RESPRIATORY PROTECTION PROGRAM

The air you breathe is not necessarily free.

J.A. Rosa Construction, LLC

Health & Safety

Respiratory Protection Program

Contents

Contents

RESPRIATORY PROTECTION PROGRAM

1 PURPOSE

The purpose of this respiratory protection program is to provide a written guideline to protect employees of Rosa Construction from workplace hazards when engineering controls are insufficient or incapable of protecting the employees. This program attempts to provide the necessary information, training, and guidance for the proper section, use, and care of Rosa issued respirators. This program complies with OSHA respiratory protection standard as defined in 29 CFR 1910.134 and other standards and regulations that may be applicable to protect worker safety.

2 SCOPE

This program applies to all employees of Rosa Construction (Rosa) who are required to wear a respirator during any phase of their job performance. In addition, any employee who voluntarily wears a respirator when a respirator is not required is subject to the medical evaluation, maintenance, and storage aspects of this program. Employees who voluntarily wear filtering face pieces (dust masks) are not subject to those same provisions in this plan.

3 PROGRAM ADMINISTRATOR

Mr. James Benway, Rosa's Safety Manager, is responsible for the administration of this program and shall serve as the Respiratory Protection Program Administrator (administrator) as required by OSHA standards.

4 RESPONSIBILITIES

4.1 Rosa Management

It is the responsibility of management to establish and oversee the respiratory protection program and to provide sufficient personnel and financial support to fulfill the duties and obligations outlined herein. As signatory to this program, management agrees to provide Rosa personnel with the training, medical evaluation, and equipment necessary to protect the health of its employees.

4.2 Administrator

It shall be the responsibility of the administrator to implement and administer this program. The responsibilities shall include:

- Identifying tasks, processes or area that may require employees to wear respirators.
- Evaluate or oversee the evaluation of tasks, processes or areas that may require employees to wear respirators.
- Coordinate the selection of respirator protection equipment.
- Develop and coordinate the implementation of procedures for safe usage of respirators
- Oversight of employee training, medical evaluation, and annual fit testing.
- Conduct surveys and/or inspections to verify proper use, storage, and maintenance of employee issued respirators.
- Conduct an annual review and update of this program; and
- Maintain all applicable records.

4.3 Supervisor/Job Foremen

It shall be the responsibility of the field supervisors and job superintendents to implement and to enforce this program on their specific job sites. Their responsibilities include the following:

- Monitoring tasks, processes, and areas where respirators are in use to ensure that employees using respirator protection are using it in accordance with OSHA standards, as instructed, and as outlined in this program.
- Confirming that employees under their supervision have received proper training, medical evaluation, and fit tests as required in this program and that those employees under their direction are familiar with the respiratory protection requirements of their immediate assignment.
- Recognizing, recommending, and reporting tasks, processes, or areas where the use of respirators might be necessary.
- Reporting when employees are voluntarily using respirators when respirators are determined not necessary.
- Coordinating with the administrator to schedule training, medical evaluations, and fit tests.
- Reporting any changes in work conditions that might have an impact on respiratory protection requirements.
- Conducting routine inspections of respiratory equipment of employees under their control. Such inspections shall be for proper use, storage, cleaning, and maintenance; and
- Take appropriate action when employees fail to comply with this program, including the exclusion of employees from tasks requiring respirators when a proper face/respirator seal cannot be obtained due to facial hair, glasses, or other encumbrance.

4.4 Employees

Employees of Rosa Construction shall be responsible for:

- Proper care, cleaning, maintenance, and storage of their assigned respirators.
- Proper use of their respirators whenever and wherever required to meet their assigned job responsibilities.
- Reporting any malfunction or problems with their respirator to their supervisor or the administrator.
- Informing their supervisor or administrator of any respiratory hazards they feel are not being adequately addressed.
- Attend all medical appointments, fit-tests, training classes or other scheduled events relating to their safety and the respiratory protection program.

5 REQUIREMENTS

5.1 Hazard Assessment

The project superintendent should contact the respiratory protection administrator prior to non-routine work that may expose employees to airborne hazardous, oxygen deficient atmospheres, or when employee expresses concern about airborne contaminants. Employees who have concerns regarding airborne hazards encountered during their work shall notify their supervisor.

