

Bloomsburg University of Pennsylvania
Respiratory Protection Program
Effective Date: January 22, 2008
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A. General Overview

1. This program shall cover all Bloomsburg University (BU) employees who are required to wear respiratory protection during work activities and those required to wear respiratory equipment during an emergency incident.

B. Responsibilities

1. Employees

- a. Shall be responsible for the routine care and maintenance of the respirator. The employee shall inform his/her supervisor for remediation of any problems with the respirator.
- b. Shall inform his/her supervisor of any respiratory hazards or any aspects of the program that the employee feels is not being adequately addressed.
- c. Shall maintain a facial surface consistent with a proper fit of the respiratory protective device, i.e., no beards and clean-shaven when wearing the respirator.

2. Supervisors

- a. Shall identifying work areas, processes or tasks that require workers to wear respirators; by completing a Hazard Assessment Form as required in the Personal Protective Equipment Program
- b. Shall be trained and familiarized with this program.
- c. Shall ensure that workers are identified, medically evaluated, trained, fit tested and equipped for respiratory protection usage.
- d. Shall provide respirators to their employees.
- e. Shall enforce that proper use and maintenance of respiratory equipment, as necessary.
- f. Shall monitor work areas to identify potential respiratory hazards.
- g. Shall coordinate and consult with the Office of Workplace Safety to administer this program.

3. Office of Workplace Safety

- a. Shall have the authority to make decisions and implement changes to the program as necessary.
- b. Shall administer/oversee the program.
- c. Shall provide respirator medical evaluations to effective employees at no cost to the employee.
- d. Shall conduct the required evaluations of program effectiveness.
- e. Shall ensure that all respirator users are properly trained and fit tested.
- f. Shall ensure that all employees who wear a negative or positive pressure air-purifying facepiece shall be fit tested before use in the workplace.

- g. Shall assist departments in identifying, evaluating and surveying work areas that require respiratory protection.
 - h. Shall maintain respiratory protection records.
 - 4. Mid-State Occupational Health Services, Inc.
 - a. Shall make the determination whether an employee is medically fit to wear respiratory protection equipment.
 - b. Shall determine what test, evaluations, etc. are necessary to make the determination whether an employee is medically fit to wear respiratory protection equipment.
- C. Engineering Controls
 - 1. Engineering Controls shall be used when feasible. Examples of engineering controls are as follows:
 - a. Changes in the work process that reduce or eliminate worker exposure.
 - b. Substitute less hazardous chemicals or products for more hazardous materials.
 - c. Enclose or isolate the work process from the affected workers.
 - d. Use ventilation to dilute or remove the contaminant.
- D. Types of Respiratory Protection
 - 1. The program covers the use of both air-filtered and air-supplied respirators.
- E. Selection of Respirators
 - 1. The program shall recognize the use of NIOSH-certified respiratory equipment. A certified Equipment List can be found on the NIOSH website <http://www.cdc.gov/niosh/npptl/topics/respirators/cel/>.
 - 2. The University shall use respirators and cartridges that are:
 - a. Jointly approved by the Mine Safety and Health Administration and NIOSH as specified in 30 CFR 11 or
 - b. Approved by NIOSH as specified in 42 CFR 84.
 - 3. The Office of Workplace Safety shall select and recommend an appropriate respirator for the hazard. They shall use the following as guidance in the selection: 29 CFR Parts 1910.134, 1910.135, 1910.1001, 1926.1101, 1910.1017, 1910.1045 and 1910.1051; the ANSI Standard for Respiratory Protection Z88.2-1992; and any applicable federal and/or state regulations.
 - 4. For protection against particulates, the University shall provide:
 - a. Atmosphere-supplying respirator; or
 - b. Air-purifying respirator equipped with a NIOSH-certified HEPA filter; or

c. Filter Classifications, Under NIOSH 42 CFR 84.

