



# Office of Environmental Health and Safety

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## Respiratory Protection Program

### *Standard Operating Procedure*

SOP Number:	G-02-02
Effective Date:	April 14, 2023
Next Review:	April 14, 2026

#### 1. PURPOSE

To provide respiratory protection to faculty, staff and students for protection against aerosols and vapors at UMass Boston (UMB) and its associated properties. Some respirator usage will be voluntary, and some usage will be job required in order to protect the respiratory health of the University community.

#### 2. SCOPE

This program applies to all faculty, staff and students who are required to wear respiratory protection during normal work operations and during some non-routine or emergency operations such as a spill of a hazardous substance or exposure to infectious bio aerosols. This includes, but is not limited to faculty, staff and students, on the main campus of UMass Boston and employees located in satellite properties such as the Nantucket Branch Campus.

In addition, any faculty, staff or student who voluntarily wears a respirator, such as a half face air purifying respirator or N95, when a respirator is not required (i.e. in certain maintenance, housekeeping and fabrication operations) is subject to the medical evaluation and fit test pieces of this procedure unless for the purpose of the COVID-19 pandemic.

Outside contractors, visitors, or vendors who are working at the University must follow their own respirator protection program for their employees and are not included in this procedure.

### **3. PRECAUTIONS AND HAZARDS**

Failure to adhere to this SOP can result in exposure to irritating or toxic substances. In extreme measures, improper respiratory protection can lead to serious injury or death in the workplace.

No respirators covered in this program are designed to be used in oxygen deficient environments, i.e. environments that have less than 18.5% oxygen content in available air.

### **4. PROCEDURE**

The use of respiratory protection equipment is necessary when engineering and administrative controls cannot remove or adequately minimize an employee's exposure to hazards in the work environment. Respirators are to be used together with engineering controls (i.e. ventilation systems), administrative controls, and good practices. The University used the OSHA Respiratory Protection Standard (29 CFR 1910.134) as a working reference document to provide basic procedures for the selection, use, and maintenance of respiratory protection equipment.

Faculty, staff and students who voluntarily wear respirators, outside of Covid-19 related personal reasons, are subject to the medical evaluation, cleaning, storage, and maintenance as well as initial fit test provisions of this program. If a voluntary respirator user wears a respirator they purchase on their own as a face covering for the COVID-19 pandemic while at UMB, they are not required to obtain medical clearance or a fit test but must read OSHA 1910.134 Appendix D.

The expense associated with training, medical evaluations, and respiratory protection equipment for work related reasons will be borne by the University.

#### **4. a. Hazard Assessment and Equipment Selection**

OSHA's Respiratory Protection Standard requires that a Respiratory Hazard Assessment of the workplace be performed if hazards that require the use of respirators are known or likely to be present. Each operating department with the presence or potential presence of safety hazards is responsible for the assessment of hazards in their area and can utilize the form in Appendix A. OEHS will aid in the determination of hazards whenever respirator use is required or voluntary.

4. a. 1. The Respiratory Hazard Assessment should include the following steps:

4. a. 1. 1 A walk-through survey of the department's workspace to identify sources of inhalation hazards to employees. Basic inhalation hazards categories to consider are chemical, biological, and radioactive. These categories are further broken down into gases, vapors, dusts, mists, aerosols and particulates.

Some work environments could become oxygen deficient where oxygen must be supplied via special equipment such as SCBA's (Self Contained Breathing Apparatus) and are outside the scope of this UMB Procedure.

4. a. 1. 2 Analysis of the organized survey information to determine the type, level of risk, and seriousness of potential injury due to the hazards identified and to aid in the selection of the proper respiratory protection equipment.

4. a. 1. 3 Written certification (could be a single page such as a memo) indicating the work area and date of the hazard assessment, the faculty, staff and students certifying that the workplace evaluation (hazard assessment) has been completed, and that the document is a certification of a hazard assessment.

4. b. 1 Once the hazards have been assessed, the operating department with the assistance of OEHS, will:

- Select the respirator necessary to protect their faculty, staff and students from the identified hazards;
- Assume the cost of the respirators;
- Communicate the selection to affected employees;
- Fit-test, train, and provide the selected respirator to each faculty, staff and student.

4. c. When directed, affected faculty, staff and students must wear all required PPE for their work area. The operating department management or PI is responsible for ensuring that all affected faculty, staff and students wear the appropriate PPE while on the job.

