

Respiratory Protection

4/01/07

The OSHA standard for **Respiratory Protection**, Title 29 CFR 1910.134 is one of the most frequently cited OSHA standards.

Overview of Standard

This standard directs employers to establish and maintain a respiratory protection program to protect employees from contaminants that contribute to or cause occupational diseases. The standard contains requirements for program administration, worksite-specific procedures, respirator selection, employee training, fit testing, medical evaluation, respirator use, cleaning, maintenance and repair.

Top 5 Sections of Standard Cited by OSHA

- Failure to establish and implement a written program - 134 (C)(1)
- Failure to conduct medical evaluations - 134(e)(1)
- Failure to provide Appendix D when voluntary use deemed permissible - 134 - (C)(2)(I)
- Failure to fit test initially, change of respirator and annually thereafter - 134 - (f)(2)
- Failure to ID & evaluate respiratory hazards - 134 (d)(1)(iii)

Failure to establish & implement a written program

1910.134 (C)(1) - This section of the standard establishes the requirements that must be included in the written program and implemented for an effective program. The written program must include:

- Worksite-specific procedures.
- Procedure for selection of respirators.
- Medical evaluation.
- Fit testing Procedure.
- Procedure for proper use of respirator.
- Procedures for cleaning, disinfecting, storing, inspecting, repairing and discarding.
- Procedure to ensure proper air for atmosphere- supplied respirators.
- Training in use limitations and maintenance.
- Procedures for evaluating program.

Failure to conduct medical evaluation

1910.134(e)(1) - The standard requires that a medical evaluation be conducted of the employee before the employee is fit tested or required to use a respirator. The purpose of the medical evaluation is to determine if the employee is medically able to use a respirator. A physician or a licensed Health Care Professional (HCP) must conduct the medical evaluation. The standard also requires that Appendix C "*medical evaluation questionnaire*" be utilized as part of the medical evaluation. Follow-up exams are required if considered necessary by the physician or HCP or if any of the following conditions are met:

- Employee reports medical signs or symptoms related to the use of the respirator.
- HCP makes recommendation.
- Observations or evaluations that indicate need for reevaluation.
- Change in workplace that affects physical burden.
- When employee gives a positive response to any question among questions 1 through 8 in Section 2, Part A of Appendix C.

Failure to provide Appendix D for voluntary use

1910.134(C)(2)(I) - The employer must determine if the voluntary use of a respirator by an employee will create a hazard for the employee. If it is determined that the employee can use the respirator safely, the employee must be provided with a copy of Appendix D in lieu of any formal training. Medical evaluations are not required for voluntary use of N-95 dust masks. Other type respirators worn voluntarily require a written program and a medical evaluation. Fit tests are not required for voluntary use of respirators if it is determined that the atmospheres where the respirators are worn are not hazardous.

Failure to fit test

1910.134(f)(2) - The standard requires that fit tests be conducted before the employee is required to use a respirator. The appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) is required for tight fitting face piece respirators. Fit tests are required annually or if there is a change in the type of respirator used or if there is a change in the physical condition of the employee that could affect the fit of the respirator.

Quantitative fit test (QNFT) Uses an instrument to take a sample from within the wearer's breathing zone that measures leakage.

Qualitative fit test (QLFT) It is a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent. (Banana oil, Saccharin solution and Irritant smoke.)

Failure to ID & evaluate hazards

1910.134(d)(1)(iii) - The standard requires the employer to identify and evaluate the respiratory hazard(s) in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the employer cannot identify or reasonably estimate the employee exposure, the employer shall consider the atmosphere to be IDLH.

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

This concludes the review of the 5 most frequently cited sections of the Respiratory Protection standard.

New respirator selection requirements

The Respiratory Protection standard was revised, effective 11/22/06, to include new Assigned Protection Factors (APFs) and Maximum Use Concentrations (MUCs). Employers must follow these new requirements and use APFs to select the appropriate type of respirator based on the exposure limit of a contaminant and the level of the contaminant in the workplace.

APFs are numbers that indicate the level of workplace respiratory protection that a respirator or class of respirators is expected to provide to employees when used as part of an effective respiratory protection program. The APF table can be found in the standard under 1910.134(d)(3)(I)(A) and (B) or in your GAWDA OSHA Manual, Section 32.

MUC is the maximum concentration of a contaminant in which a particular type of respirator can be used.

Employers must select respirators by comparing the exposure level found in the workplace and the maximum concentration of the contaminant in which a particular type of respirator can be used (the Maximum Use Concentration, or MUC). The MUC can be determined by multiplying the respirator's APF by the contaminant's exposure limit. If the workplace level of the contaminant is expected to exceed the respirator's MUC, the employer must choose a respirator with a higher APF.

In this example case, the MUC is determined by multiplying the respirator's APF by the contaminant's exposure limit.

$$\text{Example - (APF x PEL) = MUC}$$

A half-mask air-purifying respirator has an APF of 10.

Acetone has a PEL of 1,000ppm.

The MUC is 10,000 (10 x 1,000) = 10,000ppm

In this example case, if the workplace level of acetone is expected to exceed 10,000ppm, the respirator's MUC, the employer must choose a respirator with a higher APF.

OSHA Respiratory Protection Standard

The information provided in this document is not the complete content of the respiratory protection standard, 29 CFR 1910.134. Refer to the standard for complete detailed requirements or refer to your GAWDA OSHA Manual, Section 32 for additional information.