Respirators How to Demonstrate the Equipment

The focal point of training workers in proper use of respiratory equipment is to demonstrate all of the different forms of respiratory protection and the kinds of hazards each one is suited to protect against. Here are the seven basic kinds of respiratory protection equipment in order of complexity, i.e., starting with the simplest and ending with the most complex. If you don’t have actual pieces of the equipment, you can substitute photographs:

1. **Dust Masks**

Dust masks protect against dust and airborne particles. Masks are inexpensive, simple to use, minimally invasive and typically disposable. **Limitation:** The tradeoff is that they offer only limited protection and aren’t appropriate for tasks that involve severe respiratory risks.

Air Purifying Types of Respirator

The next three forms of respirator are what are known as Air Purifying Types of Respirator. What they have in common is the use of a filter or cartridge to protect against airborne hazards. There are three types of Air Purifying Respirator:

2. **Particulate Respirator**

Particulate respirators use a filter and/or cartridge that captures particles in the air and prevents workers from breathing them in. **Limitation:** Filters and cartridges must be periodically cleaned and replaced in accordance with the manufacturer’s instructions. Particulate respirators don’t protect against gas or vapors.

3. **Gas & Vapor Respirators**

Gas and vapor respirators are designed to protect against hazardous gases and vapors in the air through use of a special chemical filter. Some gas and vapor respirators are designed to

screen out specific types of gases and vapors. **Limitation:** Gas and vapor respirators don't protect against airborne particles.

4. **Combination Respirators**

The difference between particulate and gas and vapor respirators on the one hand and combination respirators on the other is that the latter protects against both airborne particles and gas vapors. That's because combination respirators include particulate and chemical gas vapor filters that need to be maintained and replaced according to the manufacturer's instructions.

Air Supplying Respirators

Now the respiratory equipment is becoming more complex. The next three kinds of respirator are what are known as Air Supplying Respirators. Such respirators aren't simply a head piece but a system of equipment containing four basic pieces:

1. A hood;
2. A helmet;
3. A face piece; and
4. A compressor or cylinder.

You should demonstrate how each system works including the component parts of the system. There are three basic systems:

5. **Air Supplied Respirators**

Air supplied respirators are a lightweight system that delivers clean air through a hose. They're normally used for extended work periods in environments that are low in oxygen content or contain non-immediately life threatening levels of gases or vapors. **Limitation:** Air supplied respirators aren't appropriate for work in atmospheres that are or may be immediately dangerous to life and health.

6. **Combination Air Supplying Respirators**

Combination air supplied respirators have an auxiliary self-contained air supply that workers can use if the primary supply source or system fails. They're normally used for extended work

periods in environments that are or may beimmediately dangerous to life and health such as work in confined spaces.

7. **Self-Contained Apparatus (SCBA)**

SCBA systems contain a wearable clean air supply pack and a hose connection that doesn’t restrict movement. Closed circuit systems provide air for up to 4 hours. Open circuits provide air for a fraction of that time—typically up to 60 minutes. SCBA systems are normally used when there’s a short time needed to enter and escape from atmospheres that are or may be immediately dangerous to life and health.