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Recommended Revision of 1910.1001
Fourth Draft

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(a) Scope and Application.

- (1) This section applies to all occupational exposure to asbestos except as provided in paragraph (a)(2).
- (2) This section does not apply to construction work as defined in 29 CFR 1910.12(b).

(b) Definitions.

For the purpose of this section,

- (1) "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite alone or in combination.
- (2) "Asbestos fiber" means a fibrous form of asbestos, longer than 5 micrometers with a length-to-diameter ratio of at least 5 to 1, and with a maximum diameter of 3 micrometers.
- (3) "Assistant Secretary" means the Assistant Secretary of Labor of Occupational Safety and Health, U.S. Department of Labor, or designee.
- (4) "Director" means the Director, National Institute for Occupational Safety and Health (NIOSH), U.S. Dept. of Health and Human Services (DHHS) or designee.
- (5) "Action Level" means employee exposure to airborne asbestos at or above 0.1 fibers per cubic centimeter of air averaged over an eight hour period.
- (6) "Competent Person" An individual who by virtue of education, training, or experience with asbestos is qualified to make determinations as required in this standard.

(c) Permissible Exposure to Airborne Concentrations of Asbestos Fibers

- (1) The eight hour time weighted average airborne concentration of asbestos fibers to which any employee is exposed shall not exceed 0.5 fibers per cubic

centimeter of air as determined on the basis of the sampling and analytical method prescribed in this standard.

- (2) Compliance with this standard shall be achieved over a period of four years from the effective date of this standard.
- ° Within one (1) year from the effective date of this standard, the 8-hour Time Weighted Average (TWA) airborne concentration of asbestos fibers to which any employee may be exposed shall not exceed one (1) fiber per cubic centimeter (cc), of air.
 - ° Within four years from the effective date of this standard, the 8-hour TWA to which any employee may be exposed shall not exceed 0.5 fibers per cc of air.
- (3) Ceiling level. No employee shall be exposed to airborne concentrations of asbestos fibers in excess of 10 fibers per cubic centimeter of air as determined over a sampling period of 15 minutes, by the sampling and analytical method prescribed in this standard.

(d) Compliance Program

When initial monitoring as described in paragraph J(2) of this section indicates that employees are exposed at or above the Action Level as described in paragraph (b) (5) of this section, employers shall establish and implement a written program to reduce exposures to airborne asbestos to or below the limits prescribed in paragraphs (c)(1) to (c)(3) of this section.

(e) Methods Of Compliance

- (1) Engineering controls: Engineering Controls shall be used to meet exposure limits to the extent feasible.
- (2) Where engineering and administrative controls are not feasible or are ineffective, appropriate approved respiratory protective equipment must be used to meet the exposure limits described in paragraph (c) of this standard.

- (3) Exhaust ventilation: Where local exhaust ventilation is utilized to attain compliance, an adequate maintenance schedule shall be established and sufficient inspections shall be performed to ensure that it is operating as required.
- (4) Work practices, wet methods: Insofar as practical, asbestos and asbestos containing products shall be handled and worked in a wet state, except when doing so would adversely affect the product or create a hazard greater than that posed by the asbestos.

(f) Respiratory Protective Equipment

- (1) Respiratory equipment used must be of a type approved by current regulations for the certification of respirators. Use must be in accordance with 29 CFR 1910.134 and the following table:

Table 1 -- Permissible Respirators

Type of Respirator	Limits as a multiple of TWA or Ceiling PEL.
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- | | |
|--|------------|
| 1. Disposable ----- | Up to 5X |
| 2. Half-face; air purifying ----- | Up to 10X |
| 3. Full-face; air purifying----- | Up to 50X |
| 4. Full-face; powered air purifying-- | Up to 100X |
| 5. Full-face; pressure demand or
continous flow, air supplied. ---- | No limit. |

- (2) Other types of respirators approved under applicable regulations may also be used.
- (3) Establishment of a respirator program.
 - (a) The employer shall establish and maintain a respirator program in accordance with 29 CFR 1910.134.

(g) Personal Protective Clothing

- (1) Special clothing: The employer shall provide and

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require the use of clothing, such as coveralls, or similar whole body clothing, head coverings, gloves and foot coverings for any employee exposed to airborne concentrations of asbestos fibers, which exceed the limits prescribed in paragraph (c) of this section, or where personal clothing may become contaminated.

- (2) Where employees clothing becomes contaminated with asbestos fibers in the course of assigned work, the employer shall assure that contaminated clothing does not leave the workplace except as discussed in paragraph (h)(4) of this section.
- (3) The employer shall assure that all protective clothing and equipment is removed only in change areas required by paragraph (h) of this section.

