

# UW-Milwaukee Respiratory Protection Program

## Introduction

This program complies with the respirator-related provision of OSHA's standard 29 CFR 1910.134.

NOTE: For TB: 29 CFR 1910.139 "Respirator protection for M. tuberculosis", will continue to apply to respirator use for protection against TB.

### a. Permissible Practice

The use of respirators is required where "effective engineering controls are not feasible or while they are being instituted."

UW-Milwaukee will provide employees with respirators that are "applicable and suitable" for the purpose intended "when such equipment is necessary to protect the health of the employee."

### b. Definitions and Acronyms

This paragraph contains definitions of important terms used in the regulatory text.

#### **OSHA –**

[Occupational Safety and Health Administration](#)

#### **NIOSH –**

[National Institute for Occupational Safety and Health](#)

#### **IDLH –**

"Immediately Dangerous to Life or Health" means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

#### **SCBA –**

"Self-Contained Breathing Apparatus" means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

#### **SAR –**

"Supplied-Air Respirator" or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

#### **ESLI –**

"End-of-Service-Life Indicator" means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

#### **HEPA –**

"High Efficiency Particulate Air" filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

#### **APR –**

"Air-Purifying Respirator" means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

### c. Respiratory Protection Program

- The qualified program administrator to oversee the program is the Director of University Safety and Assurances.
- Required respirators, training and medical evaluations are provided at no cost to the employee.
- **NOTE:** All respirators in use on campus, including voluntary, must be reviewed and approved for use by University Safety and Assurances.

### d. Selection of Respirators

- Only respirators certified by the National Institute for Occupational Safety and Health (NIOSH) may be used in compliance with the conditions of its certification.
- University Safety and Assurances staff will identify and evaluate the respiratory hazards in the workplace, including a reasonable estimate of employee exposures and identification of the contaminant's chemical state and physical form.
- University Safety and Assurances staff evaluate and approve departmental respiratory protection programs.
- Where exposure cannot be identified or reasonably estimated, the atmosphere shall be considered "immediately dangerous to life or health ("IDLH").
  - Respirators for IDLH atmospheres:
    - Approved respirators:
      - full facepiece pressure demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes, or
      - combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.
      - All oxygen-deficient atmospheres (less than 19.5% O<sub>2</sub> by volume) shall be considered IDLH.
  - Respirators for non-IDLH atmospheres:
    - For protection against gases and vapors, UW-Milwaukee shall provide:
      - an atmosphere-supplying respirator, or
      - an air-purifying respirators, provided that: -- a respirator is equipped with an "end-of-service-life" indicator (ESLI) certified by NIOSH for the contaminant; or
    - If there is no ESLI appropriate for the conditions to the employer's workplace, the employer implements a change schedule for canisters and cartridges that will ensure that they are changed before the end of their service life and describes in

the respirator program the information and data relied upon and basis for the change schedule and reliance on the data.

- For protection against particulates:
  - an atmosphere-supplying respirator; or
  - an air-purifying respirator equipped with high efficiency particulate air (HEPA) filters certified by NIOSH or with filters certified for particulates; or
  - an air-purifying respirator equipped with any filter certified for particulates by NIOSH for contaminants consisting primarily of particles with mass median aerodynamic diameters of at least 2 micrometers.

#### e. Medical Evaluation

For those situations where respirators are required:

- All employees must have a medical evaluation to determine the employee's ability to use a respirator, before fit-testing and use.
- Columbia St. Mary's Corporate WoRx will perform the medical evaluations using a medical questionnaire or an initial medical examination. (See website for [Medical Evaluation Form](#).)
- Corporate WoRx physician must provide a written recommendation regarding the employee's ability to use the respirator.
- Additional medical evaluations are required under certain circumstances, e.g.:
  - employee reports medical signs or symptoms related to the ability to use a respirator;
  - Corporate WoRx physician, program administrator or supervisor recommends reevaluation;
  - information from the respirator program, including observations made during fit-testing and program evaluations indicates a need, or
  - change occurs in workplace conditions that may substantially increase the physiological burden of an employee.
- Annual review of medical status is not required

#### f. Fit Testing

- All employees using a negative or positive pressure tight-fitting facepiece respirator must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT).
- Fit testing is required prior to initial use, whenever a different respirator facepiece is used, and **at least annually thereafter**. An additional fit test is required whenever the employee reports, or the employer makes visual observations of changes in the employee's physical condition that could affect respirator fit (e.g., facial scarring, dental changes, cosmetic surgery or an obvious change in body weight).