4. d. Reassessment of the hazards in the work area should be completed as needed. Indicators for reassessment of hazards include, but are not limited to, installation and implementation of new equipment and processes, a rise in the incident rate of a certain type of accident, and renovation of a work area.

4. e. Only NIOSH approved respirators should be selected and used in accordance with guidelines of the American National Standards Institute Practices for Respiratory Protection, Z88.2-1969.

Examples of types of respiratory protection:

- Disposable N95 respirators
- N95 respirators for biological hazards
- Half face respirator w/air purifying cartridges

4. f. It should be noted that the wearing of disposable paper dust/mist respirators such as N95's requires enrollment in the respiratory protection program.

4.g. All respirator users must care for and maintain their respirator as required by the manufacturer.

4.h All respirator users, including volunteers using university purchased respirators, must be properly fitted by a quantitative or qualitative fit testing method. OEHS is available to assist with this requirement.

## **5. ROLES AND RESPONSIBILITIES FOR RESPIRATOR USERS AND VOLUNTARY RESPIRATOR USERS**

### **5.1 Supervisor / PI**

- Work with OEHS to perform assessments and provide for written certifications as required
- Collaborate with OEHS to select and supply appropriate respirator for hazards identified.
- Schedule affected employees for training and provide for written certifications as required

### **5.2 OEHS**

- Aid supervisors and staff as requested on Hazard Assessments, respirator selection, and employee training.
- Perform or arrange fit testing.
- Regularly evaluate the effectiveness of this SOP
- Manage and update the Respirator Protection Program SOP.

### **5.3 UMB Department Management**

1. Ensure all respirator users in their department follow this SOP.
2. Provide funding for the assessment, medical clearance, PPE purchase, and fit-test as required.

#### 5.4 Respirator Users

- Notify Supervisor and or OEHS when need arises to possibly utilize respiratory protection.
- Notify OEHS and supervisor when nature of job changes which may necessitate the need to reselect new respiratory protection
- Notify supervisor when there is a change in medical status
- Obtain medical clearance to wear a respirator and provide evidence to OEHS using the Respirator Medical Clearance form in the appendix except when purchased on their own and worn as a face covering for the COVID-19 pandemic.
- Follow details laid out in this SOP
- Be fitted and trained to wear a respirator when required
- Voluntary respirator users must read OSHA 1010.134 Appendix D
- Must not have facial hair that interferes with the fit or performance of their respirator
- Must report facial surgery, significant weight loss/gain or other factors that might necessitate a new fit test even if within a year of the previous fit test
- Must obtain an annual fit test.

#### 6. REFERENCES

- Occupational Safety and Health Administration (OSHA)-29 CFR 1910.134
- ANSI Standard Z88.2-1969 Respiratory Protection
- California Dept. of Public Health-Implementing Respiratory Protection Programs in Hospitals

#### 7. EQUIPMENT AND MATERIALS

OEHS will be responsible for the selection of all respirator equipment. The exception to this is respiratory protection used by UHS.

Due to specific needs and the volume of medical respirators worn in UHS, UHS will be procuring their own supplies.

At this time, the University faculty, staff and students enrolled in this program will be utilizing filtering facepieces and half face Air Purifying Respirators (APR's) as needed.

OEHS has a qualitative respiratory fit test kit. This kit will be housed and maintained at OEHS located in Service and Supply, UL, room 034.

All respirator equipment used on this campus must be NIOSH approved.

#### 8. TRAINING

OEHS will provide training to respirator users and their supervisors (as requested) on the contents of the University's Respiratory Protection SOP and their responsibilities under it, and on the OSHA Respiratory Protection Program as a working reference document. Faculty, staff and students will be trained prior to using a respirator on this campus.

The training will cover the following topics:

- UMB's Respiratory Protection SOP
- Proper use and maintenance of respirators
- OSHA Respiratory Protection App. D (as a reference for voluntary users)
- Respirator hazards encountered, or potential to encounter, and their health effects

Respirator use on campus and/or fit testing will be part of the training

## 9. DEFINITIONS

APR-Air purifying respirator

Facepiece-The part of the respirator that covers the nose and mouth of the wearer. Respirators may have half facepieces covering just the nose and mouth, or they may have full facepieces covering the nose, mouth and eyes. Facepieces may be either loose-fitting such as a hood or helmet, or they may be tight fitting, requiring a tight face-to-face seal for proper functioning.

N-95-This is a type of NIOSH approved filter, which filters at least 95% of airborne .3-micron particles. The term N-95 respirator refers to a filtering facepiece respirator with this level of NIOSH certification. Respirators that are not resistant to oil have a "N" designation.