(h) Hygiene Facilities And Practices

- (1) Change Areas: At any fixed place of employment, change areas shall be provided for any operation in which employees are exposed to asbestos fibers in excess of the PEL or where protective clothing is required by this standard.
- (2) Washing Facilities: Washing facilities shall be provided for all employees required to wear respiratory protective equipment or personal protective clothing by paragraphs (f) and (g) respectively of this section. As a minimum, such employees shall be required to wash all exposed parts of their bodies.
- (3) Clothes Storage: When an employee is required to store items of clothing for reuse, the employer shall provide separate containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.
- (4) Laundering:
 - (a) Laundering of asbestos contaminated clothing shall be done in such a manner as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (c) of this section.
 - (b) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in (a) of this sub-

division to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (c) of this section.

- (c) Contaminated clothing shall be transported in sealed impermeable containers, and labeled in accordance with paragraph (k) of this section.

(i) Method Of Measurement

Airborne concentrations of asbestos fibers shall be determined by the membrane filter method at 400-450 X (magnification) (4 millimeter objective) with phase contrast illumination or an equivalent method approved by the Director.

(j) Monitoring

- (1) Initial Determination: Where asbestos or asbestos containing materials are present or used in the workplace, a competent person shall determine whether employees may be exposed at or above the Action Level.
- (2) Initial Monitoring: If the initial determination shows that employees may be exposed to asbestos at or above the Action Level, then the employer shall perform monitoring to determine whether any person is exposed to airborne asbestos fibers in excess of permissible limits.
- (3) Past data may be used to comply with paragraph (j)(1)(2) provided that the data was derived using the sampling and analytical techniques prescribed in this standard, and that the operation for which the initial determination was performed has not significantly changed with respect to asbestos concentrations.
- (4) Sampling frequency: If, after the initial monitoring required by subparagraph (j)(2) of this paragraph, the PEL is exceeded, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees.

In no case shall the sampling be done at intervals greater than six months for employees whose exposure to asbestos exceeds the limits prescribed by paragraph (c) of this section.

- (5) Representative Monitoring: Sampling shall be conducted in a manner which assures that results are indicative of the exposure(s) of employees.

- (6) Employee Observation Of Monitoring: Affected employees, or their representative, shall be given a reasonable opportunity to observe any monitoring required by this paragraph and shall have access to the records thereof.

(k) Caution Signs And Labels

- (1) Caution signs: Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section. Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.
- (2) Sign Specifications: The warning signs required by this subparagraph shall be clearly legible and explicitly state, ASBESTOS, -DANGER-, CANCER HAZARD! Other information necessary to protect employees may also be displayed, provided it in no way detracts from or diminishes the primary warning.
- (3) Caution Labels: Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder or other material so that during any reasonable foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (c) of this section will be released.
- (4) Label Specifications: The caution labels required by subdivision (k)(3) of this subparagraph shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

ASBESTOS

DANGER

CANCER HAZARD!

Contains Asbestos Fibers
Avoid Creating Dust

Additional warning data may also be included provided it does not significantly detract from or diminish the primary warning.

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(l) Housekeeping

- (1) **Cleaning:** All exposed surfaces in any place of employment shall be maintained as free as possible of accumulations of asbestos fibers.
- (2) **Waste disposal:** Asbestos waste, scrap, debris, bags, containers, equipment and asbestos-contaminated clothing, consigned for disposal, which may produce in any reasonably foreseeable use, handling, storage, processing, disposal, or transportation, airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (c) of this section shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers.

(m) Recordkeeping

- (1) Every employer shall maintain records of any personal or environmental monitoring required by this section. Records shall be maintained as in 29 CFR 1910.20 and shall be made available upon request to the Assistant Secretary of Labor of Occupational Safety and Health, the Director of the National Institute for Occupational Safety and Health, and to authorized representatives of either.
- (2) **Access to records:** Employee exposure records required by this paragraph shall be provided upon request to employees, designated representatives, and the Assistant Secretary in accordance with 29 CFR 1910.20 (a)-(e) and (g)-(1).

(n) Employee Notification

Any employee found to have been exposed (without regard to personal protective equipment) to concentrations of asbestos fibers in excess of limits prescribed in paragraph (c) of this section shall, after receipt of analytical results, be notified of the exposure as soon as possible. The employee shall also be notified of corrective action being taken. Employees who the employer reasonably believes were similarly exposed, but who were not monitored, shall also be notified.

(o) Training

- (1) Each employer whose employees are exposed at or above the Action Level shall have a written training program.

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(2) The following elements shall be addressed in any training program:

- (a) The requirements of this standard.
- (b) The contents of the written compliance plan.
- (c) The hazardous properties of asbestos.
- (d) The engineering controls and work practices established to minimize employee exposure.
- (e) The effective use of personal protective equipment supplied.
- (f) Safe work procedures for handling asbestos or asbestos containing materials.

(3) Training shall be repeated annually for all exposed employees.

(4) All training given to individual employees shall be documented, to include date and content.

(5) This standard shall be posted, or otherwise made available to all exposed employees.

(o) Medical Examinations

- (1) **Preplacement:** The employer shall provide or make available to each employee within 30 calendar days following his/her first employment in an occupation exposed to airborne concentrations of asbestos fibers in excess of 0.1 fibers per cubic centimeter, for more than 30 days per year, a comprehensive medical examination, which shall include as a minimum:

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