- The fit test shall be administered using an OSHA-accepted protocol:
  - [Qualitative Fit Test Protocols](#)
  - Quantitative Fit Test Protocols
- Qualitative fit testing may be used to fit-test negative pressure air-purifying respirators (APRs) that must achieve a fit factor of 100 or less.
- If the fit factor determined through [Quantitative fit testing](#) is 100 for tight-fitting half facepieces, or 500 for tight-fitting full facepieces, the Quantitative Fit testing has been passed with that respirator.

**Note:** If a particular OSHA standard (e.g., 29 CFR 1910.1001 Asbestos) requires the use of a full facepiece APR capable of providing protection in concentrations up to 50 times the Permissible Exposure Limit (PEL), this respirator must be quantitatively fit tested. This is because a protection factor of 50 (50 x PEL) multiplied by a standard safety factor of 10 is equivalent to a fit factor of 500.

The safety factor of 10 is used because protection factors in the workplace tend to be much lower than the fit factors achieved during fit testing. The use of a safety factor is a standard practice supported by most experts to offset this limitation.

#### g. Use of Respirators

- Tight-fitting respirators shall not be worn by employees who have facial hair of any condition that interferes with the face-to-facepiece seal or valve function.
- Personnel protective equipment shall be worn in such a manner that does not interfere with the seal of the facepiece to the face of the user.
- Employees shall perform a user seal check each time they put on a tight-fitting respirator using the procedures in mandatory Appendix B-1 or equally effective manufacturer's procedures.
- Procedures for respirator use in IDLH atmosphere are stated.

#### h. [Maintenance and Care of Respirators](#)

Employees must clean and disinfect respirators using the procedures described in training or equally effective manufacturer's procedures at the following intervals:

- as often as necessary to maintain a sanitary condition for exclusive-use respirators,
- before being worn by different individuals when issued to more than one employee, and
- after each use for emergency respirators **and those used in fit testing and training.**

#### i. Breathing Air Quality and Use

Compressed breathing air shall meet the required for Type I-Grade D breathing air as described in ANSI/CGA *Commodity Specification for Air, G-7.1 - 1989*

#### j. Identification of Filters, Cartridges and Canisters

- All filters, cartridges and canisters used in the workplace must be labeled and color coded with the NIOSH approval label.
- The label must not be removed and must remain legible.

#### **k. Training and Information**

- All employees required to wear respirators must attend respirator user training. The training includes:
  - why the respirator is necessary and how improper fit, use or maintenance can compromise the protective effect of the respirator.
  - limitations and capabilities of the respirator
  - use in emergency situations
  - how to inspect, put on and remove, use and [check the seals](#)
  - procedures for maintenance and storage
  - recognition of medical signs and symptoms that may limit or prevent effective use
  - general requirements of this standard
- Training is required prior to initial use, unless acceptable training has been provided by another employer within the past 12 months.
- **Retraining is required annually** and when:
  - workplace conditions change
  - new types of respirator are used, or
  - inadequacies in the employee's knowledge or use indicates need
- The basic advisory information in [Appendix D](#) shall be provided to employees who wear respirators when their use is not required.

#### **l. Program Evaluations**

UW-Milwaukee will conduct evaluations of the workplace as necessary to ensure proper implementation of the program and consult with employees to ensure proper use.

#### **m. Recordkeeping**

- Records of medical evaluations must be retained and made available per 29 CFR 1910.1020
- A record of fit tests must be established and retained until the next fit test.
- A written copy of the current program must be retained.