



### **Respiratory Protection Program**

This respiratory protection program specifies standard operating procedures to protect all construction site employees from respiratory hazards, according to the requirements of 29CFR1926.103, which simply refers to 29CFR1910.134. Respirators are to be used only where engineering control of respiratory hazards is not feasible, while engineering controls are being installed, or in emergencies.

#### **Administrative Duties**

At EMA, our respiratory protection program administrator is our Project Manager. This person is solely responsible for all facets of the program and has the full authority to make necessary decisions to ensure success of this program. His authority includes hiring personnel and purchasing equipment necessary to implement and operate this program. The program administrator will develop written detailed instructions covering each of the basic elements of this program, and is the sole person authorized to amend these instructions.

The Project Manager is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee our respiratory protection programs, and conduct the required evaluations of program effectiveness.

Employees may review a copy of our respiratory protection program. It is located in our written Safety and Health manual and at our corporate office. Our program administrator reviews this program periodically to ensure its effectiveness. Only the program administrator may amend our written program.

#### **Respirator Selection**

Respirators are selected on the basis of respiratory hazards to which the worker is exposed and workplace and user factors that effect respirator performance and reliability. The program administrator will make all respirator selections and ensure compliance with the program.

When selecting any respirator in general we will:

- Select and provide respirators based on respiratory hazards to which a worker is exposed and workplace and user factors that effect respirator performance and reliability.
- Select a NIOSH-certified respirator and be used in compliance with the conditions of its certification. Typically we will utilize 3M brand ½ or full face respirators if required.
- Identify and evaluate the respiratory hazards in the workplace, including a reasonable estimate of employee exposures to respiratory hazards and an identification of the contaminant's chemical state and physical form.
- Consider the atmosphere to be IDLH if we cannot identify or reasonably estimate employee exposure.
- Select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

When selecting respirators for IDLH we will:

- Provide these respirators:
  1. A full face piece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes, or
  2. A combination full-face piece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.
- Provide respirators NIOSH certified for escape from the atmosphere in which they will be used when they are used only for escape from IDLH atmospheres.
- Consider all oxygen deficient atmospheres to be IDLH.

When selecting respirators for atmospheres that are not IDLH we will:

- Provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.
- Select respirators appropriate for the chemical state and physical form of the contaminant.
- For protection against gases and vapors, provide:
  1. An atmosphere supplying respirator; or
  2. An air purifying respirator, provided that: (1) The respirator is equipped with an end-of-service life indicator (ESLI) certified by NIOSH for the contaminant; or (2) If there is no ESLI appropriate for conditions in our work site, implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life.
- For protection against particulates, provide:
  1. An atmosphere supplying respirator; or
  2. An air-purifying respirator equipped with a filter certified by NIOSH under 30CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air purifying respirator with a filter certified for particulates by NIOSH under 42CFR84; or
  3. For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air purifying respirator equipped with any filter certified for particulates by NIOSH.

### *Respirator Types and Uses*

The following types of respirators may be used at our worksites:

- 3M Half-mask air purifying respirator, or equivalent
- 3M Full face piece air purifying respirator, or equivalent
- 3M Powered air purifying respirator, or equivalent

Only NIOSH certified respirators are selected and used. Where practicable, the respirators will be assigned to individual workers for their exclusive use.

### **Medical Evaluations**

A medical evaluation to determine whether an employee is able to use a given respirator is an important element of an effective respiratory protection program and is necessary to prevent injuries, illnesses, and even, in rare cases, death from the physiological burden imposed by respirator use.

At our company, persons will not be assigned to tasks requiring the use of respirators nor fit tested unless it has been determined that they are physically able to perform the work and use the respirator.

Qualified healthcare organizations will perform medical evaluations using a medical questionnaire found in Sections 1 and 2, Part A of Appendix C of 29CFR1910.134. Currently, Concentra Medical Centers of St. Louis serves as our PLHCP.

