



NORTH CAROLINA Office of
State Human Resources

OFFICE OF STATE HUMAN RESOURCES

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SUBJECT: Respirator Protection Program

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RELATED LEGISLATION:

North Carolina Occupational Safety and Health Standards for General Industry: 29 CFR 1910.134 and 29 CFR 1910 Subpart Z.

I. PROGRAM STATEMENT

It is a best practice of the [Agency/University] that exposure to hazardous chemicals be controlled through engineered design when feasible. When adequate protection can be achieved only by the use of respiratory equipment, such equipment shall be properly selected, used and maintained.

Each site shall follow a respirator program which ensures that:

- A list of tasks for which respirators are required is developed, specifying the specific type of respirator to be used.
- Consultation is made with the [Agency/University] Safety Director, Safety Consultant, or a competent employee to ensure proper selection of respirators.
- Employees are annually trained in the proper use of respirators.
- Each employee undergoes a health evaluation before wearing a respirator.
- Fit testing is performed annually or when changes are identified.
- No impediment (e.g., facial hair) is permitted to interfere with proper respirator fit.

This program is intended to ensure that respiratory protective equipment and procedures are uniform and effective for all [Agency/University] sites.

II. PURPOSE AND SCOPE

The purpose of the Respiratory Protection Program is to protect employees against harmful dusts, fogs, fumes, mist, gases, smoke, sprays, bio-aerosols, vapors and airborne organisms through the use of engineering controls, administrative controls, or personal protective equipment (PPE).

III. DEFINITIONS

Air Purifying Respirator: A type of respirator with an air-purifying filter, cartridge or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Negative Pressure Respirators – A respirator that fits tightly to the face, where ambient air is drawn through the air purifying element by the pressure of the inhalation of the wearer, creating a lower air pressure inside the face piece than the outside air.

Positive Pressure Air Purifying Respirator (PAPR): - A respirator where ambient air is drawn through the air purifying element by a motor or similar device and pumped into the face piece, creating a greater air pressure inside the face piece than the outside air.

Atmosphere Supplying Respirators: Respirators which provide air to the wearer from a source other than the ambient air, such as an air cylinder or air compressor.

Self-Contained Breathing Apparatus (SCBA) – An atmosphere-supplying respirator where the breathing air is designed to be carried by the user.

Supplied Air Respirator (SAR) – An atmosphere-supplying respirator where the breathing air is supplied through an airline.

Canister or Cartridge: A container with a filter, sorbent, or catalyst, or combination of these items which removes specific contaminants from air passed through the container.

Exposure: The potential or actual exposure to a concentration of an airborne contaminant/pathogen that would occur if the employee is not wearing respiratory protection.

Fit Factor: A quantitative estimate of the fit of a particular respirator to a specific individual, which typically estimates the ratio of the concentrate inside the respirator when worn.

Filter: A component used in respirators to remove solid or liquid aerosols from inspired air.

Filtering Face Piece: A negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.

Fit Test: A protocol to quantitatively or qualitatively evaluate the fit of a tight-fitting respirator on an individual.

High Efficiency Particulate Air (HEPA) Filter: A filter that is at least 99.97% effective in removing monodisperse particles of 0.3 microns in diameter and is NIOSH approved less than 40 CFR Part 84.

Hood: A respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately Dangerous to Life and Health (IDLH): 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 the environment. For the purposes of this policy, potential oxygen deficient atmospheres are IDLH.

Loose Fitting Face Piece: A respiratory inlet covering that is designed to form a partial seal with the face.

N-95: The N95-level respirator is a 95% particulate respirator. It is used for solid and non-oil based particles. Applications include grinding, sanding, bagging and general processing of various minerals and other substances that do not contain oil or vapors.