5.2 Respirator Selection

The program administrator/safety manager will evaluate the potential for hazardous exposures based on the following criteria:

- Identify the characteristics of the contaminant (mist, dust, vapor, gas, and fume).
- Review pertinent physical and chemical properties (via Safety Data Sheets).
- Identify the route(s) of entry.
- Review of the Threshold Limit Value (TLV).
- Determine if engineered controls or modification of job tasks will significantly reduce the employee's potential exposure.
- Monitor for target analytes in the breathing zone and immediate work area.
- Compare the monitoring results to the recommended exposure limits. (Ceiling, short term, time-weighted average).
  Determine the best respirator option using the Respirator Section Criteria below.

The selection is based upon the physical and chemical properties of the air contaminants and the concentration level likely to be encountered by the employee. The program administrator and the safety manager will evaluate the potential hazards and engineering controls to mitigate the danger. If it is determined that engineering controls or modified work methods will not be sufficient to protect the individual workers, Rosa employees may have to wear respirators to complete their tasks.

Assigned Protection Factor

The overall protection afforded by a given respirator design (and mode of operation) may be defined in terms of its assigned protection factor (APF). The APF is a measure of the degree of protection afforded by a respirator (see Table 1), defined as the ratio of the concentration of contaminant in the ambient atmosphere to that inside the respirator under normal use. Respirators should be selected so that the concentration inhaled is within or below the concentration limits as recommended by the National Institute for Occupational Safety and Health.

Respirators shall be used in the following circumstances:

1. Where exposure levels exceed the permissible exposure limit (PEL), during the period necessary to install or implement feasible engineering and modified work practices.
2. In those maintenance and repair activities and during those brief or intermittent operations where exposures exceed the PEL and engineering and work practice controls are not feasible or are not required.
3. Where the employer has implemented all feasible engineering and work practice.

5.3 Approved Respirators

The National Institute for Occupational Safety and Health (NIOSH) certifies all respiratory equipment. Only Rosa employees shall use NIOSH approved devices.

5.3.1.1 Half-Face Air-Purifying Respirator

These respirators are sometimes called “half-face” or “half-mask” respirators since they cover just the nose and mouth. They have removable cartridges that filter out either dust, chemicals, or both. Selecting the correct cartridges is essential since they are designed for particular types of chemicals or dust. A reputable respirator vendor can assist you in selecting the correct cartridges. These cartridges are typically removable and sometimes interchangeable. Cartridges are available for solvents, ammonia, chlorine, acids, and other chemicals. The cartridges must be changed out or replaced periodically, especially for chemicals, since they can absorb only so much contaminant before breakthrough occurs. A few cartridges are equipped with end-of-service indicators that show when a cartridge should be replaced. Most cartridges do not have this indicator, and you must develop a change-out schedule to prevent breakthrough. The change-out schedule is based on the chemical concentration, physical work effort, temperature, and humidity. Many respirator manufacturers have cartridge change schedule calculators available on the Internet.

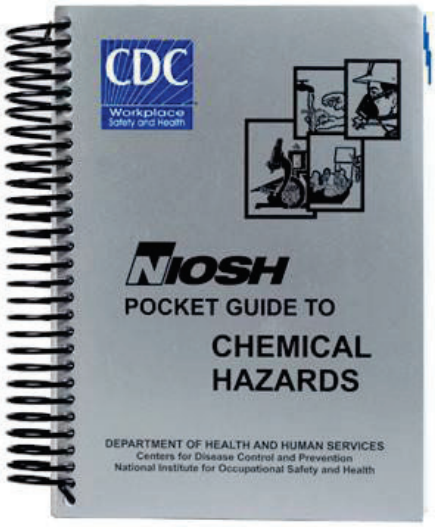
5.3.1.2 Full-Face Air-Purifying Respirator

In some situations, you may need or want to use full-face respirators. This type of respirator is used when the air contaminant irritates the eyes. They also provide higher protection to the lungs since they tend to fit tighter and are less prone to leaking. These respirators also have replaceable cartridges that must be changed on a regular basis as described above for half-face respirators.

Airline Respirator

Tank-type respirator (SCBA)

5.3.1.3 Supplied Air Respirators and Self-Contained Breathing Apparatus (SCBA)



Rarely will a Rosa employee need a supplied air respirator. Supplied air respirators are required when a respiratory hazard is considered "immediately dangerous to life or health" (also called "IDLH").

