

ENVIRONMENTAL, HEALTH & SAFETY OFFICE

SUBJECT: Respiratory Protection Program (RPP)

I. PURPOSE

The purpose of the procedure is to protect people from dangerous atmospheres, including harmful mists, smoke, vapors, and oxygen-deficient atmospheres through engineering, administrative, and procedural controls. When these controls cannot provide adequate protection against harmful atmospheres, respiratory protection is necessary.

II. SCOPE

This procedure applies to faculty, staff and students at Sam Houston State University (SHSU).

III. EXCEPTIONS

This procedure does not apply to contractors working on SHSU property. However, contractors working for SHSU that may be exposed to hazardous atmospheres shall be required to have and follow a written RPP.

IV. DEFINITIONS

IDLH – Immediately Dangerous to Life or Health

HEPA – High Efficiency Particulate Air filter

SCBA – Self Contained Breathing Apparatus

V. RESPONSIBILITIES

A. THE ENVIRONMENTAL, HEALTH & SAFETY OFFICE

The Environmental Health & Safety (EH&S) Coordinator is responsible for the development, implementation, and review of the RPP. The EH&S Coordinator shall also provide training to ensure successful implementation of RPP. The EH&S Coordinator will also help identify the proper respirator and cartridge prior to use.

B. DEANS, DIRECTORS, DEPARTMENT HEADS

The Deans, Directors and Department Heads shall ensure this procedure is used when applicable.

C. SUPERVISORS

Supervisors, Project Managers, Shop Forepersons and the EH&S Coordinator are responsible for ensuring the employees under their supervision follow this procedure.

D. EMPLOYEES

Employees are responsible for the proper use and maintenance of the respirator and cartridges. The employee shall report any problems associated with the RPP to their Supervisor or the EH&S Coordinator immediately.

VI. REQUIREMENTS

Usage Requirements

People who use respiratory protection must be physically capable of using and wearing the equipment. In some cases, a physician must determine if an employee is healthy enough to use a respirator. In addition, all people required to wear respirators must be formally trained and instructed in proper equipment usage. This training should include instruction on common respiratory hazards and symptoms of exposure.

Types of Respirators

It is important to select the right respirator for the job. There are many types of respirators and each type protects against different hazards. Respirators are classified according to these factors:

- Air source: supplied air or ambient air
- Pressure: positive or negative
- Mask configuration

The following lists information on various respirators:

- Supplied Air Respirators:
 - * Supplied air respirators are necessary in oxygen deficient atmospheres.
 - * When using a supply air respirator, have a back-up person with a SCBA standing nearby.
 - * SCBA use supplied air from a cylinder carried by the user.
 - * Airline respirators require a compressor or cylinder(s) and a hose to supply air the user.
 - * Airline respirators usually have an emergency escape bottle.
 - Air Purifying Respirators
 - * Air purifying respirators use ambient air and cannot be used in oxygen deficient atmospheres, IDLH atmospheres, or areas where the identity or concentration of a contaminant is unknown.
 - * Ambient air is purified by a chemical cartridge, canister, or particulate filter.
- Users must select the proper cartridge/canister/filter.
-Cartridges and canisters must be replaced if the user notices an odor, taste, or throat irritation. Wet, damaged, and grossly contaminated cartridges/canisters must also be replaced.

- * Powered air-purifying respirators use filtered ambient air in a positive-pressure continuous flow mode.
- * Disposable or single-use respirators are made of cloth or paper and are primarily used for nuisance dusts
- * All filters (HEPA, dust pads, and disposable respirators) must be replaced if any of the following conditions occur:
 - Breathing becomes difficult.
 - Filter or dust respirator becomes damaged, visibly dirty, wet, or contaminated on the inside.
- Mask Types:
 - * Full-face mask covers the face from the hairline to below the chin. This type of mask provides eye protection.
 - * Half-face mask covers the face from above the nose to below the chin.

The following table highlights various respirators and their ability to protect against different hazards:

RESPIRATOR TYPE	PROTECTION	NO PROTECTION
Filter Respirator (HEPA cartridge)	Dust Fumes Smoke Mist Microorganisms Asbestos	Chemical vapors or gases Oxygen deficiency
Chemical Cartridge/Canister Respirators	Certain gases and vapors up to a particular concentration	Oxygen deficiency Particulate matter
Supplied Air Respirator	Depending on type: Particulates Chemical vapors and gases Oxygen deficiency	

NOTE: Only use respirators that are approved by NIOSH/MSHA or the Department of Interior-Bureau of Mines.

Selecting a Respirator

When selecting a respirator, consider the following factors:

- Type of hazards
- Identity and concentration of the contaminant
- Time constraints
- Activity of the person wearing the respirator
- Degree of protection provided by each type of respirator

Follow these guidelines for selecting the correct respirator:

- Use a HEPA filtered respirator:
 - * If the contaminant is a biological hazard
 - * If the contaminant is a particulate, i.e. asbestos
- Use a supply air respirator:
 - * If the identity and/or concentration of the contaminant is not known
 - * If an oxygen deficient atmosphere is known or suspected
 - * If an IDLH condition exists
- Use a SCBA instead of an airline respirator if an airline respirator could be damaged by work or conditions within the area.
- Use an airline respirator instead of an SCBA if the work will require long periods inside the contaminated work area.

IMPORTANT:

Respirators are available in different sizes. Always fit test a respirator to select the correct size.

Using Respirators Safely

Follow these guidelines to ensure safe respirator usage:

- **Do Not** use a respirator unless you have:
 - * been evaluated by a physician and determined fit to wear a respirator.
 - * been formally trained to wear a respirator.
 - * been fit tested for the respirator you plan to use.
- Make sure you have the correct respirator for the job.
- Inspect respirators before each use.
- Shave facial hair and put in dentures (if applicable) to ensure a good seal with the facemask.
- If you are working in a dangerous area, have another person present.
- Remember that contaminants can harm the body as well as the respiratory tract; wear protective clothing as appropriate.

- Return to fresh air and remove the respirator if the following conditions occur:
 - * You feel nauseous, dizzy, or ill.
 - * You have difficulty breathing.
 - * The canister, cartridge, or filter needs to be replaced.

- Properly clean and store all reusable respirators.
- Do not mistakenly use a filter respirator for protection against gases or vapors.
- Never remove a respirator in a contaminated atmosphere.
- Do not talk unnecessarily or chew gum while wearing a respirator.
- Do not allow your facial hair or eyeglass frames to interfere with the face mask seal.

VII. TRAINING

Anyone who is required to wear a respirator must be trained initially and at least every two years afterward. Training shall include the following:

- the limitations of the respirator.
- how to don and doff the respirator.
- how to maintain the respirator.
- what to do if there is a problem.