Maximum Efficiency	No Oil Aerosol Exposure (Not Oil-Proof)	Some Oil Aerosol Exposure (Oil Resistant)	Total Oil Aerosol Exposure (Oil Proof)
95%	N95	R95	P95
99%	N97	R97	P97
99.97%	N100	R100	P100

- d. The voluntary use of particulate masks in an area where respiratory protection is deemed by the Office of Workplace Safety to not be needed shall be limited to N95 masks only. These masks are commonly referred to as “paper masks” or “dust masks”.

F. Medical Evaluations of Employees

1. BU shall provide a medical evaluation to determine the employee’s ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. BU will discontinue an employee’s medical evaluations when the employee is no longer required to use a respirator.
2. Perspective employees must be medically cleared to wear a respirator on the date of their exam.
3. Employee’s need to be re-evaluated every three years by Mid-State Occupational Health Services, Inc.

G. Fit Testing Procedures

1. Before an employee wears a negative or positive pressure air-purifying facepiece, the employee must be fit tested with the same make, model, style and size of respirator to be used.
2. The employee shall be fit tested:
 - a. Prior to initial use of a respirator; and
 - b. Whenever a different respirator facepiece (size, style, model or make) is used; and
 - c. On an annual basis.
3. The employee shall be given additional fit testing whenever the employee reports, or the supervisor or program administrator makes visual observations of changes in the employee’s physical condition that could affect respirator fit. Such conditions are, but not limited to:
 - a. Facial scarring;
 - b. Dental changes;
 - c. Cosmetic surgery; or
 - d. Obvious change in body weight.

H. Use of Respirators

1. BU shall not permit employees to wear air-purifying respirators under the following conditions:
 - a. When the atmospheric oxygen content is less than 19.5% by volume;
 - b. When there is an **Immediately Dangerous to Life or Health condition**;
 - c. When the air contaminant(s) is extremely toxic in minute quantities;
 - d. When the air contaminant(s) cannot be sufficiently detected by odor or when the odor threshold is at or above the listed TLV or PEL;
 - e. When the air contaminant(s) is highly irritating to the eyes, unless the worker is using a full-face respirator mask or equivalent eye protection;
 - f. When the selected cartridge is not rated for the air contaminate(s);
 - g. When there is a fast cartridge breakthrough time for the particular air contaminant(s); or
 - h. When the concentration(s) of the air contaminant(s) exceed the maximum filter concentration for that air-purifying filter as specified by the manufacturer.
2. Workers with facial hair that may interfere with the facepiece seal or valve function on air-purifying respirators shall not use an air-purifying respirator. This would include beards.
3. Other personal protective equipment such as head coverings, eye goggles, etc., shall be worn outside of the respirator. They shall be worn in a manner that does not interfere with the seal or the respirator. "Beard socks" shall not be worn between the respirator and the employee's face.
4. The respirator shall not be altered in any manner.
5. All cartridges, replacement parts, etc., shall be from the same manufacturer as the respirator, e.g. use only 3M cartridges and parts for a 3M respirator.
6. For all air-purifying respirators, the employees must perform a user seal check each time they put on the respirator using the procedures listed in Appendix A or procedures recommended by the respirator manufacturer.

I. Maintenance and Care of Respirators

1. Cleaning and Disinfecting
 - a. BU shall provide each respirator user with a respirator that is clean, sanitary and in good working order.
 - b. BU shall provide the materials needed to clean and disinfect the respirators.
 - c. Each respirator user shall clean and disinfect their respirator according to the manufacturer's recommendations.
2. Storage
 - a. The respiratory equipment shall be stored in a manner that protects the equipment from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals.
 - b. The respiratory equipment shall be stored in a manner that prevents the deformation of the facepiece and the exhalation valve.
 - c. In addition, emergency-use respiratory equipment shall be stored in the following manner:

- i) The respiratory equipment shall be stored in the work area where the equipment is readily accessible;
- ii) The respiratory equipment shall be stored in compartments or covers that are clearly labeled or marked as containing respiratory equipment; and
- iii) The respiratory equipment is stored according to any applicable manufacturer instructions.