Respiratory hazards are classified as IDLH as follows:

- There is a lack of oxygen (less than 19.5% oxygen)
- There is too much oxygen (more than 23.5% - a fire hazard)
- You know there are toxic chemicals in the air, but you do not know how much

These situations may include large chemical spills or leaks, entering a confined space where there is lack of oxygen or elevated levels of air contaminants, or working around extremely toxic chemicals. They may also be necessary working at hazardous waste sites, during sandblasting or in some spray-painting operations. "Supplied air," means that clean air is provided by means of an air hose from a compressor or a pressurized air tank.

At this time, Rosa Construction employees are not authorized or trained to work in IDLH conditions.

Table 1 Assigned Protection Factors (APF) for Respirator Types	
If the respirator is an	**Then the APF is**
Air-purifying respirator with a: • Half-facepiece • Full-facepiece **Note:** Half-facepiece includes ¼ masks, filtering facepieces (dust masks), and elastomeric (rubber) facepieces.	 10 50
Powered air-purifying respirator (PAPR) with a: • Loose-fitting facepiece • Half-facepiece • Full-facepiece, equipped with HEPA filters, chemical cartridges, or canisters • Hood or helmet, equipped with HEPA filters, chemical cartridges, or canisters	 25 50 1000 1000
Air-line respirator with a: • Half-facepiece and designed to operate in demand mode • Loose-fitting facepiece and designed to operate In continuous flow mode • Half-facepiece and designed to operate in continuous-flow, **or** pressure-demand mode • Full-facepiece and designed to operate in demand mode. • Full-facepiece and designed to operate in continuous-flow or pressure-demand mode • Helmet or hood and designed to operate in continuous-flow mode	 10 25 50 100 1000 1000
Self-contained breathing apparatus (SCBA) with a tight fitting: • Half-facepiece and designed to operate in demand mode • Full facepiece and designed to operate in demand mode • Full-facepiece and designed to operate in pressure-demand mode	 10 100 10,000
Combination respirators: • Find the APF for each type of respirator in the combination. • Use the lower APF to represent the combination	 The lowest value

5.4 Respirator Availability

Whenever conditions as outlined in section 5.2 warrant the use of a respirator, Rosa employees shall be assigned respirators appropriate to the task at no cost to them.

- ARPs shall be assigned to an individual employee for their exclusive use after passing a fit test.
- The respirator shall be marked to identify the specific respirator with the individual employee.
- The program administrator shall maintain a log with the respirator ID, employee's name, conditions of the equipment, and date of issue.

Employees assigned respiratory protection equipment shall use such equipment in accordance with this program, including undergoing periodic medical surveillance, annual fit-tests, training, routine maintenance of their equipment, and periodic equipment inspections.
Employees using respirators on a voluntary base are subject to the following:

- Employees are subject to periodic medical surveillance, annual fit-tests, training, routine maintenance of their equipment, and periodic equipment inspections.
- Employees shall notify their supervisor when voluntarily wearing respirators.
- Employees shall not voluntarily use respirators if such use creates an additional hazard.

Employees using respirators on a voluntary base shall be provided with a copy of 29 CFR 1910.134 Appendix
D. Employees using a dust mask (filtering facepiece) are not subject to this program.

5.5 Respirator Use

Rosa employees shall be familiar with the following limitations regarding respirator use:

1. Air purifying respirators shall not be used in an oxygen deficient atmosphere, or when airborne contaminants are not known.
2. Respirator equipment, i.e., cartridges and respirators, are not interchangeable. Use North cartridges with North respirators, 3M with 3M, MSA, with MSA respirators.
3. Use only the cartridge that is appropriate for the specific hazard.
4. Facial hair, temple bars for eyeglasses, head coverings, and jewelry can interfere with the seal of the respirator.

If respiratory protective equipment is required for a job, no beards or long sideburns will be allowed, as they will not permit a good face seal. No eyeglasses may be worn with a full-face piece respirator unless the face piece is fitted with an adapter.

Donning the Respirator

These instructions should be followed each time the respirator is worn and should be preceded by a visual inspection of the unit.

- Hold the respirator in your hands with the straps hanging forward over the front.
- Place the respirator over your nose and mouth.
- Place the bottom strap over your head, below the ears.
- Untwist the strap if necessary.
- Place the top head strap over your head.
- Untwist the strap if necessary.
- Adjust each strap for a comfortable fit by pulling on each side.
- Adjust the position of the mask in the front by adjusting the center top strap.
- Evaluate the tightness of the fit by covering the air inlets.
- Suck in air and hold for 10 seconds.