All medical questionnaires and examinations are confidential and handled during the employee's normal working hours, or at a time and place convenient to the employee. The medical questionnaire is administered so that the employee understands its content. All employees are provided an opportunity to discuss the questionnaire and examination results with their PLHCP.

Before any initial examination or questionnaire is given, we supply the PLHCP with the following information so that he/she can make the best recommendation concerning an employee's ability to use a respirator:

- Type and weight of the respirator to be used by the employee.
- Duration and frequency of respirator use (including use for rescue and escape).
- Expected physical work effort
- Additional protective clothing and equipment to be worn.
- Temperature and humidity extremes that may be encountered.

Once the PLHCP determines whether the employee has the ability to use or not use a respirator, he/she sends EMA a written recommendation containing only the following information:

- Limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
- The need, if any, for follow-up medical evaluation; and
- A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

#### *Follow-up Medical Examination*

A follow-up medical examination will be provided if a positive response is given to any question among questions 1 through 8 in Section 2, Part A of Appendix C of 29CFR1910.134 or if an employee's initial medical examination demonstrates the need for a follow-up medical

examination. Our follow-up medical examination includes tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, our company will provide a powered air purifying respirator (PAPR) if the PLHCP medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then we are not required to provide a PAPR.

#### *Additional Medical Examinations:*

Our company provides additional medical evaluations if:

- An employee reports medical signs or symptoms that are related to the ability to use a respirator.
- A PLHCP, supervisor, or the program administrator informs the employer that an employee needs to be reevaluated.
- Information from the respiratory protection program, including observations made during fit testing an program evaluation, indicates a need for employee re-evaluation; or
- A change occurs in workplace conditions (e.g. physical work effort, protective clothing, and temperature) that may result in a substantial increase in physiological burden placed on an employee.

Employees may contact the Project Manager for a copy of your confidential medical evaluation or questionnaire.

#### **Fit Testing Procedures**

It is imperative that respirators must fit properly to provide protection. If a tight seal is not maintained between the facepiece and the employee's face, contaminated air will be drawn into the facepiece and be breathed by the employee. Fit testing seeks to protect the employee against breathing contaminated air and is one of the core provisions of our respirator program.

In general, fit testing may be either qualitative or quantitative. Qualitative fit testing (QLFT) involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of the respirator user. If that user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate.

In a quantitative respirator fit test (QNFT), the adequacy of respirator fit is assessed by measuring the amount of leakage into the respirator, either by generating a test aerosol as a test atmosphere, using ambient aerosol as a test agent, or using controlled negative pressure to measure the volumetric leak rate. Appropriate instrumentation is required to quantify respirator fit in QNFT.

Our company makes sure those employees are fit tested at the following times with the same make, model, style, size of the respirator that will be used:

- Before any of our employees are required to use any respirator with a negative or positive pressure tight fitting face piece.
- Whenever a different respirator face piece (size, style, model, or make) is used.
- At least annually.

- Whenever the employee reports, or our company, PLHCP, supervisor, or the program administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to: facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.
- When the employee, subsequently after passing a QLFT or QNFT, notifies the company, program administrator, or PLHCP that the fit of the respirator is unacceptable. That employee will be retested with a different respirator facepiece.

Employees must pass one of the following fit test types that follow the protocols and procedures contained in 29CFR1910.134 Appendix A:

- QLFT (Only used to fit negative pressure air purifying respirators that must achieve a fit factor of 100 or less. May be used to test tight fitting atmosphere supplying respirators and tight fitting powered air purifying respirators if tested in the negative pressure mode); or
- QNFT (May be used to fit test a tight fitting half face piece respirator that must achieve a fit factor of 100 greater OR a tight fitting full face piece respirator that must achieve a fit factor of 500 or greater OR tight fitting atmosphere supplying respirators and tight fitting powered air purifying respirators if tested in the negative pressure mode)

### **Proper Use Procedures**

Once the respirator has been properly selected and fitting, its protection efficiency must be maintained by proper use in accordance with 29CFR1910.134(g). Our company ensures with written procedures that respirators are used properly in the workplace.

