

paragraph (d)(2)(i) of this section, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than six months for employees whose exposures may reasonably be foreseen to exceed the action level.

(4) *Changes in monitoring frequency.* If either the initial or the periodic monitoring required by paragraphs (d)(2) and (d)(3) of this section statistically indicates that employee exposures are below the action level, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.

(5) *Additional monitoring.* Notwithstanding the provisions of paragraphs (d)(2)(ii) and (d)(4) of this section, the employer shall institute the exposure monitoring required under paragraphs (d)(2)(i) and (d)(3) of this section whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures above the action level or when the employer has any reason to suspect that a change may result in new or additional exposures above the action level.

(6) *Method of monitoring.* (i) All samples taken to satisfy the monitoring requirements of paragraph (d) shall be personal samples collected following the procedures specified in Appendix A.

(ii) All samples taken to satisfy the monitoring requirements of paragraph (d) shall be evaluated using the OSHA Reference Method (ORM) specified in Appendix A of this section, or an equivalent counting method.

(iii) If an equivalent method to the ORM is used, the employer shall ensure that the method meets the following criteria:

(A) Replicate exposure data used to establish equivalency are collected in side-by-side field and laboratory comparisons; and

(B) The comparison indicates that 90% of the samples collected in the range 0.5 to 2.0 times the permissible limit have an accuracy range of plus or minus 25 percent of the ORM results with a 95% confidence level as demonstrated by a statistically valid protocol; and

(C) The equivalent method is documented and the results of the comparison testing are maintained.

(iv) To satisfy the monitoring requirements of paragraph (d) of this section, employers must use the results of monitoring analysis performed by laboratories which have instituted quality assurance programs that include

the elements as prescribed in Appendix A.

(7) *Employee notification of monitoring results.* (i) The employer shall, within 15 working days after the receipt of the results of any monitoring performed under the standard, notify the affected employees of these results in writing either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) The written notification required by paragraph (d)(7)(i) of this section shall contain the corrective action being taken by the employer to reduce employee exposure to or below the PEL, wherever monitoring results indicated that the PEL had been exceeded.

(e) *Regulated Areas.*—(1) *Establishment.* The employer shall establish regulated areas wherever airborne concentrations of asbestos, tremolite, anthophyllite, actinolite, or a combination of these minerals are in excess of the permissible exposure limit prescribed in paragraph (c) of this section.

(2) *Demarcation.* Regulated areas shall be demarcated from the rest of the workplace in any manner that minimizes the number of persons who will be exposed to asbestos, tremolite, anthophyllite, or actinolite.

(3) *Access.* Access to regulated areas shall be limited to authorized persons or to persons authorized by the Act or regulations issued pursuant thereto.

(4) *Provision of respirators.* Each person entering a regulated area shall be supplied with and required to use a respirator, selected in accordance with paragraph (g)(2) of this section.

(5) *Prohibited activities.* The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated areas.

(f) *Methods of compliance.*—(1) *Engineering controls and work practices.* (i) The employer shall institute engineering controls and work practices to reduce and maintain employee exposure to or below the exposure limit prescribed in paragraph (c) of this section, except to the extent that such controls are not feasible.

(ii) Wherever the feasible engineering controls and work practices that can be instituted are not sufficient to reduce employee exposure to or below the permissible exposure limit prescribed in paragraph (c) of this section, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection that complies

with the requirements of paragraph (g) of this section.

(iii) For the following operations, wherever feasible engineering controls and work practices that can be instituted are not sufficient to reduce the employee exposure to or below the permissible exposure limit prescribed in paragraph (c) of this section, the employer shall use them to reduce employee exposure to or below 0.5 fiber per cubic centimeter of air (as an eight-hour time-weighted average) and shall supplement them by the use of any combination of respiratory protection that complies with the requirements of paragraph (g) of this section, work practices and feasible engineering controls that will reduce employee exposure to or below the permissible exposure limit prescribed in paragraph (c) of this section: Coupling cutoff in primary asbestos cement pipe manufacturing; sanding in primary and secondary asbestos cement sheet manufacturing; grinding in primary and secondary friction product manufacturing; carding and spinning in dry textile processes; and grinding and sanding in primary plastics manufacturing.

(iv) Local exhaust ventilation. Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with good practices such as those found in the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2-1979.

(v) Particular tools. All hand-operated and power-operated tools which would produce or release fibers of asbestos, tremolite, anthophyllite, actinolite, or a combination of these minerals so as to expose employees to levels in excess of the exposure limit prescribed in paragraph (c) of this section, such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems which comply with paragraph (f)(1)(iv) of this section.

(vi) Wet methods. Insofar as practicable, asbestos, tremolite, anthophyllite, or actinolite shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers so as to expose employees to levels in excess of the exposure limit prescribed in paragraph (c) of this section, unless the usefulness of the product would be diminished thereby.

(vii) Materials containing asbestos, tremolite, anthophyllite, or actinolite shall not be applied by spray methods.