If you detect a leak, adjust the respirator accordingly.

A user seal-check shall be performed each time a tight-fitting respirator is used. If an employee feels the seal of their respirator has been compromised, they should immediately evacuate the hazardous environment.

5.6 Fit-Test for a Safe Seal

Employees required to wear a respirator must be fitted properly and evaluated for a face seal prior to use of the respirator in a contaminated area. Manufacturers provide fitting instructions and use limitations on the product packaging.

Qualitative fit testing is acceptable for most hazards in the workplace. (Refer to OSHA standards for specific direction.)

There are two categories of fitting tests:

1. **Qualitative** tests include:

    a. Negative Pressure Test - Close off air inlet of canister, cartridge, or filter with palms, inhale gently so that the face piece collapses. Hold breath for 10 seconds, if the face piece remains slightly collapsed and no inward leakage is detected, the respirator has an adequate fit.

    b. Positive Pressure Test - Close off exhalation valve, exhale gently into the face piece. If a positive pressure can be built up inside the face piece without excess outward leakage, the fit is good. Take care not to disturb placement of the face piece by placing undue pressure on the mask with hand.

    c. Banana Oil Testing - A worker is subjected to isoamyl acetate vapor (banana oil) adjacent to sealing surfaces of the respirator face piece. If there is a detectable odor inside the mask, then the face piece should be refitted in clean air; and the test repeated, switching respirators, if necessary, until a fit is made.

d. Irritant Smoke Test - Stannic chloride is impregnated on pumice in glass tubes. When the tube ends are broken, irritant smoke is released. The tester puffs smoke towards the wearer from increasingly shorter distances until the tube is within about 6 inches of the respirator, where the smoke is then directed toward potential sources of leakage. At this point, if no leakage has been detected, the wearer may cautiously begin various head movements to simulate use in particular job. This test has an advantage in that the wearer usually reacts involuntarily to leakage by coughing or sneezing. If there is a reaction, stop producing smoke immediately. The irritant smoke test is valid for testing both air-purifying and atmosphere-supplying respirators; but an air-purifying respirator must have high efficiency filters.

2. **Quantitative** fit testing uses instruments to measure (quantify) the amount of test chemical outside vs. inside of the respirator. This type of test expresses the amount of leakage as a percentage of the challenge atmosphere outside of the mask. This test is excellent when face piece leakage must be minimized for work in IDLH atmospheres.

When fitting any face piece the head straps must be comfortable. Tightening the straps will sometimes reduce leakage, but the wearer may be unable to tolerate the respirator for any length of time; thus invalidating the fitting test for a normal job routine.

5.7 Cartridge Change Out

When Air purifying respirators (APR) are used, cartridges shall be changed out as indicated by the End of Service Life Indicator (ESLI). If no such indicator is available, the program administrator will develop a change out program schedule based on the hazards, concentrations, workload, ambient conditions, and manufacturer's recommendations.

Particulate filters should be changed whenever the employee begins to experience increased resistance when breathing.

5.8 Routine Maintenance

Maintenance of respiratory protective equipment is essential to the overall effectiveness of the respirator. Wearing a poorly maintained or malfunctioning respirator could be more hazardous than not having a respirator. Once assigned a respirator, the employee is solely responsible for its maintenance and upkeep.

Respirators should be inspected for defects before and after each use. Inspect for tightness of the connections, fit of component parts and adjustment of straps on the face piece. Verify there are no cracks, cuts or other conditions that would jeopardize the integrity of the respirator.

Respirators must be cleaned and sanitized regularly. The program administrator will provide specific cleaning wipes designed for respirator equipment cleaning. This does not mean employees should wait to clean their equipment until the safety manager provides them with cleaning wipes. In the event wipes are not available, a mild soapy water solution followed by a rinse and hand drying will suffice.

The respirators should be stored in plastic, zip-lock bags and in a manner that protects them from dust, direct sunlight, extreme heat or cold, excessive moisture or damaging chemicals. They should be stored so that the facepiece and valves are not resting in an abnormal position. Respirators should NOT be stored in lockers or toolboxes, or anywhere else they may be crushed or damaged.

Respirator equipment assigned to Rosa employees will be subject to period inspection by the program administrator, project manager, or job supervisor.