Our company has used the following checklist to ensure that proper use procedures include coverage of OSHA requirements:

#### *Face Piece Seal Protection*

- Do not permit respirators with tight fitting face pieces to be worn by employees who have:
  1. Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function; or
  2. Any condition that interferes with face-to-face piece sealer valve function.
- If an employee wears corrective glasses or goggles or other personal protective equipment, ensure that such equipment is worn in a manner that does not interfere with the seal of the face piece to the face of the user.
- For all tight fitting respirators, ensure that employees perform a user seal check each time they put on the respirator using the procedures in 29CFR1910.134 Appendix B-1 (User seal check procedures) or procedures recommended by the respirator manufacturer that can be demonstrated are as effective as those in Appendix B-1.

#### *Continuing Respirator Effectiveness*

- Appropriate surveillance must be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, reevaluate the continued effectiveness of the respirator.
- Ensure that employees leave the respirator use area:

1. To wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use; or
  2. If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or
  3. To replace the respirator or the filter, cartridge, or canister elements.
- If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, replace or repair the respirator before allowing the employee to return to the work area.

### *Procedures for IDLH Atmospheres*

Ensure that:

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue.
- The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue.
- The employer or designee authorized to do so by the company, once notified provides necessary assistance appropriate to the situation.
- Employee(s) located outside the IDLH atmospheres are equipped with:
  1. Pressure demand or other positive pressure SCBA's, or a pressure demand or other positive pressure supplied air respirator with auxiliary SCBA; and either;
  2. Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
  3. Equivalent means for rescue where retrieval equipment is not required under the bullet item above this one.

### **Maintenance and Care Procedures**

In order to ensure continuing protection from respiratory protection devices, it is necessary to establish and implement proper maintenance and care procedures and schedules. The Project Manager is responsible to assure proper maintenance and care procedures are being followed. A lax attitude toward maintenance and care will negate successful selection and fit because the devices will not deliver the assumed protection unless they are kept in good working order.

#### *Cleaning and Disinfecting*

Our company provides each respirator user with a respirator that is clean, sanitary, and in good working order. We follow the procedures established in Appendix B-2 of 29CFR1910.134. Our respirators are cleaned and disinfected to the following intervals:

Respirators issued for the exclusive use of an employee will be cleaned as often as necessary to be maintained in a sanitary condition, typically after each workday.

Respirators issued to more than one employee will be cleaned before being worn by a different individual.

Respirators being maintained for emergency use will be cleaned after each use.

Respirators that are used in fit testing and training will be used after each use.

### *Storage*

Storage of respirators must be done properly to ensure that the equipment is protected and not subject to environmental conditions that may cause deterioration. We ensure that respirators are stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they are packed or stored in individual packages. Each employee is responsible to ensure that his assigned respirator is being stored in an acceptable location. In addition, emergency respirators are kept accessible to the work area; stored in compartments and covers that are clearly marked as containing emergency respirators, and stored in accordance with any applicable manufacturer instructions.

### *Inspection*

In order to assure the continued reliability of respirator equipment, it must be inspected on a regular basis. The frequency of inspection is related to the frequency of use. Here is our frequency for inspection:

- All types of respirators used in routine situations will be inspected before each use and during cleaning.
- Respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations, and checked for proper function before and after each use.
- Emergency escape-only respirators will be inspected before being carried into the workplace for use.

Any one of our respirator inspections includes a check:

- For 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, cartridges, canisters or filters.
- Of elastomeric parts for pliability and signs of deterioration.
- For self-contained breathing apparatus, in addition to the above, monthly, we maintain, air and oxygen cylinders in a fully charged state and recharge when the pressure falls to 90% of the manufacturer's recommended pressure level and determine that the regulator and warning devices function properly.

