

Appendix E to § 1926.58—Interpretation and Classification of Chest Roentgenograms—Mandatory

(a) Chest roentgenograms shall be interpreted and classified in accordance with a professionally accepted classification system and recorded on a Roentgenographic Interpretation Form, "Form CSD/NIOSH (M) 2.8.

(b) Roentgenograms shall be interpreted and classified only by a B-reader, a board eligible/certified radiologist, or an experienced physician with known expertise in pneumoconioses.

(c) All interpreters, whenever interpreting chest roentgenograms made under this section, shall have immediately available for reference a complete set of the ILO-U/C International Classification of Radiographs for Pneumoconioses, 1980.

Appendix F to 1926.58—Work Practices and Engineering Controls for Major Asbestos Removal, Renovation, and Demolition Operations—Non-Mandatory

This is a non-mandatory appendix designed to provide guidelines to assist employers in complying with the requirements of 29 CFR 1926.58. Specifically, this appendix describes the equipment, methods, and procedures that should be used in major asbestos removal projects conducted to abate a recognized asbestos hazard or in preparation for building renovation or demolition. These projects require the construction of negative-pressure temporary enclosures to contain the asbestos material and to prevent the exposure of bystanders and other employees at the worksite. Paragraph (e)(6) of the standard requires that: "[W]henver feasible, the employer shall establish negative-pressure enclosures before commencing asbestos removal, demolition, or renovation operations." Employers should also be aware that, when conducting asbestos removal projects, they may be required under the National Emissions Standards for Hazardous Air Pollutants (NESHAPS), 40 CFR Part 61, Subpart M, or EPA regulations under the Clean Water Act.

Construction of a negative-pressure enclosure is a simple but time-consuming process that requires careful preparation and execution; however, if the procedures below are followed, contractors should be assured of achieving a temporary barricade that will protect employees and others outside the enclosure from exposure to asbestos and minimize to the extent possible the exposure of asbestos workers inside the barrier as well.

The equipment and materials required to construct these barriers are readily available and easily installed and used. In addition to

an enclosure around the removal site, the standard requires employers to provide hygiene facilities that ensure that their asbestos contaminated employees do not leave the work site with asbestos on their persons or clothing; the construction of these facilities is also described below. The steps in the process of preparing the asbestos removal site, building the enclosure, constructing hygiene facilities, removing the asbestos-containing material, and restoring the site include:

- (1) Planning the removal project;
- (2) Procuring the necessary materials and equipment;
- (3) Preparing the work area;
- (4) Removing the asbestos-containing material;
- (5) Cleaning the work area; and
- (6) Disposing of the asbestos-containing waste.

Planning the Removal Project

The planning of an asbestos removal project is critical to completing the project safely and cost-effectively. A written asbestos removal plan should be prepared that describes the equipment and procedures that will be used throughout the project. The asbestos abatement plan will aid not only in executing the project but also in complying with the reporting requirements of the USEPA asbestos regulations (40 CFR 61, Subpart M), which call for specific information such as a description of control methods and control equipment to be used and the disposal sites the contractor proposes to use to dispose of the asbestos containing materials.

The asbestos abatement plan should contain the following information:

- A physical description of the work area;
- A description of the approximate amount of material to be removed;
- A schedule for turning off and sealing existing ventilation systems;
- Personnel hygiene procedures;
- Labeling procedures;
- A description of personal protective equipment and clothing to be worn by employees;
- A description of the local exhaust ventilation systems to be used;
- A description of work practices to be observed by employees;
- A description of the methods to be used to remove the asbestos-containing material;
- The wetting agent to be used;
- A description of the sealant to be used at the end of the project;
- An air monitoring plan;
- A description of the method to be used to transport waste material; and
- The location of the dump site.

Materials and Equipment Necessary for Asbestos Removal

Although individual asbestos removal projects vary in terms of the equipment required to accomplish the removal of the material, some equipment and materials are common to most asbestos removal operations. Equipment and materials that should be available at the beginning of each project are: (1) rolls of polyethylene sheeting; (2) rolls of gray duct tape or clear plastic tape; (3) HEPA filtered vacuum(s); (4) HEPA filtered portable ventilation system(s); (5) a wetting agent; (6) an airless sprayer; (7) a portable shower unit; (8) appropriate respirators; (9) disposable coveralls; (10) signs and labels; (11) pre-printed disposal bags; and (12) a manometer or pressure gauge.

Rolls of Polyethylene Plastic and Tape

Rolls of polyethylene plastic (6 mil in thickness) should be available to construct the asbestos removal enclosure and to seal windows, doors, ventilation systems, wall penetrations, and ceilings and floors in the work area. Gray duct tape or clear plastic tape should be used to seal the edges of the plastic and to seal any holes in the plastic enclosure. Polyethylene plastic sheeting can be purchased in rolls up to 12-20 feet in width and up to 100 feet in length.

HEPA-Filtered Vacuum. A HEPA-filtered vacuum is essential for cleaning the work area after the asbestos has been removed. Such vacuums are designed to be used with a HEPA (High Efficiency Particulate Air) filter, which is capable of removing 99.97 percent of the asbestos particles from the air. Various sizes and capacities of HEPA vacuums are available. One manufacturer, Nilfisk of America, Inc., produces three models that range in capacity from 5.25 gallons to 17 gallons (see Figure F-1). All of these models are portable, and all have long hoses capable of reaching out-of-the-way places, such as areas above ceiling tiles, behind pipes, etc.

Exhaust Air Filtration System. A portable ventilation system is necessary to create a negative pressure within the asbestos removal enclosure. Such units are equipped with a HEPA filter and are designed to exhaust and clean the air inside the enclosure before exhausting it to the outside of the enclosure (See Figure F-2). Systems are available from several manufacturers. One supplier, Micro-Trap, Inc., has two ventilation units that range in capacity from 600 cubic feet per minute (CFM) to 1,700 CFM. According to the manufacturer's literature, Micro-Trap units filter particles of 0.3 micron in size with an efficiency of 99.99 percent. The number and capacity of units required to ventilate an enclosure depend on the size of the area to be ventilated.

* Mention of trade names or commercial products does not constitute endorsement or recommendation for use.