N-Series: Not Oil Resistant

- Approved for non-oil particulate contaminants
- Examples: dust, fumes, mists not containing oil

R-Series: Oil Resistant

- Approved for all particulate contaminants, including those containing oil
- Examples: dusts, mists, fumes
- Time restriction of 8 hours when oils are present

P-Series: Oil Proof

- Approved for all particulate contaminants including those containing oil
- Examples: dust, fumes, mists
- See Manufacturer's time use restrictions on packaging

Particulates: Air contaminants which are in solid or liquid states, such as dusts, fumes, mists, or fibers.

Parts Per Million (PPM): A measurement of the parts of an air contaminant per million parts of air.

Permissible Exposure Limit (PEL): The maximum concentration of an air contaminant to which a worker is allowed to be exposed, in accordance with the stated exposure limits in 29 CFR Part 1910 Subpart Z.

Physician or Other Licensed Health Care Professional (PLHCP): An individual who's 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 for medical clearance in compliance with the OSHA respiratory protection standard.

Respirator Inlet Covering: That portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a face piece, helmet, hood, suit, or mouthpiece respirator with hose clamp.

Self-Contained Breathing Apparatus (SCBA): An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Threshold limit value (TLV): The value of a chemical substance is a level to which it is believed a worker can be exposed day after day for a working lifetime without adverse health effects.

Tight Fitting Face Piece: A respiratory inlet covering that forms a complete seal with the face.

User Seal Check: An action conducted by the respirator user to determine if the respirator is properly seated to the face.

IV. EMPLOYER RESPONSIBILITY

1. The Safety Director, Safety Consultant, or a competent employee will have oversight of the respirator program. The Safety Director, Safety Consultant, or a competent employee will:
 1. Evaluate the effectiveness of the program.
 2. Review fit test records.
 3. Review medical Evaluations and Records.
 4. Notify affected staff whenever a new procedure/policy change is introduced and provide additional training on the equipment. Initial training is done during the issuance of equipment to staff and is renewed by affected staff each year.
2. Division Director or Designee (The Designee must manage the local facility) will provide appropriate respirators (shall be labeled as approved by NIOSH) and filtering media for task that require the use of a respirator.
3. Division Director or Designee (The Designee must manage the local facility) are responsible for identifying task/environment requiring the use of a respirator including but not limited to the following:
 1. Prepare and maintain a list of all areas, jobs, or job tasks for which respirators are required. Such assessment may be included as part of a PPE hazard assessment.
 2. Airborne Precautions.
 3. Concentrations of air contaminants may be at or greater than the Permissible Exposure limits established by 29 CFR 1910 Subpart Z.
 4. Oxygen content of less than 19.5% or greater than 23.5%.
4. Division Director or Designee (The Designee must manage the local facility) shall implement a program for cleaning and inspecting reusable respirators each time they are used.
5. Division Director or Designee (The Designee must manage the local facility) complete or see that the following is completed and maintain documentation:
 1. Medical Surveillance:

The screening will be done by a [medical questionnaire](#) to screen for pertinent medical conditions. The Employee Health Physician will review for approval of respirator use. Screening results will be used to identify workers who need more extensive evaluation, which will be ordered as indicated by the reviewing physician.
 2. Competency validation.
 3. Provide a copy of the standard to include [Appendix C](#).

V. EMPLOYEE RESPONSIBILITY

Employees who must use respiratory protection shall:

1. Comply with department or site specific policies on respirator use.
2. No employee shall don or use a respirator of any kind for the performance of job duties unless all of the requirements of the appropriate respirator program have been met.
3. Participate in medical clearance procedures, training sessions, tests for competency validation and fit tests.

4. Inspect their reusable respirators before each use, and clean and disinfect after each use according to procedures for reusable respirators.
5. Ensure that respirators are not being worn when there is a physical impediment to continuous contact between the sealing surface of the respirator and the wearer's face. Such impediments may be temple pieces on glasses, absence of dentures, a skull cap that projects under the face piece or other as specified in OSHA Standard 1910.134
6. Respirators will be used, maintained, cleaned, and stored away from contamination in a clean, sanitary place; and on a flat surface in a sealed container. Avoid extreme temperatures. Do not hang respirator by its straps and disinfect it in accordance with manufacturer's recommendations if reusable.
7. Be clean shaven at all times when the respirator is worn. (Unless the respirator is a powered positive pressure air purifying or air supplying respirator with no tight-fitting facial seal.)
8. Avoid any inhalation hazard, which includes exposure to oxygen deficient atmospheres as well as exposure to air contaminants in concentrations exceeding OSHA permissible exposure limits (PEL) or threshold limit values (TLV).
9. Report any significant changes or problems to their supervisor.
10. Not reuse a contaminated N95 respirator and dispose of properly.