5.8.1 Inspection and Maintenance of Head Protection

A common method of cleaning shells is dipping them in hot water (approximately 140□F) containing a good detergent for at least a minute. Shells should then be scrubbed and rinsed in clear hot water. After rinsing, the shell should be carefully inspected for any signs of damage.

All components, shells, suspensions, headbands, sweatbands, and any accessories, should be visually inspected daily for signs of dents, cracks, penetration, or any other damage that might reduce the degree of safety originally provided.

Users are cautioned that if unusual conditions occur (such as higher or lower extreme temperatures than described in the standards), or if there are signs of abuse or mutilation of the helmet or any component, the margin of safety may be reduced. If damage is suspected, the helmet must be replaced.
Helmets should not be stored or carried on the rear-window shelf of an automobile, since sunlight and extreme heat may adversely affect the degree of protection.

5.8.2 Inspection and Maintenance of Eye and Face Protection

It is essential that the lenses of eye protectors be kept clean. Continuous vision through dirty lenses can cause eyestrain - often an excuse for not wearing the eye protectors. Daily inspection and cleaning of the eye protector with soap and hot water, or with a cleaning solution and towel, is recommended.
Pitted lenses, like dirty lenses, can be a source of reduced vision. Deep scratches or excessively pitted lenses are apt to break more readily. They should be replaced.

Slack, worn-out, sweat-soaked, or twisted headbands do not hold the eye protector in proper position. Visual inspection can determine when the headband elasticity is reduced to a point beyond proper function.

Goggles should be kept in case when not in use and should be given the same care as one's own glasses, since the frame, nose pads, and temples can be damaged by rough usage.

Personal protective equipment, which has been previously used, should be disinfected before being issued to another employee. Even when each employee is assigned protective equipment for extended periods, it is recommended that such equipment be cleaned and disinfected regularly.

Several methods for disinfecting eye protective equipment are acceptable. The most effective method is to thoroughly clean all parts with soap and warm water. Carefully rinse all traces of soap and replace defective parts with new ones.

The dry parts or items should be placed in a clean, dust-proof container, such as a box, bag, or plastic envelope, to protect them until reissue.

5.8.3 Inspection of Personal Protective Clothing

1. Tyvek suits

A. Inspection Before Use

1) Ensure proper selection.
2) Visual inspection:
   - tears
   - malfunctioning closures
   - non-uniform coatings
   - imperfect seams
3) Hold up to light to check for pinholes.

4) Flex product, observe for:
   - cracks
   - other signs of deterioration.
5) If PPE has been used previously, inspect inside and out for evidence of chemical attack.
   - discoloration
   - swelling
   - stiffness
   - softening

B. Inspection During Use
1) Punctures/tears
2) Evidence of chemical attack
3) Closure failure
4) Seam discontinuities

2. Gloves

A. Inspection Before Use
1) Ensure proper selection
2) Inspect gloves before use by quickly closing the open and rolling gauntlet towards fingers. No air should escape.

B. Inspection During Use
1) Punctures/tears
2) Evidence of chemical attack
3) Fully Encapsulating Suit

2. Fully Encapsulating Suit

A. Inspection Before Use
1) Check operation of pressure relief valves
2) Inspect the fitting of wrists, ankles, and neck
3) Check face-shield for:
   - cracks
   - glazing
   - fogginess

5.8.4 Air Purifying Respirators

A. Examine the face-piece for:
   1) excessive dirt
   2) cracks, tears, holes, or distortion from improper storage
   3) inflexibility
   4) cracked or badly scratched lenses
   5) cracked or broken air-purifying element holder, badly worn threads or missing gaskets.

B. Examine the head straps/ head harness for:
   1) breaks
   2) loss of elasticity
   3) broken of malfunctioning buckles, worn serrations on head harness

C. Examine the exhalation valve for:
   1) foreign material
   2) cracks, tears, distortion
   3) improper insertion/ installation
   4) missing or defective valve cover

D. Examine the air purifying elements for:
   1) incorrect cartridge/ canister
   2) incorrect installation, loose connections, missing or worn gaskets, or cross-threading
   3) expired shelf life
   4) cracks or dents
   5) evidence of prior use

E. Examine the corrugated breathing tube for:
   1) broken or missing end connectors
   2) missing or loose hose clamps
   3) deterioration