Also for respirators maintained for emergency use, we certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator. This information shall be maintained until replaced following a subsequent certification.

### *Repairs*

Respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following procedures:

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and only with the respirator manufacturer's NIOSH-approved parts designed for the respirator;
- Repairs must be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and
- Reducing and admission valves, regulators, and arms must be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

#### *Discarding of Respirators*

Respirators that fail an inspection or are otherwise not fit for use and cannot be repaired must be discarded. These respirators shall be labeled as not usable, and discarded in a roll off container for disposal.

#### **Air Quality Procedures**

When atmosphere-supplying respirators are being used to protect employees it is essential to ensure that the air being breathed is of sufficiently high quality. Our company's procedures to ensure adequate air quality, quantity, and airflow of breathing air for atmosphere-supplying respirators include coverage for the following OSHA requirements:

#### *Compressed Air, Compressed Oxygen, Liquid Air, and Liquid Oxygen Used for Respirators:*

- Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen.
- Compressed breathing air must meet at least the requirements for Type 1-Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7, 1-1989, to include:
  1. Oxygen content (v/v) of 19.5%
  2. Hydrocarbon (condensed) content of 5 mg/m<sup>3</sup> of air or less
  3. Carbon monoxide (CO) content of 10 ppm or less
  4. Carbon dioxide content of 1,000 ppm or less
  5. Lack of noticeable odor
- Ensure that compressed oxygen is not used in atmosphere supplying respirators that have previously used compressed air.
- Ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

#### *Cylinders Used to Supply Breathing Air to Respirators:*

- Cylinders must be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49CFR173 and 178).
- Cylinders of purchased breathing air must have a certificate of analysis from the supplier that the breathing air meets the requirements for Type 1-Grade D breathing air.

- The moisture content in the cylinder must not exceed a dew point of –50 deg. F (-45.6 deg. C) at 1 atmosphere pressure.

#### *Compressors:*

- Ensure that compressors used to supply breathing air to respirators are constructed and situated so as to:
  1. Prevent the entry of contaminated air into the air-supply system
  2. Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 degrees C) below the ambient temperature.
  3. Have suitable in line air purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters must be maintained and replaced or refurbished periodically following the manufacturer's instructions
  4. Have a tag containing the most recent change date and the signature of the person authorized by our company to perform the change. The tag must be maintained at the compressor.
- For compressors that are not oil-lubricated, ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
- For oil-lubricated compressors, use a high temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high temperature alarms are used, the air supply must be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

#### *Breathing Air Couplings:*

- Ensure that breathing air couplings are incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance must be introduced into breathing airlines.

#### *Breathing Gas Containers:*

- Use breathing gas containers marked in accordance with NIOSH respirator certification standard 42CFR part 84.

#### *Filters, Cartridges, and Canisters:*

- Ensure that a filters, cartridges and canisters used in the workplace are labeled and color coded with the NIOSH approval label and that the label is not removed and remains legible.

### **Training**

The most thorough respiratory protection program will not be effective if employees do not wear respirators, or if wearing them, do not do so properly. The only way to ensure that our employees are aware of the purpose of wearing respirators, and how they are to be worn is to train them. Simply put, employee training is an important part of the respiratory protection program and is essential for correct respirator use.

Our training program is provided by EMA is two-fold; it covers:

1. Respiratory hazards to which our employees are potentially exposed during routine and emergency situations, and
2. Proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.

Both training parts are provided prior to requiring an employee to use a respirator in our workplace. However, if an employee has received training within the last 12 months addressing the seven basic elements of respiratory protection (see below) and our company and the employee can demonstrate that he/she has knowledge of those elements, then that employee is not required to repeat such training initially.