OSHA-Occupational Safety and Health Administration-The US Governed agency that oversees occupational safety and health in private sector employment.

NIOSH-National Institute of Occupational Safety and Health-The US Government agency that oversees the certification of respiratory protection equipment in the United States.

PPE-Personal Protective Equipment including respirators, gloves, goggles, faceshields, etc.

Respirator-A device worn over the nose and mouth to protect the wearer from hazardous materials in the breathing zone. Respirators must be approved by the

National Institute for the Occupational Safety and Health (NIOSH) for the purpose for which they are used.

Respiratory Hazard Assessment-An assessment tool in Appendix A used to address hazards or potential hazards in the workplace/assembly environment where respiratory protection is an issue. It is a tool to help identify and select appropriate respirator protection for affected community members.

## 10. RECORDKEEPING


OEHS is responsible for:

- Retaining air sampling results
- Retaining faculty, staff and students fit-testing and training records
- Retaining medical clearance approval records

Respirator Hazard Assessment records will be kept by individual departments and OEHS

## 11. ATTACHMENTS

- Appendix A- Respiratory Hazard Assessment
- Appendix B- Respirator Medical Clearance
- Appendix C- Respirator Fit Test Form
- Appendix D- OSHA-29 CFR 1910.134 Appendix D
- Appendix E- Rainbow Passage

	Zehra Schneider Graham OEHS Director	4/14/23
Approved by signature	Name, Title	Date

# Appendix A

## Respiratory Hazard Assessment

Date: \_\_\_\_\_

Person or procedure name: \_\_\_\_\_

Location: \_\_\_\_\_

Type of contaminant generated. \_\_\_\_\_  
(i.e. nuisance dust, mist, dust, fume, gas, vapors)

Duration of exposure during the workday? \_\_\_\_\_

Length of project? \_\_\_\_\_

Level of contaminant present?  
\_\_\_\_\_

How this was determined? i.e., qualitative or  
quantitative \_\_\_\_\_

If industrial hygiene sampling equipment was used, how was level determined? -  
\_\_\_\_\_

Permissible exposure limit exceeded? \_\_\_\_\_yes \_\_\_\_\_ no

Oxygen deficient? \_\_\_\_\_ LEL exceeded? \_\_\_\_\_

Methods used to control hazard \_\_\_\_\_

Type of respiratory protection recommended: \_\_\_\_\_

Signature: \_\_\_\_\_ Name: \_\_\_\_\_



Position: \_\_\_\_\_ Department: \_\_\_\_\_

# Appendix B

## Respirator Medical Clearance

Date: \_\_\_\_\_

Office of Environmental, Health and Safety  
UMass Boston  
100 Morrissey Blvd.  
Boston, MA 02125

Name: \_\_\_\_\_ Employee: \_\_\_\_\_ Student: \_\_\_\_\_

Date of Respirator Evaluation: \_\_\_\_\_

This individual:

\_\_\_\_\_ is medically qualified for use of any type of respirator including SCBA

\_\_\_\_\_ is medically qualified for use of any type of air purified respirator (excludes SCBA)

\_\_\_\_\_ is medically qualified for use of an N, R, or P disposable particulate respirator (dust mask, non-cartridge)

\_\_\_\_\_ has the following respirator use restrictions (s): \_\_\_\_\_

\_\_\_\_\_ is NOT qualified for use of a respirator

Sincerely:

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(Name and credentials)

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Organization information

CC: Employee or student, OEHS, and supervisor

# Appendix C

## Respirator Fit Test Form



Adobe Acrobat Document

### ***UMB Respirator Fit Test Form***

Name	Employee Number	Title	Date
Department	Supervisor	Medical Clearance Date	
Respirator Brand	Model	Type	Size
Limitations    ___ Beard        ___ Denture        ___ Glasses        ___ None Explain			
Employee Signature			Date
Fit Tester Signature			Date

# Appendix D

## OSHA 1910.134



OSHA App. D.pdf

## OSHA 1910.134 Appendix D

- **Part Number:** 1910
- **Part Number Title:** Occupational Safety and Health Standards
- **Subpart:** 1910 Subpart I
- **Subpart Title:** Personal Protective Equipment
- **Standard Number:** [1910.134 App D](#)
- **Title:** (Mandatory) Information for Employees Using Respirators When not Required Under Standard.

### **Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard**

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

## Appendix E.

### Rainbow Passage



Rainbow  
Passage.pdf

*When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.*