



UMBC OFFICE OF ENVIRONMENTAL SAFETY AND HEALTH (ESH) WRITTEN PLAN	TITLE: Respiratory Protection Program
DATE CREATED: 10/2015	REVISION: 2.0 DATE OF REVISION: 10/2023

I. PURPOSE

To prevent occupational exposure to respiratory and atmospheric hazards, such as harmful dusts, allergens, fogs, fumes, mists, gasses, smokes, sprays, and/or vapors.

To ensure compliance with Occupational Safety and Health Administration (OSHA) Respiratory Protection Standard – 29 CFR 1910.134.

II. SCOPE

This policy applies to all University of Maryland Baltimore County (UMBC) employees, including students employed by the University.

This policy does not apply to the use of surgical masks and other non-tight fitting face coverings that do not form a complete seal to the user's face.

III. DEFINITIONS

- **Canister or Cartridge** - a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.
- **Emergency Use** – Designed to be used in emergency situations such as escape or rescue.
- **Filter** - a component used in respirators to remove solid or liquid aerosols from the inspired air.
- **Fit-Testing** – a test conducted to verify that a respirator provides the user with the appropriate level of protection.
- **Negative pressure respirator (tight fitting)** - a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.
- **Physician or Other Licensed Healthcare Provider (PLHCP)** - an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him

or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required in this policy.

- **Powered Air Purifying Respirator (PAPR)** - an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements [a filter cartridge] to the inlet covering [a hood or helmet]
- **Qualified person** - A person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge or training and experience, successfully demonstrated the ability to solve/resolve problems related to the subject matter, the work, or the project.
- **Respirator** – an apparatus worn over the mouth and nose or the entire face to prevent inhalation of dust, smoke, or other noxious substances.
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- **Self-contained breathing apparatus (SCBA)** - an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.
- **User Seal Check** - a procedure that is performed to confirm that a tight-fitting respirator is adequately sealed against the face of the wearer.

IV. PROCEDURE

Hazard Identification and Control

- If an employee requests to wear a respirator as part of their assigned duties, or if a suspected respiratory or atmospheric hazard exists in a work area that may require the affected employees to wear respiratory protection, the employee or employee's supervisor shall notify the Environmental Safety and Health (ESH) Department. ESH will conduct a risk assessment of the work area and the operation.
- If hazards are identified, ESH will coordinate with the affected department and employees to determine appropriate solutions to control the hazard, including the introduction or enhancement of engineering controls. If it is determined respiratory protection is the most effective means of protection, then ESH will consult with the department to determine the appropriate type of respiratory protection for the impacted employees.

Medical Evaluation

- Employees who will wear a respirator will be provided with medical evaluation, fit testing, training, and respirators by the University. These services will be charged to the employee's department.
- Training, medical evaluation and fit testing services will be facilitated by ESH. Medical evaluations will be conducted by a state-approved medical evaluator. Employees who will wear a respirator must complete an OSHA Respirator Medical Evaluation Questionnaire form for review by the medical evaluator. A physical examination of the

employee by the medical evaluator, if deemed necessary, may be required to confirm the employee's medical ability to wear a tight-fitting respirator.

- The medical evaluator will inform the employee's supervisor of recommendation to wear a tight-fitting respirator, as well as any restrictions or additional follow-up examination that may be necessary. If the medical evaluator determines that the employee is not medically fit to wear a tight-fitting respirator, then the employee will be provided with a Powered Air Purifying Respirator (PAPR).

Employees may be required to undergo additional medical evaluation if:

- An employee reports medical signs or symptoms that are related to the ability to use a respirator.
- The medical evaluator, the employee's supervisor, or ESH determines that an employee needs to be reevaluated.
- Information from observations made during fit testing and program evaluation indicating a need for employee reevaluation.
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

Fit Testing Requirements

- Once an employee is medically cleared to wear a tight-fitting respirator, fit testing will be arranged by ESH or the medical evaluator. The fit test shall be conducted with the same make, model, style, and size of respirator that will be used by the employee. Employees who are unable to pass the fit test with their selected respirator will be assisted with selecting another respirator. If they are unable to successfully complete a fit test with a tight-fitting respirator, a PAPR will be issued to the employee.
- Fit testing must be completed annually for all employees required to wear a respirator. Annual fit testing must be completed within 365 calendar days following the employee's previous fit test. Department supervision will keep records of dates of their employee's last fit test and notify ESH in a timely manner when their employees are due for an annual fit test. It is the responsibility of department supervision and the employee to keep track of and maintain their fit testing.
- Additionally, ESH must be notified for follow up fit-testing when there are observed or reported changes in an employee's physical condition that could affect the acceptable performance of the assigned respirator. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight. Employees must notify their supervisor if the fit of the respirator is no longer acceptable.

Voluntary Use of a Respirator

In certain situations, employees may wish to wear a respirator in the absence of a condition that requires the use of respiratory protection under the OSHA Respiratory Protection Standard. This is defined as voluntary use of a respirator. Department supervision shall notify ESH if an employee wishes to wear a respirator under voluntary use. ESH will conduct an evaluation of the work area and operation and make final determination of the appropriateness of voluntary use.

If ESH determines that voluntary respirator use is appropriate, then ESH will provide the employee with information on the requirements for voluntary use as outlined in Section D of the OSHA Respiratory Protection Standard ("Information for Employees Using Respirators When Not Required Under the Standard"). Employees permitted to wear a respirator under voluntary use will either be provided a respirator by the University or be permitted to wear their own. Employees wearing respirators under voluntary use are required to follow all requirements of this Policy.