VI. VOLUNTARY USE

Voluntary Respirator Use:

1. If an employee wants to wear a respirator, he/she must:
 - a. Obtain permission from your Division Director or Designee (The Designee must manage the local facility).
 - b. Read and follow the information contained in this program.
 - c. Read and sign Appendix D on page 11 for voluntary use, including the N-95.
 - d. Inspect the respirator before each use.
 - e. Report any significant changes or problems to the supervisor.
2. The employee must do the following:
 - a. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning, care and warnings regarding the reusable respirator's limitations.
 - b. A label of 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.
 - c. 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 of statement of certification should appear on the respirator or respirator packaging. It will tell the user what the respirator is designed for and how much it will protect the user.
 - d. Do not wear the respirator into atmospheres containing contaminants for which the respirator is not designed. For example, a respirator designed to filter dust particles will not protect the employee against gases, vapors, or very small solid particles of fumes or smoke.

VII. PROGRAM EVALUATION

Program Evaluation will be conducted to ensure compliance and contain at a minimum the following elements:

1. Employee's ability to use assigned respirator properly without interfering with effective workplace performance.
2. The employee is using the correct respirator in accordance with identified task.
3. Are the reusable respirators maintained properly? (Storage, Cleaning etc.)

VIII. FIT TESTING

1. The Safety Director, Safety Consultant, or a competent employee will be responsible for completing the "Fit Testing" initially, and annually or sooner if the employee has a significant change in weight or any change in facial structure. The quantitative or qualitative fit testing method will be used by the department.
2. An employee may be required to use any respirator with a negative or positive pressure tight-fitting face piece; the employee must be fit tested with the same make, model, style, and size of respirator that will be used.
3. An employee using a tight-fitting face piece respirator is fit tested prior to initial use of the respirator, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.
4. Self-Contained Breathing Apparatus, (SCBA) users must be trained, fit tested, and follow the manufacturer's operating instructions.
5. Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function must be removed.

Fit testing documentation will include:

1. The name or identification of the employee tested.
2. Type of fit test performed.
3. Specific make, model, style and size of respirator tested.
4. Date of test.
5. Pass or fail results of fit test.

Fit testing is to include:

1. Show the employee the proper way to don a respirator, proper positioning, strap tension and determining if there is an acceptable fit.
2. When assessing comfort, ask about:
 - a. Position on the nose.
 - b. Room for eye protection (have them put on eye protection if applicable).
 - c. Room to talk.
 - d. Position on face and cheeks.
3. Determining adequacy of respirator fit by checking:
 - a. Chin placement.
 - b. Strap tension.
 - c. Fit across nose and face.
 - d. Size of the respirator – goes from nose to chin.
 - e. Look in mirror for self-observation.

Have employee move head up and down and side to side while taking slow, deep breaths in order to seat the mask on face. Employee conducts a user seal check in accordance with manufacturer's recommendations.

4. Fit testing exercises.
 - a. Normal breathing - one minute.
 - b. Deep breathing - one minute (slow deep breaths in order not to hyperventilate).
 - c. Turn head from side to side - inhale at each side – one minute.
 - d. Move head up and down - inhale in the up position – one minute.
 - e. Talk - Read prepared text (rainbow passage) or count backward from 100.
 - f. Bend over - at waist, pretend touching toes, or jogging in place – one minute.
 - g. Normal breathing - one minute.
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IX. TRAINING

To ensure the proper and safe use of an air-purifying respirator, training for each wearer will be conducted initially and annually and will include the following:

