



Boulder Valley School District
File: EBE-R2
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RESPIRATORY PROTECTION PROGRAM FOR ASBESTOS

The Board of Education recognizes that exposure to asbestos fibers may result in the development of cancer and other severe or fatal diseases, such as asbestosis. The prevention of exposure to airborne asbestos is a matter of the most compelling concern to the District. Workers may underestimate or ignore the health risks associated with exposure to asbestos because the fibers presenting the greatest hazard are invisible to the naked eye, and the development of asbestos-related diseases usually occurs many years after exposure.

The best protection against asbestos exposure is the elimination of asbestos-containing material. So long as the material is present, however, numerous causes, including operations and maintenance activities, can cause disturbances, releasing fibers into the air. Although encapsulation, engineering controls, and work practices may significantly reduce exposure to asbestos, such measures cannot always reduce exposure to or below the permissible limit established by the Environmental Protection Agency (EPA). In those instances, employees are required to wear appropriate respiratory protection.

In recognition of the hazard presented by the presence of asbestos in the nation's schools, the United States Congress directed the EPA to promulgate regulations for the control and elimination of asbestos exposures. In response, the EPA promulgated extensive regulations, including provisions for operations and maintenance activities. The regulations also made applicable to School District employees the worker protection regulations previously promulgated by the EPA for asbestos abatement projects. These regulations, at 40 C.F.R. 763.121(h), prescribe the requirements for respiratory protection for asbestos fibers.

To protect employee health and comply with federal regulations, a respiratory protection program for asbestos shall be instituted. The respiratory protection program is an integral part of the District's carefully planned and thorough response to the presence of asbestos in the schools. The Respiratory Protection Program Administrator shall ensure that the respiratory protection program for asbestos fibers complies with the requirements of 40 C.F.R. 763.121.

Respirator Selection: The Program Administrator will select the proper respirator based upon a determination of the extent of asbestos exposure. Only those respirators approved by the National Institute for Occupational Safety and Health or the Mine Safety and Health Administration for use in asbestos-contaminated environments shall be used.

Under 40 C.F.R. 763.121(c), the current permissible exposure limit (PEL) for asbestos is .2 fibers per cubic centimeter of air as an eight-hour time-weighted average. Respirators shall be selected according to the following airborne asbestos-fiber concentrations:

Not in excess of 2 fibers/cubic centimeter (10 times PEL): half-mask negative-pressure respirator equipped with high-efficiency filters.

Not in excess of 10 fibers/cubic centimeter (50 times PEL): full face piece negative-pressure respirator equipped with high-efficiency filters.

Not in excess of 20 fibers/cubic centimeter (100 times PEL): (1) any powered air-purifying respirator equipped with high-efficiency filters; or (2) any supplied air respirator operated in the continuous flow mode.

Not in excess of 200 fibers/cubic centimeter (1,000 times PEL): full face piece supplied-air respirator operated in the pressure-demand mode or the continuous flow mode.

Greater than 200 fibers/cubic centimeter (greater than 1,000 times PEL) or unknown concentration: full face piece supplied-air respirator operated in the pressure-demand mode, equipped with an auxiliary positive-pressure self-contained breathing apparatus.

The District shall provide a powered, air-purifying respirator in lieu of any negative pressure respirator whenever an employee chooses to use this type of respirator and this respirator will provide adequate protection to the employee.

Employee Training: Because asbestos is a known carcinogen, it is imperative that employees working near asbestos have a clear understanding of the hazards involved and receive instruction in the use and maintenance of approved respirators. The respiratory training program for employees will include instruction on the following:

- Hazards of asbestos and potential health effects
- Increased risk when cigarette smoking is combined with asbestos exposure
- Proper respiratory usage and fit
- Negative- and positive-pressure sealing tests
- Limitations of respirator use
- Proper maintenance, cleaning, and storage of respirators
- Purpose of medical examinations

All employees wearing respiratory protection shall be instructed to change the filter elements whenever an increase in breathing resistance is detected. The District shall maintain an adequate supply of filter elements for this purpose. In addition, employees who wear respirators shall be permitted to leave work areas to wash their faces and respirator face pieces whenever necessary to prevent skin irritation associated with respirator use.

