter.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The locating system shall be programmable with eight alpha-numeric characters to provide identification information.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall transmit user status information at a frequency of 2.4 GHz on a self-healing mesh network system that when deployed allows each energized SCBA to function as a repeater ensuring system connectivity.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall provide bi-directional communications between incident command and the SCBA wearer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The communication shall contain: the user's name or ID, cylinder pressure, PASS alarms, PASS Acknowledgement, evacuation status, evacuation acknowledgement, Withdraw status, Withdraw acknowledgement, System status, and Electronic PAR status.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The PASS device shall contain two components: a Console and a Sensor Module.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS device goes into pre-alarm, the user shall be notified through a distinct flashing light pattern in the breathing regulator-mounted HUD display.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>Console</i>			
<ul style="list-style-type: none"> <li>The console shall be located on the user's right shoulder harness.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The control console shall come with a mechanical (analog) pressure gauge that is angled at 30°.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain an integral edge lit mechanical pressure gauge that is automatically turned on by opening the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall display to the user the following: Pre-Alarm: alternating red flashing LED's; Full Alarm: dual flashing red LED's and a flashing PASS icon; Low Battery: red flashing LED's; Normal System Operation: flashing green LED.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall also include icons to indicate Range Status, Evacuation, Withdraw (self-evacuation), ePAR, and when the system is ready to receive the user's ID through an RFID card.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain a photo sensing diode to dim and brighten the HUD as the ambient lighting conditions change.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain an integrated RFID tag.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain push buttons for user interface.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The push buttons shall be designed to minimize accidental activation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A yellow color-coded push button shall permit system re-set.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A red color-coded push button shall permit manual activation of the full alarm mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A gray color-coded push button shall permit the activation of the withdraw mode.</li> </ul>			
<ul style="list-style-type: none"> <li>The console shall be equipped with a LED "External HUD" allowing others to determine the wearer's cylinder pressure through the same color-code scheme as the breathing regulator-mounted HUD.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A green LED shall be illuminated across the gauge face to indicate a cylinder with greater than half cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A yellow LED shall be illuminated across the gauge face to indicate a cylinder with less than half cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A red LED shall be illuminated across the gauge face to indicate a cylinder with less than 35% of the rated cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Sensor Module</i>			
<ul style="list-style-type: none"> <li>The system shall include a sensor module mounted to the SCBA backframe and located in an area between the cylinder and backframe in a manner designed to protect the assembly from damage.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain a motion sensor that is sensitive to user hip movement to reduce false activations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain redundant, dual sound emitters for the audible alarm and dual visual "buddy" indicator lights.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module sound emitters shall be oriented in multi-directions for optimal sound projection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module sound emitters shall broadcast a unique alarmtone for the following conditions: Pre-alarm PASS, Full-alarm PASS, EVAC, System Integrity, ePAR, and Low-battery.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators on the backframe mounted sensor module shall flash green during normal operation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The visual indicators shall flash red when the device is in pre-alarm and full-alarm.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash orange when the SCBA has reached one-half cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash a combination of red, green, and white when the SCBA has reached 35% of the rated cylinder pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall have a Bluetooth chip set integral to the unit to provide wireless connectivity to external devices.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Universal Emergency Breathing Safety System (UEBSS)</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The optional Universal Emergency Breathing Safety System (UEBSS) shall be approved to NIOSH 42CFR, Part 84 and NFPA 1981, 2018 Edition.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The UEBSS shall have one of each of the following requirements; (1) a manifold with one each of a Rectus female socket and Rectus male plug, both of which have check valves, (2) 40" minimum low-pressure hose, (3) a pouch for storing the hose, and (4) a dust cap for the female socket and male plug.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The UEBSS shall be positioned on the wearer's right side and shall be capable of allowing for six feet of hose between like systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The manifold shall be made of aluminum and be anodized black.