

Model Respiratory Protection Program

Before engaging in any lead abatement project, the lead abatement contractor primarily responsible for the project shall prepare a written respirator protection plan according to the U. S. Occupational Safety and Health Administration standards on respiratory protection, 29 C.F.R. 1910.134 and Appendix D of 29 C.F.R 1926.62, and must make the plan available to the Department of Health and all lead abatement workers at the project site.

The following is a model respiratory protection program. This model was created to help lead abatement contractors in understanding the importance of a respiratory protection program.

**Ohio Department of Health
Respiratory Protection Program for Employees
November 27, 1995**

Introduction

This program has been developed to comply with paragraph (F)(3) of Ohio Administrative Code (O.A.C.) rule 3701-32-02 the OSHA Construction Lead Standard 29 C.F.R. 1926.62 and OSHA Respiratory Protection Standard 29 C.F.R. 1910.134.

This respiratory protection program is intended for those employees who work in lead abatement. This standard does not outline situations where other hazards are involved. All employees will be trained and instructed in the proper use of respirators and their limitations. Persons should not be assigned to tasks requiring the use of a respirator unless it has been determined that they are physically able to perform the work and use the equipment. Medical exams will be offered to all employees of **Model Company, Inc.** prior to respirator training and instruction.

When is a respirator necessary in lead abatement?

Model Company, Inc. will provide employees respirators in the following situations:

- 1) When the exposure to lead exceeds the PEL (Permissible Exposure Limit,) a respirator is required.
- 2) In work situations when engineering controls and work practices do not lower exposure to or below the PEL, the employee must wear a respirator.
- 3) Whenever an employee requests a respirator, one will be provided.
- 4) Until employee exposure can be determined, a respirator must be worn.

The Permissible Exposure Limit for lead is $50\text{Fg}/\text{m}^3$ over an eight-hour workshift. If an employee's exposure to lead **exceeds** this amount, a respirator must be worn. The employee has the right to request a respirator if the exposure falls below $50\text{Fg}/\text{m}^3$. A respirator will be provided by Model Company, Inc. whenever an employee requests one.

Certain work practices and engineering controls will be used to try to lower the exposure to lead. Sometimes these practices won't lower the exposure below $50\text{Fg}/\text{m}^3$. A respirator must be worn in these conditions. Anytime the exposure exceeds the PEL a respirator must be worn.

When first starting any lead abatement project, respirators will be worn until the exposure to the employee is determined. Model Company, Inc. will protect the employee as though they are exposed above the PEL. The type of respirator worn should be based on the work task being done.

The following tasks are assumed not to be more than 10 X PEL before monitoring:

*Where paint or coatings containing lead are present:

- Manual demolition of structures
- Manual scraping or sanding
- Heat gun applications
- Power tool cleaning with dust collection systems

*Spray painting with lead paint

Tasks assumed to be more than 10 X PEL but less than 50 X PEL, before monitoring

*Where paint or coatings containing lead are present:

- Rivet busting
- Power tool cleaning without a dust collection system
- Clean-up activities where dry expendable abrasives are used
- Abrasive blasting enclosure movement and removal

*Using mortar containing lead

*Lead Burning

Tasks assumed to be more than 50 X PEL, before monitoring

*Where paint or coatings containing lead are present:

- Abrasive blasting
- Welding
- Cutting and torch burning

Table One should be used in combination with the outline above to select a respirator.

If the exposure of the work task is known, the appropriate respirator can be selected.

Model Company, Inc. will provide respirators approved by NIOSH (Nation Institute for Occupation Safety and Health.) If the employee provides his/her own respirator, it will be the responsibility of **Model Company, Inc.** to ensure that it is NIOSH approved.

Model Company, Inc. is required to provide a powered air purifying respirator instead of the respirator specified in Table One if the employee requests one. However, if the PAPR does not provide enough protection for the working condition, the employee will be provided with a respirator that will give adequate protection.

It should be noted that the air purifying respirators that are usually worn while doing

lead abatement may not be used in type "C" situations (oxygen deficient). If a supplied air respirator is required, Grade D air shall be supplied. Special training and instruction shall be required when the employee works in oxygen deficient atmospheres.

If it is anticipated that the employee will be exposed to other hazards that require respiratory protection, the employee shall receive training on that particular hazard. The employee must be protected against all hazards to which they are exposed.

Table One

<u>Airborne Concentration of Lead</u>	<u>Required Respirator</u>
Not in excess of 500 Fg/m ³ high	*1/2 mask air purifying respirator with efficiency filters
operated	*1/2 mask supplied air respirator in negative pressure mode
Not in excess of 1,250 Fg/m ³ air	*Loose fitting hood or helmet powered purifying respirator with high
efficiency	filters.
respirator	*Hood or helmet supplied air operated in a continuous-flow mode
Not in excess of 2500 Fg/m ³ with	*Full facepiece air purifying respirator high efficiency filters
air	*Tight fitting powered air purifying respirator with high efficiency filters
	*Full facepiece supplied air respirator operated in demand mode.
	*1/2 mask or full facepiece supplied respirator operated in demand mode.
	*Full facepiece self-contained

breathing	apparatus operated in demand mode.
Not in excess of 50,000 Fg/m ³ operated	*1/2 mask supplied air respirator in pressure demand or other positive pressure mode.
Not in excess of 100,000 Fg/m ³	*Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode
Greater than 100,000 Fg/m ³ pressure	*Full facepiece SCBA operated in demand or other positive-pressure

Qualitative and Quantitative Fit Tests

For each employee who intends to wear a respirator, the employer shall conduct either a quantitative or qualitative fit test at the time of initial fitting and at least every year thereafter.

