



## **TOOL BOX SAFETY TOPIC**

### **RESPIRATORY PROTECTION**

#### **Introduction**

The OSHA Standard for Respiratory Protection is found in 29 CFR 1926.103 Subpart E and 1910.134.

Respiratory hazards may occur through exposure to harmful dusts, fogs, fumes, mists, gases, smoke, sprays, and vapors. The best means of protecting personnel is through the use of engineering controls (e.g. ventilation) that eliminate or reduce exposure to hazardous materials. Administrative controls may also be utilized. If these are not effective then respiratory protection must be used to reduce personnel exposure.

#### **Respiratory Protection Written Program**

The respiratory hazards in the workplace must be evaluated. If it is determined that respirators are required, a Respiratory Protection Program must be written. It shall include information on respirator selection, medical evaluations, fit testing, user training, respirator use, schedule for respirator care, and auditing for employee compliance.

## **Types of Respirators**

There are different makes and styles of respirators, but all of them fall into one of two types:

- Air purifying: Removes contaminants from the air as you breathe.
- Atmosphere-supplying: Provides breathing air from a clean source, (for example, a self-contained breathing apparatus (SCBA) supplies air from tanks that are carried by the user).



## **Selecting a Respirator**

It is critical to match the capabilities and limitations of the respirator to the hazards of the job. Using the wrong respirator can be fatal.

## **IDLH**

Atmospheres that pose an immediate threat to life (such as low oxygen levels) or cause irreversible health effects are considered Immediately Dangerous to Life or Health. Only an SCBA or an air-supplying respirator with an auxiliary SCBA can be used.

## **Medical Evaluations**

Wearing a respirator can be physically taxing to the body. Before any personnel are fit tested or required to wear a respirator they must be evaluated to ensure that they are physically capable to do so. Personnel will be required to fill out a medical questionnaire and may need a physical exam and medical tests. Follow-up medical evaluations may be required if personnel exhibit medical signs or symptoms that would have an effect on their ability to wear a respirator. If any personnel decides to wear a respirator on a voluntary basis, they still need a medical evaluation and must follow program provisions for cleaning, storage and maintaining the respirator.

## **Fit Testing**

Personnel must be fit tested by a qualified individual before using a respirator with a tight fitting facepiece. Because one respirator will not fit everyone, different types and sizes shall be made available.



Personnel must pass an appropriate fit test using the same type and size of respirator the person will be wearing on the jobsite. Persons using respirators must be re-tested annually to ensure that a proper fit is maintained.

## **Use of Respirator**

Each time personnel put on their respirator they must perform one of two checks to make sure that their respirator has a good face to facepiece seal.

*Positive Pressure Check:* Close the exhalation valve and breathe out gently into the face piece. The seal is good if they feel the facepiece bulge out slightly without air leaking out around the seal.

*Negative Pressure Check:* Close the exhalation valves and breathe in gently so the face piece collapses slightly. Hold your breath for ten seconds. The seal is good if the facepiece remains slightly collapsed and there is no air leaking in around the seal.

Employees who have facial hair, wear glasses, goggles, or other PPE are not permitted to use a tight-fitting respirator if there is interference with the sealing surface or with valve function. Employees must be monitored while working for signs of stress or work area change that could affect respirator effectiveness. Employees must have facilities to wash their face and respirators, change filters if they detect vapor or gas breakthrough or air flow resistance. IDLH procedures must be established and employees trained.

When wearing a respirator always leave the work area when:

- Vapor is detected or gas breaks through.
- There is a change in breathing resistance.
- A faceplate fails to seal properly causing leakage.

- A change of filter, cartridge, or canister elements is required.
- Personnel need to wash their face or the facepiece to prevent eye or skin irritation.
- The respirator needs repair.

### **Care and Maintenance**

Clean the respirator after each use.



Respirators should be assigned to each individual. Inspect the respirator before and after use for any signs of deterioration or malfunction. Clean the respirator after each use. Never use a respirator if you find any defects. Wash and dry and store in a sealable plastic bag. Respirators should be stored carefully in a protected location away from excessive heat, light, moisture, dust and chemicals; and they must be stored to prevent deformation of the facepiece and exhalation valve.

### **Respirator Test Questions**

1. Respiratory hazards can include exposure to dust, fogs, fumes, mists and vapors?
  - a. True
  - b. False
2. Engineering controls should be tried before resorting to the use of respirators because there is always a chance of failure of the equipment and personnel error.
  - a. True

- b. False
- 3. Personnel who use a respirator do not have to have a Medical clearance first.
  - a. True
  - b. False
- 4. There are two types of respirators: air – purifying and atmosphere – supplying?
  - a. True
  - b. False
- 5. Employers are not required to have a written program.
  - a. True
  - b. False
- 6. If while you are wearing your respirator you need to change the cartridge you can safely do so while in the work area.
  - a. True
  - b. False
- 7. You never have to clean your respirator.
  - a. True
  - b. False

1-T,2-T,3-F,4-T,5-F,6-F, 7-F,

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