1. Disciplinary action for non-use or misuse of equipment.
2. Each trainer will maintain current training literature.
3. Reason for respiratory protection.
4. Nature, extent and effects of respiratory hazards.
5. Respirator selection for particular hazard.
6. Explanation of operation, capabilities and limitations of selected respirator.
7. Use, training, inspection, wearing the respirator, checking the fit of respirator by the individual.
8. Fit testing after each individual has become familiar with the equipment.
9. Proper means to inspect, don, remove, use and check the respirator.
10. Proper procedures for cleaning, maintenance, and storage.
11. The reason respirator use is necessary.
12. The means to identify when a respirator is required.
13. How improper fit, usage, and maintenance can compromise protection.
14. Limitations and capabilities of the respirator.
15. Use of the respirator in **emergency situations**, such as respirator malfunction.

Training Certification records include:

1. Employees name.
2. Date of Training.
3. Types of respirator for which the employee was trained.
4. Employee signature certifying that instructions and information was received and understood.
5. Signature of the Trainer.

The employee's training record is maintained for the period the employee is engaged in tasks requiring the use of the respirator plus 30 years after their last day of state employment.

A written certification of employee training must be maintained by each location.

X. STORAGE

Division Director or Designee (The Designee must manage the local facility) shall ensure that respirators are stored as follows:

1. All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the face piece and exhalation valve.
2. Kept accessible to the work area.
3. Stored in compartments or in covers that are clearly marked as containing emergency respirators.
4. Stored in accordance with any applicable manufacturer instructions.
5. Labeled with employee's name.

XI. INSPECTION

Division Director or Designee (The Designee must manage the local facility) shall ensure that reusable respirators are inspected as follows:

1. All respirators used in routine situations shall be inspected before each use and during cleaning.
2. All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use and carried into the workplace for use.
3. Emergency escape only respirators shall be inspected before being carried into the workplace for use.
4. A schedule of inspection and required maintenance in accordance with the manufacturer's guidance or Appendix B of 29 CFR 1910.134.
5. A change schedule for respirator canisters to be used with gases or vapors where no end of service life indicator is present on the mask.
6. Data supporting the testing methods used in determining the level of actual contamination in the level and type of work being performed.
7. Actual contamination in the level and type of work being performed.

Division Director or Designee (The Designee must manage the local facility) shall ensure that respirator inspections include the following:

1. A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters. N95's should be inspected by the manufacturer's recommendations.
2. A check of elastomeric parts for pliability and signs of deterioration.

A schedule of inspection and required maintenance will be maintained by each section.

[AGENCY/UNIVERSITY] PHYSICIAN'S OPINION LETTER FROM APPENDIX C

Medical Respirator Certification

Employee Name _____

Date _____

Division _____

Site Location _____

(above completed by employee)

(to be completed by physician or health care professional)

I have examined the above named applicant/employee and find as follows:

1. _____ The examination indicated no significant medical impairment. Can be assigned any work consistent with skills and training and may use protective clothing and a negative pressure air purifying respirator.

2. _____ The examination indicates a medical impairment currently exists that limits respirator use as follows:
_____ cannot wear a negative air purifying respirator
_____ can wear a negative air purifying respirator only under these conditions:

3. _____ Applicant/employee should be reevaluated in () year(s).

Note: If not otherwise stipulated, the employee will be reevaluated every 5 years.

I have informed the applicant/employee of pertinent results and findings of this examination and a copy of this opinion letter has been issued to him/her.

Physicians/Health Care Professional Signature

Date

Address

Telephone Number

I have received a copy of this letter.

[Agency/University] Site Manager

Date

Respirator Use

APPENDIX D

Information for Employees Using Respirators When Not Required Under the Standard

When properly selected and worn, respirators are an effective method of protection against designated hazards. Respirator use is encouraged, to provide an additional level of comfort and protection for workers even when exposures are below the exposure limit. 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 must do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators 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.

I have read and understand this information.

Employee Signature

Printed Name

Date