The qualitative and quantitative fit test must be done in accordance with Appendix D in the Lead in Construction Standard, 29 CFR 1926.62. The appendix includes information about fit test protocols. Model Company, Inc will follow the fit test protocols outlined in the standard.

What is the difference between a qualitative and quantitative fit test?

The quantitative fit test involves a series of tests in which the employee is required to perform. The tests include a period of normal breathing, a period of deep breathing, turning your head side-to-side, moving head up and down, talking, smiling and grimacing, bending forward, jogging in place and another short period of normal breathing. Each test shall last for one minute. The quantitative fit factor is based on a comparison of the air inside the respirator mask to that of the air outside the mask.

A quantitative fit test will give you a numerical fit factor. OSHA requires that you have at least a fit factor of 10 if you intend to wear a half-mask respirator. The quantitative fit test may be used for testing the fit of a half-mask respirator where they are allowed to be worn. The following page gives an example of a quantitative fit test strip chart report.

Generally the quantitative fit test involves more time and bulky equipment and expensive electronic devices. The quantitative fit test applies only to negative

pressure nonpowered air-purifying respirators.

The qualitative fit test should be conducted on each type of respirator. This test does not involve a numerical readout. The test is subjective and is dependent on the employee's response to the test agent or chemical.

There are three tests that are generally used to conduct qualitative fit tests. Irritant smoke, the odorous vapor test and the taste test.

The irritant smoke test involves directing a smoke tube towards the respirator. The employee will give a voluntary response such as a cough or sneeze if there is a leak in the facepiece-to-face seal.

The vaporous odor test usually involves the use of isoamyl acetate (banana oil). This particular chemical gives off a strong odor. The vapor is released into the air near the respirator. If the employee smells the isoamyl acetate, there is a leak in the facepiece-to-face seal.

The employer shall maintain a record of the fit test. The record shall contain the name of the employee, type of respirator, brand and size of the respirator, date of the test and the strip chart if quantitative fit test methods were used.

Quantitative and qualitative fit tests are used to help you pick out an appropriate respirator. If a particular respirator fails the test, another respirator shall be selected. The employee shall keep trying different sizes and models until the respirator fits correctly.

Sometimes, the facial features or structure may prevent the employee from wearing any respirator at all. This problem, however, is usually very rare.

Fit Checks

Every employee who wears a respirator should receive instructions on proper fit. Instructions should show how to wear the respirator, how to adjust it and how to ensure a proper fit.

Primarily, a respirator should not be worn in conditions that prevent a good face seal. Several factors can contribute to an improper fit. Facial hair such as beards, mustaches, sideburns, skull caps, etc., prevents a good face seal.

If wearing a full facepiece respirator, corrective lenses can prevent a good face seal. The temple bars of the glasses extend through the sealing edge of the respirator. Therefore, it is the policy of **Model Company, Inc.** that corrective lenses should not be worn with full facepiece respirators. If corrective lenses are required, you must insure that they will not interfere with a proper seal. **Model Company, Inc.** prohibits employees from wearing contact lenses with any type of respirator.

Model Company, Inc. will provide full facepiece respirators with mounted lenses fit to your prescription. Please notify the Safety & Health Coordinator if you are an employee who wears corrective lenses or contact lenses.

Each employee should know how to put on the respirator and how it can be adjusted. The employee should get a good feel for determining whether he/she is getting a good face seal. The best way for the individual to check for leaks is to perform negative-pressure and positive-pressure fit checks. Fit checks should be done each time the employee puts the respirator on.

The following is an explanation of negative-pressure and positive-pressure fit checks:

Negative-pressure fit check- Close off the inlet opening of the canister or cartridge by covering with the palm of the hand or by replacing the filter seal. Inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

Positive-Pressure fit check- Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

Maintenance and Cleaning of Respirators

Respirators should be properly maintained and stored. After each use, the respirators should be cleaned, disinfected and inspected.

Before leaving the work area, the worker should wipe down the respirator with a wet cloth. This process will remove larger pieces of lead contaminated material and should be done with the respirator still on.

In the process of decontamination, the employee should remove and dispose of all contaminated clothing and shower before removing the respirator. While showering the respirator should be sprayed with water to remove all larger lead contaminated materials. After the respirator is thoroughly wet, it should be removed. While still in the decontamination unit, the employee should wipe down the respirator.

After decontamination and before storage, the respirator should be rinsed in a warm water. All cartridges and elastic straps should not be washed. A mild detergent shall

be used to aid in removing excess dirt and debris. Thoroughly rinse the respirator and soak in disinfectant for approximately two minutes. Wiping with alcohol swabs may be used in the place of soaking in disinfectant.

The respirator must be completely dry and free from water before storing. All cartridges and elastic straps shall be reassembled. At this time the respirator should be inspected for tears and deterioration. The tightness of the connections and the condition of the facepiece, headbands, valves, connecting tube, and canisters should be checked.

Respirators shall be stored so that all valves are resting in a normal position. The respirators should be stored in an area that is free from dust, sunlight, excessive moisture or damaging chemicals. The respirators should also be accessible to all workers and stored in an area free from danger.

Any repairs or adjustments shall be done by the manufacturer. No employee shall attempt to replace component parts. This should be done by **Model Company, Inc's** trained Safety and Health officer.