Yet, we do require all of our employees to be retrained annually and when the following situations occur:

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

#### *Seven Basic Elements*

Our employees are trained sufficiently to be able to demonstrate knowledge of at least these seven elements:

1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
2. What the limitations and capabilities of the respirator are.
3. How to use the respirator effectively in emergency situations, including situations in which in which the respirator malfunctions.
4. How to inspect, put on, remove, use, and check the seals of the respirator.
5. What the procedures are for maintenance and storage of the respirator.
6. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
7. The general requirements of 29CFR1910.134.

#### **Recordkeeping**

The Project Manager maintains records for the each particular project as it relates to our respiratory protection program. Upon completion of the project, relevant records, such as medical evaluations and fit testing records, are forwarded and maintained in our corporate offices.

#### *Medical Surveillance*

We have established and do maintain an accurate record for each employee subject to medical surveillance under 29 CFR 1910.134(e), in accordance with 29 CFR 1910.1020.

The records includes at least the following information:

- The name and social security number of the employee.
- A copy of the employee's medical examination results, including the medical history, questionnaire responses, results of any tests, and physician's recommendations.

- Physician's written opinions.
- Any employee medical complaints related to wearing respiratory protection.

We make sure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with 29 CFR 1910.1020.

#### *Fit Testing*

We have established and do maintain an accurate record for each employee that has been administered quantitative and/or qualitative fit tests.

The records includes at least the following information:

- The name and social security number of the employee.
- The date and type of fit test performed.
- Specific make, model, and size of respirator tested.
- The pass/fail results for QLFT's or fit factor and strip chart recording or other recording of the test results for QNFT's.

We make sure that this record is maintained for respirator users until the next fit test is administered.

#### *Training Records*

We keep all employee training records for one (1) year beyond the last date of employment by this company.

#### *Availability*

We will, upon request, make any exposure records available for examination and copying to affected employees, former employees, designated representatives, and the Assistant Secretary, in accordance with 29 CFR 1910.1020(a) through (e) and (g) through (i).

#### *Transfer of Records*

We comply with the requirements concerning transfer of records set forth in 29 CFR 1910.1020 (h). If we ever cease to do business and there is no successor employer to receive and retain the records for the prescribed period, we shall notify the Director at least 90 days prior to disposal and, upon request, transmit them to the Director.

### **Program Evaluation**

It is inherent in respirator use that problems with protection, irritation, breathing resistance, comfort, and other respirator-related factors occasionally arise in most respirator protection programs. Although it is not possible to eliminate all problems associated with respirator use, we try to eliminate as many problems as possible to improve respiratory protection and encourage employee acceptance and safe use of respirators. By having our program administrator thoroughly evaluate and, as necessary, revise our respiratory protection program, we can eliminate problems effectively.

At our company, program evaluation, performed annually by our program administrator, involves the following:

- Conducting evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.
- Regularly consulting employees required to use respirators to assess their views on program effectiveness and to identify any problems. Any problems that are identified during this assessment must be corrected. Factors to assess include, but are not limited to:
  - Respirator fit (including the ability to use the respirator without interfering with effective workplace performance)
  - Appropriate respirator selection for the hazards to which the employee is exposed
  - Proper respirator use under the workplace conditions the employee encounters
  - Proper respirator maintenance

**References**

29CFR1910.134, OSHA Respiratory Protection, and Appendices  
42CFR84, Approval of Respiratory Protection Devices  
ANSI Z88.2, Respiratory Protection  
NIOSH Guide to Industrial Respiratory Protection  
NIOSH Guide to the Selection and Use of Particulate Respirators Certified Under 42CFR84

**Annual Program Evaluation**

This program has been evaluated on the below noted date. All facets of the program have been included in the evaluation. The program meets or exceeds the purpose, policies, and procedures as outlined in this written program.

\_\_\_\_\_

Project Manager

\_\_\_\_\_

Date:

\_\_\_\_\_

Project Manager

\_\_\_\_\_

Date:

\_\_\_\_\_

Project Manager

\_\_\_\_\_

Date:

\_\_\_\_\_

Project Manager

\_\_\_\_\_

Date: