

SAFETY MEETING TOPIC

This form shall be completed and kept on file

Job Name _____ Location _____ Job No. _____
Meeting Leader _____ Title _____
Date Held _____ Place _____ Time _____
Subject of Meeting ATMOSPHERE SUPPLYING RESPIRATORS

Atmosphere Supplying Respirators are also known as Supplied Air Respirators. The two main classifications of these respirators are Airline Respirators and Self-Contained Breathing Apparatus (SCBA).

AIRLINE RESPIRATORS

Airline Respirators supply uncontaminated air through a hose to the user. The uncontaminated air is usually supplied by a compressor or compressed air cylinders. The hose is attached to the wearer by a belt or other suitable means and can be detached rapidly in an emergency. A flow control valve or orifice is provided to control the rate of air flow to the wearer. The exhaled air passes through valves or supplied openings in the facepiece, helmet, hood or suit.

Airline Respirators should be of the continuous flow or pressure demand designs. A continuous flow system provides a constant supply of air to the user. They are typically used with loose fitting headgear like hoods and helmets. Examples include sand blasting and welding applications. Devices called vortex tubes can be used with these systems to regulate the temperature of the air you breathe.

Pressure Demand systems provide positive air pressure to the inside of the face mask. Air is supplied when the pressure drops because of leakage or inhalation.

Airline Respirators can be used to protect you from particulates, gases, or vapors. They can not be used in atmospheres that are immediately Dangerous to Life or Health (IDLH). This is because the user is dependent on the air source and hose. If something happens to the air source or hose, the user may not have enough time to safely exit the hazardous area. Another disadvantage of this system is the trailing hose. It may restrict movement and make certain jobs difficult to perform.

Special Combined Atmosphere-Supplying/Air-Purifying Respirators are also available. These devices can be configured to use cartridges (and filters) or an airline depending on the specific operation being performed or level of protection required.

SELF-CONTAINED BREATHING APPARATUS (SCBA)

In SCBA systems the air supply or breathing atmosphere is carried by the wearer. All Self-Contained Breathing Apparatus should be of the positive pressure demand configuration. In these systems, positive air pressure is always maintained in the facepiece of the respirator. Air is supplied as the pressure begins to decrease because of leaks or inhalation. SCBA systems can be of the open circuit or closed circuit design.

CLOSED CIRCUIT SCBA

Closed circuit breathing apparatus recycles all or a percentage of the exhaled air. Another name for closed circuit SCBA is "Re-breathing Device." The air is cleaned and re-breathed. These systems are more complicated and more expensive than open circuit SCBA systems. They are, however, lower in weight and can provide air for longer durations. Units are available in durations from 30 minutes to more than 4 hours.

OPEN CIRCUIT SCBA

An open circuit breathing apparatus passes the exhausted air to the surrounding environment. The air is not recirculated and re-breathed. A regulator supplied by a cylinder of compressed air provides uncontaminated, breathable air to the facepiece. These units are simpler in design and less expensive than the closed circuit systems. The heavier weight may make them unsuitable for strenuous work or work in confined spaces. Units are typically available in durations from 30 minutes to one hour.