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The female socket and male plug shall have spacing, no less than 15° off-center.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The female socket shall have a double action to disengage, noted as a "push-in/pull-back".</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The female socket shall have an internal check valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The male plug shall have an external check valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The hose shall be made of high temperature rubber capable of sustaining a maximum 250 psig of pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The containment system shall include a pouch and shall be made of para-aramid materials and shall be capable of storing 36" of hose.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pouch shall be attached to the SCBA by snap fasteners.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pouch shall have a pull-strap to assist with opening of the flap and gaining access to the hose and manifold assembly.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pouch shall be marked "UEBSS" and be constructed of reflective material.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pouch shall be removable from the backframe without the use of tools.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The UEBS shall have provision for connection of a supplied airline for extended duration use while reserving the cylinder supply for egress.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The UEBS shall connect to a supplied airline using an extended duration airline adapter.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The extended duration airline adapter shall have a female quick connect fitting on one end to connect to the UEBS.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The extended duration airline adapter shall have a male quick connect fitting on one end to connect to a supplied airline. The adapter shall be able to accommodate Hansen, Foster, Hansen HK, or Schrader.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The extended duration airline adapter shall have a check valve to prevent the accidental loss of air when the adapter is disconnected from the supplied airline.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<b>Product:</b>	
<b><i>Integrated Self-Rescue Belt</i></b>	<b>Meets</b>	<b>Does Not Meet</b>	<b>Exception</b>
<ul style="list-style-type: none"> <li>The optional integrated self-rescue belt shall be compliant to the NFPA 1981, 2018 edition and NFPA 1983, 2017 edition standards.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall be available in a single size, adjustable to fit waist sizes 28" to 50".</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall be constructed of 100% Kevlar webbing.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall be fire-resistant to meet the NFPA 1981, 2018 edition standard.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall have dual adjustment points to allow the belt to remain centered while donning.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall utilize side thumb-release buckles for ease of doffing.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall incorporate an optional quick release feature to jettison the SCBA.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall have a non-jettison option.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall utilize the patented COBRA buckle system.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The waist belt shall include a D-ring integrated into the front buckle that can be utilized as an NFPA 1983 rated attachment or positioning point.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The assembly shall consist of the following components: waist belt, life safety rope, fall descent device and anchor connector.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The life safety rope shall be Tsafe 7.5mm escape rope utilizing a Technora sheath and nylon core construction.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The descent device shall be an auto-locking F4 descender with single brake.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall have an option for either a lightweight, aluminum Lightning GT hook or a steel Crosby hook.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The complete system shall be capable of a 3,034 lb. static load.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Product:		
<i>Electronic Voice Communications</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The respirator shall have an optional facepiece-mounted voice amplification device to electronically project the user's voice. Refer to EPIC 3 Voice Amplifier Bid Specifications, H/S 7093</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The respirator shall have an optional facepiece-mounted radio interface communication system that provides voice amplification and wireless communication with two-way radios. Refer to EPIC 3 RI Voice Communication System Bid Specifications, H/S 7489</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The respirator shall have an optional facepiece-mounted radio direct interface communication system that provides voice amplification and wireless communication with two-way radios. Refer to EPIC 3 RDI Voice Amplifier Bid Specifications, H/S 7570</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>In-Mask Thermal Imager</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The respirator shall have an optional hands-free, in-mask thermal imager.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The in-mask thermal imager shall consist of a facepiece-mounted thermal imaging camera and an in-mask display.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**DASTECS** S.R.L.

**Representantes / Distribuidores Autorizados**

 **Argentina**

Tel: (+54 11) 5352 2500

Email: [info@dastecsrl.com.ar](mailto:info@dastecsrl.com.ar)

Web: [www.dastecsrl.com.ar](http://www.dastecsrl.com.ar)



**3M Scott Fire & Safety**

Personal Safety Division  
Monroe Center, P.O. Box 569  
Monroe, NC 28111

Phone 1-800-247-7257  
Email US-3M-ScottMonroeCSR@mmm.com  
Web 3MScott.com

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