Proper Use of Respirators

When using respirators, users must take precautions to prevent facepiece seal leakage. Facial hair that comes between the surface of the facepiece and the face, or hair that interferes with the face seal or valve functions is prohibited. Any condition or other equipment worn by the employee that interferes with the face-to-facepiece seal or valve function is prohibited. Each time the user dons a tight-fitting respirator they must ensure proper fit by performing a user seal check (refer to below procedure).

User Seal Check Procedure (Appendix B-1 to OSHA 1910.134)

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturer's recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

- **Facepiece Positive and/or Negative Pressure Checks**
 - **Positive pressure check.** Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.
 - **Negative pressure check.** Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

- Manufacturer's Recommended User Seal Check Procedures
 - The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.
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Any labels or markings on the respirator or associated canisters, cartridges, or filters must be NIOSH-approved. The tampering or defacement of any filters, cartridges, canisters, and associated labeling or markings, or any other accessories of the respirator is prohibited.

If an employee, while wearing a respirator, detects a compromise or degradation in the satisfactory function of their respirator, they are to immediately leave the work area and perform personal decontamination procedures as necessary and notify supervision once able to do so. Defective respirators shall not be used.

Maintenance and Care of Respirators

- Departments shall provide cleaning and disinfecting supplies and a suitable place to store assigned respirators. Manufacturer instructions and all other applicable procedures should always be followed when cleaning, inspecting, storing, or servicing respirators.
- Disposable respirators cannot be cleaned or disinfected and must be discarded after each use. Reusable respirators shall be cleaned and disinfected as often as necessary to maintain a sanitary condition.
- Reusable respirators should not be shared with coworkers for hygienic and fit purposes, except for emergency use respirators and SCBAs. Emergency use respirators and SCBAs must be cleaned and disinfected after each use.
- For respirators with an external filter or canister, filters and canisters must be replaced whenever they become soiled, damaged, when the user detects a noticeable degradation in protection or an increase in breathing resistance, or when the filters are approaching their manufacturer-specified end-of-service life.
- All respirators must be stored in a manner that protects the respirators from exposure to damage, degradation, and unnecessary wear. Emergency use respirators and SCBA's shall be kept accessible, stored in compartments or in covers that are clearly marked as containing emergency respirators, and in accordance with any applicable manufacturer instructions.
- Respirators shall be inspected by the user prior to each use. Emergency use respirators and SCBAs must additionally be inspected at least monthly according to manufacturer instructions and other applicable procedures. Monthly inspections shall be documented by the inspecting employee and kept on file with their respective department.
- All respirators that fail an inspection shall be removed from service, discarded, repaired, or adjusted as appropriate for the type of respirator. All repairs or adjustments to respirators are to be made by qualified persons in accordance with the manufacturer's

recommendations and specifications. All services and repairs must be documented and kept on file in the department where the respirator is assigned.

- Employees shall notify supervision when replacement respirators, filters, canisters, or other accessories are needed.

Training Requirements

All employees who wear a respirator will be required to receive training prior to initial respirator use. ESH will facilitate respirator training.

Each employee must demonstrate knowledge of the following:

- General requirements of the Respiratory Protection Program.
- Necessity of the respirator.
- How improper fit, usage, or maintenance can compromise the protective capability of the respirator.
- Limitations and capabilities of the respirator.
- Effective use of the respirator in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, don, doff, and check the seals of the respirator.
- Procedures for care, maintenance, and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of the respirator.

Refresher training will be required annually and when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete.
- The employee's knowledge or use of the respirator indicates that the employee has not retained the required understanding or skill.
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

Recordkeeping Requirements

- Medical Evaluation and Fit-Testing Records

- Department managers retain in the department for their respective employees for the duration of the employee's employment, plus 30 years.
- Department managers shall also submit a copy of these records to ESH upon receipt from the medical provider.
- **Respirator Inspection and Servicing Records**
 - To be retained by the department where the respirators are assigned.
- **Training Records**
 - Training records will be retained by ESH.

V. **ROLES AND RESPONSIBILITIES**

Office of Environmental Safety and Health (ESH)

- Serve as the administrator of the UMBC Respiratory Protection Program and perform periodic reviews and audits as necessary.
- Provide consultation on the selection and use of respirators.
- Conduct hazard assessments of work areas and operations as needed to determine presence of respiratory hazards and determine if respiratory protection is the appropriate and most effective means of control.
- Provide education and awareness of the respiratory protection program and its requirements to affected departments and employees.
- Facilitate the medical evaluation, training, and fit testing for employees in the Respiratory Protection Program.
- Conduct periodic audits, observations, and inspections as needed to ensure compliance and effectiveness of the Respiratory Protection Program
- Maintain employee training records for employees in the Respiratory Protection Program.

Area/Department Managers, Deans, Supervisors

- Ensure that all affected personnel follow this procedure
- Ensure all affected personnel have received required medical evaluation, training, and fit testing prior to wearing a respirator.
- Purchase and provide the appropriate respirators and associated equipment for their affected employees as required.
- Participate in risk assessments with ESH to determine the necessity of respiratory protection for employees, as well as to determine if hazard can be controlled through other means (such as engineering controls).

- Notify ESH upon identification of work operations and personnel that may require the use of respirators.

Employees

- Adhere to the requirements and provisions of this procedure.
- Follow guidelines on the proper use and limitations of respiratory protection.
- Properly clean, maintain, care for, and inspect assigned respirators.
- Complete all necessary training as required.
- Notify supervision when any associated respiratory protection equipment needs servicing or replacement.
- Report all safety concerns, accidents, and near-misses to supervision and ESH.

VI. REFERENCES

- UMBC Policy VI-13.00.01 - Environmental Safety and Health Management and Enforcement
- UMBC ESH Procedure - General Safety Rules for UMBC Employees