F. Examine the harness for:
   1) damage or wear
   2) broken harness straps or fasteners

5.8.5 Atmosphere Supplying Respirators

A. All equipment inspections are used for air-purifying respirators.
B. Inspect cylinder:
   1) full tank
   2) hydrostatic test date
   3) operations of cylinder valve
C. Inspect harness
   1) damage, tears, broken or malfunctioning buckles

D. High pressure hose
   1) deterioration/leaks

E. Regulator:
   1) leaks
   2) operation of mainline and bypass valves

F. Alarm system:
   1) verify operation

5.8.6 Signs of PPE Malfunctioning

Since PPE may unexpectedly malfunction or exceed its limitations, you must be constantly aware of the early warning signs of breakthrough.

1. Degradation of the protective ensemble
2. Perception of odors
3. Skin irritation
4. Unusual residues on PPE
5. Discomfort
6. Resistance to breathing
7. Fatigue
8. Interference with sensory perception
9. Restriction of movement
10. Personal responses such as rapid pulse, nausea, and chest pain.

5.8.7 Cleaning and Sanitizing Respirators

1. Don safety glasses and gloves.
2. Fill a clean 3-gallon bucket with 2 gallons of 120□F water. Add 2 packages of MSA Cleaner/Sanitizer II and mix.
3. Dismantle respirator as appropriate.
4. Rinse face piece in warm (120□F) water then place into sanitizer solution for a three-minute period. Unit should be cleaned using a soft brush or sponge. Be sure to wear gloves and safety glasses while performing cleaning process.
5. Thoroughly rinse units in clean warm water and place on clean paper towels.
6. Allow the face piece and breathing tube to air dry.

6 Medical Surveillance

Each employee required to wear a respirator will fill out an OSHA Medical Evaluation Questionnaire. The Medical Evaluation Questionnaire (29 CFR 1910.134 Appendix C) will be read by an officially licensed health care professional (PLHCP). If the PLHCP determines a follow-up examination is necessary, the employee shall make themselves available, during regular business hours, for the follow-up examination. Once the PLHCP has performed all the required duties a written recommendation shall be rendered by the PLHCP for the type of respirator that can be worn. The program administrator will coordinate annual medical evaluations. This evaluation will be free to the employee.

In addition to the mandatory medical evaluation required by OSHA, True Blue employees undergo an annual medical exam that includes:

- Audiogram and analysis
- Organ Function Analysis (Health Status 5)
- Pulmonary Function, and
- Metals analysis (lead and zinc)

Additional medical evaluations may be scheduled if:

1. A PLHCP, program administrator, or job supervisor determines that the employee needs to be reevaluated or
2. A change in the workplace may result in a substantial increase in physiological burden to the employee.

Employees should be physically fit and able to perform job duties while wearing a respirator. If a physician determines that a worker has a severe cardiovascular or pulmonary dysfunction that would be aggravated by wearing a respirator; then by a written PLHCP opinion, that person would be exempted from a job requiring the use of a respirator.

7 Training

Employees who are required to use a respirator shall be trained when they are issued a respirator and annually thereafter. Each employee will have an opportunity to oversee the respirator, check different fitting techniques, test face piece-to-face seal, and to wear the respirator in normal air prior to starting a job. In addition there should be a discussion of engineering and administrative controls in use, and why respirators are needed.

Addition training elements should include:

- Recognition of the respirator's limitations and capabilities
- End of Service Life Indicators
- Proper care and storage.

Supervisors who oversee the daily activities of workers who wear respirators should be familiar with the following:

1. Work requirements and conditions necessitating the use of respirator protective equipment may include:

   (a) Time of exposure to a contaminant
   (b) The activity and mobility of the worker
   (c) Eye protection needed
   (d) Temperature extremes
   (e) Face piece-to-face seal of distinct types of equipment

2. Nature and extent of hazards to which a worker may be exposed.

   (a) Type of contaminant and its concentration
   (b) Acute (short term) or chronic (long term) exposure potential

3. The general operation of the program; maintenance and inspection of equipment, issuance of respirators, and control of their use.

8 Program Evaluation & Record Keeping

The program administrator shall conduct a program evaluation annually to determine the program's effectiveness, identify any problems, and implement any corrective measures.

In addition to annual evaluations, the program administrator will maintain medical evaluation records, fit-test results, and training data for employees covered in this program.

This is NOT proper respiratory protection!!