3. Inspection of Respiratory Equipment

- a. The respiratory equipment shall be visually inspected for damaged or missing parts before each use and during cleaning.
- b. Emergency-use respiratory equipment shall be inspected on a monthly basis and in accordance with the manufacturer's recommendations. The equipment shall also be checked for proper function before and after each use.
- c. Emergency escape-only respiratory equipment shall inspected before being carried into the workplace for use.
- d. Self-Contained Breathing Apparatus shall be inspected monthly.
- e. The respiratory equipment inspections shall consist of the following:
 - i) A check of the condition of the parts such as valves, cartridges, canisters, filters, head straps, facepiece, connecting tube and gaskets;
 - ii) A check for respirator function; and
 - iii) A check for signs of deterioration or lack of pliability.
 - iv) For SCBA the air or oxygen cylinders shall have and maintain a minimum of 90% of the recommended pressure level. A check to determine if the regulator and warning devices are also functioning properly shall also be performed on a regular schedule.
- f. Replacement and Repair
 - i) For air-purifying respirators, the employee or their supervisor shall replace defective or missing valve flaps, gaskets and head straps. This is considered to be routine maintenance and not repair,
 - ii) Repairs shall be made by qualified technicians.
 - iii) The employee shall immediately inform their supervisor of any repairs to be made to the defective respiratory equipment and take the equipment out of service.
 - iv) The supervisor shall ensure that the defective respiratory equipment is either repaired or replaced. They shall also ensure that the defective equipment is not used in the interim.

J. Cartridge Life (End of Service Life) and Change-Out Schedule

- 1. If available, the respirator wearer shall use the End-of-Service-Life-Indicator (ESLI) to determine when to change out air-purifying elements, The Office of Workplace Safety shall be consulted to determine a change-out schedule to ensure that the air-purifying elements are changed out before the end of their useful service life.
- 2. The following factors may be utilized to estimate ESLI:

- a. The relative humidity of the work area. Humidity above 85% can reduce an air-purifying element's estimated service life by approximately 50%.
- b. The type of air contaminant.
- c. The concentrations of the air contaminant. By reducing the amount of contaminant by a factor of ten (10), the service life of an air-purifying element can be increased by a factor of five (5).
- d. The breathing demand of the respirator wearer. The harder and faster one breathes due to work stresses, the shorter the air-purifying element's service life will be.
- e. The presence of multiple contaminants.
- f. How variable the contaminant's concentration(s) will be.
- g. The breakthrough time(s) of the contaminant(s) in relationship to the cartridge.
3. If the respirator wearer experiences any odor, taste, irritation or experiences excessive breathing resistance, the wearer shall:
 - a. Immediately leave the contaminated area
 - b. Change-out the air-purifying element(s) regardless of the ESLI change-out schedule
 - c. Adjust the change-out schedule to shorter times and
 - d. Contact the Office of Workplace Safety for possible changes to the existing change-out schedule.
4. The respirator wearer shall change-out and discard any air-purifying elements that have reached their ESLI, failed during use, become damaged or wet or become difficult to breathe through.
5. If conditions are causing the air-purifying elements to fail before their ESLI, the Office of Workplace Safety shall be contacted to determine if the job function requires the use of a supplied-air respirator.

K. Identification of Filters, Cartridges and Canisters

1. All filters, cartridges and canisters used shall be NIOSH approved.
2. All labels on the filters, cartridges and canisters shall be labeled and color-coded with the NIOSH approval label.
3. During respirator use, the labels shall not be defaced, obscured or removed. The information on them shall remain legible. Any marking on the filters, cartridges or canisters by the user is acceptable if the marking does not compromise the integrity of the filter, cartridge or canister and it does not obscure the information on the label.

L. Training and Information

1. BU shall ensure that the employee can demonstrate knowledge in the following areas:
 - a. Why respiratory protection is necessary;
 - b. The limitations and capabilities of respiratory equipment;
 - c. The use of respiratory equipment in an emergency;

- d. How to inspect, put on and remove a respiratory and how to perform user check seals;
 - e. The procedures for maintenance and storage of respiratory equipment;
 - f. How to recognize medical signs and symptoms; and
 - g. General requirements of Respiratory Protection Program.
- 2. The employee shall be required to demonstrate their knowledge/understanding of the training.
- 3. The employee shall be trained before respiratory equipment usage.
- 4. Employees shall be retrained any time:
 - a. There are changes in the workplace environment where respiratory protection is used: or
 - b. There are changes in the procedures or changes in respiratory equipment usage; or
 - c. Whenever the employee demonstrated inadequacies in knowledge; or
 - d. Any other situation that might warrant retraining.

M. Program Evaluation

- 1. The Office of Workplace Safety shall evaluate the Respiratory Protection Program for the workplace. This evaluation is dependent upon various workplace practices.
 - a. At a minimum, they shall assess:
 - i) The proper respirator fit on the employee;
 - ii) Whether the respirator use is interfering with effective work performance;
 - iii) Whether appropriate respiratory protection has been selected;
 - iv) Whether the respirator is used properly; and
 - v) Whether the respiratory equipment is used properly.
 - b. The Office of Workplace Safety shall talk with the workers about their respiratory equipment usage and its effect on them, e.g.:
 - i) Interference with hearing or vision;
 - ii) Fatigue;
 - iii) Breathing difficulties;
 - iv) Interference with movement or job performance;
 - v) Comfort;
 - vi) Confidence in using the respirator correctly; and
 - vii) Confidence that respiratory equipment is performing adequately.
 - c. The Office of Workplace Safety shall have any problems corrected.

N. Recordkeeping

- 1. The Office of Workplace Safety shall maintain a minimum of the following documents:
 - a. A written record from Mid-State Occupational Health Services, Inc. that certifies that the employee is medically approved to wear a respirator and any limitations.

- b. A written record of the last Respiratory Fit Test administered to the employee.
At a minimum the record shall contain:
 - i) Name of the employee tested;
 - ii) Type of fit test used;
 - iii) The make, model and size of the respirator tested;
 - iv) The date of the respiratory fit test; and
 - v) The test results.
 - c. A current written copy of the Respiratory Protection Program.
- 2. The Office of Workplace Safety shall maintain all written medical records pertaining to Respiratory Protection of the employees who wear respiratory equipment.
 - 3. Access to Records
 - a. Only the affected employee shall have access to the affected employee's medical records.
 - b. An employee is restricted to their records only.

Appendix A

Seal Check

Respiratory Protection

Seal Check

Always check the seal of the respirator on your face before entering a contaminated area. You should always conduct a positive and negative pressure test prior to using a respirator.

Positive Pressure

1. Place the palm of your hand over the exhalation valve cover and exhale gently. If the facepiece bulges slightly and no air leaks are detected between your face and the facepiece, a proper fit has been obtained.
2. If face seal air leakage is detected, reposition respirator on your face and/or readjust tension of the elastic straps to eliminate leakage.
3. Repeat above steps until a tight face seal is obtained.

If you cannot achieve a proper fit, DO NOT enter the contaminated area. See your supervisor.



Positive Pressure Check

Negative Pressure

1. Place palms of hands to cover face of the cartridge to restrict airflow.
2. Inhale gently and hold breath for 5 seconds. If you feel the respirator collapse slightly and pull closer to your face with no leaks between the face and the respirator, a proper fit has been obtained.
3. If face seal air leakage is detected, reposition respirator on face and/or readjust tension of straps to eliminate air leakage. Repeat above steps until a tight face seal is obtained.

If you cannot achieve a proper fit, DO NOT enter the contaminated area. See your supervisor.



Negative Pressure Check