Respirator Fit Testing: For a respirator to provide maximum protection to the wearer, there must be a proper match between the respirator face piece and the user's face. The Program Administrator shall ensure that the respirator issued to an employee exhibits the least possible face piece leakage and that the respirator is fitted properly. A proper fit shall be determined by either quantitative or qualitative fit tests at the time of initial fitting and at least every six months thereafter for each employee wearing a negative pressure respirator.

Qualitative Fit Test: This test requires no complicated, expensive equipment and is easily performed. The qualitative fit test involves the wearer's response to a chemical challenge outside the respiratory face piece. Irritant smoke and isoamyl acetate are the most commonly used chemicals. Because the qualitative fit test relies on the wearer's subjective response, it is not entirely reliable or accurate. *This test can only be used to determine the fit of half-mask respirators.*

Quantitative Fit Test: This test is the best method for fitting the respirator to the wearer, since it relies on instrument monitoring, rather than subjective responses. However, it requires expensive, complex, and bulky test equipment. The quantitative fit test involves placing the wearer in a "tent" filled with an easily detectable, nontoxic aerosol, vapor, or gas. The air inside the respirator samples continuously through a probe in the respirator face plate, and as compared to the outside air, the leakage is expressed as a percent of penetration.

Both the qualitative and the quantitative fit tests must be repeated whenever the wearer's physical status changes, *i.e.*, weight change of more than 20 pounds, significant facial scarring, dental changes, reconstructive or cosmetic surgery, etc. All test results must be kept for three years.

In addition to the qualitative or quantitative fit tests, employees should be instructed in the following procedure to check for a proper fit before entering into an asbestos-contaminated area. Fit may be checked by a negative-pressure test, in which the user closes off the inlet of the cartridges or canister by covering the cartridges or canister with the palms of the hands and inhaling gently so that the face piece collapses slightly. The user should hold his or her breath for about ten seconds. If the face piece remains slightly collapsed with no inward leakage, the respirator is sufficiently tight. Alternatively, a positive-pressure test may be conducted by closing off the exhalation valve and exhaling

gently into the face piece. The fit is considered satisfactory if slight positive pressure can be built up inside the face piece without any evidence of outward leakage.

Medical Examination of Employees: Medical examinations and annual checkups shall be provided for those employees who are required to wear a negative-pressure respirator or who work more than 30 days a year in asbestos concentrations at or above the EPA action level of 0.1 fibers per cubic centimeter of air. Negative-pressure respirators shall be issued only to individuals who are medically able to wear the respirators. A physical examination shall comply with the requirements of 40 C.F.R. 763.121(m) and shall include:

A medical and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems.

A physical examination directed to the pulmonary and gastrointestinal systems, including a chest roentgenogram to be administered at the discretion of the physician, and pulmonary function tests.

On the initial examination, the standardized questionnaire contained in Appendix D, Part 1 of Section 763.121 and on an annual examination, the abbreviated standardized questionnaire in Appendix D, Part 2 of Section 763.121. The District shall obtain a written opinion from the examining physician stating the physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos, any recommended limitations on the employee on the use of personal protective equipment such as respirators, and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

No employee shall be assigned to tasks requiring the use of a respirator if the examining physician determines that the employee is unable to function normally wearing respiratory protection or that use of a respirator will impair the employee's or other employees' safety or health.

A record of the medical surveillance of an employee shall be retained for the duration of employment plus 30 years. The District shall provide a copy of the physician's written opinion to the affected employee within 30 days of its receipt.

LEGAL REF.: 40 C.F.R. 763.121

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