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Exposure to Asbestos Dust**



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OFFICE OF THE
EXECUTIVE SECRETARY

January 17, 1972

To the Official Representative of Each Member Company
in the United States:-

Subject: OSHA Proposed Rule

Your attention is called to the attached proposed Federal Rule, "Standard
for Exposure to Asbestos Dust."

The proposed exposure standard is more strict than previous standards and
is now in effect as a temporary standard.

Also, notice Table G-3 incidentally published here which gives standards
regarding Silica exposure.

Very truly yours

Bradford S. Tucker
Assistant Executive Secretary

Encl.

09 12376

DEPARTMENT OF LABOR

Occupational Safety and Health
Administration

[29 CFR Part 1910]

STANDARD FOR EXPOSURE TO ASBESTOS DUST

Notice of Proposed Rule Making

Section 6(c) of the Williams-Steiger Occupational Safety and Health Act of 1970 (84 Stat. 1596; 29 U.S.C. 655) provides that upon the publication of an emergency temporary standard in the Federal Register the Secretary of Labor shall commence a rule making proceeding in accordance with section 6(b) of the Act, and that the emergency standard as published shall also serve as a proposed rule for the proceeding. An emergency temporary standard concerning exposure to asbestos dust was published in the Federal Register on December 7, 1971 (36 F.R. 23207). Accordingly, pursuant to section 6 (b) and (c) of the Williams-Steiger Occupational Safety and Health Act of 1970 (84 Stat. 1596; 29 U.S.C. 655), 29 CFR 1910.4, and Secretary of Labor's Order No. 12-71 (36 F.R. 8754), it is hereby proposed to amend 29 CFR Part 1910 as set forth below. The proposals include the emergency temporary standard and additional proposed rules on subsidiary issues.

Interested persons are invited to submit, both orally and in writing, data, views, and arguments concerning these proposals.

Written data, views, and arguments may be mailed to the Office of Safety and Health Standards, Room 305, 400 First Street NW., Washington, DC 20210, within 30 days after the publication of this notice in the Federal Register. The data, views, and arguments will be available for public inspection and copying at the Office of Safety and Health Standards, except as to matters the disclosure of which is prohibited by law.

Oral data, views, and arguments will be received by Hearing Examiner Arthur Goldberg, at a hearing beginning at 10 a.m. on March 14, 1972, in Conference Room B, Departmental Auditorium, 14th Street and Constitution Avenue NW., Washington, DC. Persons desiring to appear at the hearing must file with the Office of Safety and Health Standards a notice of intention to appear, no later than March 3, 1972. The notice must state the name and address of the person to appear, the capacity in which he will appear, and the approximate amount of time required for his presentation. The notice must also include, or be accompanied by, a statement of the position to be taken with regard to the proposed rules.

The oral proceedings shall be reported verbatim, and transcripts shall be available for inspection to any interested person on such conditions as the presiding

hearing examiner may prescribe. The hearing examiner shall regulate the course of the oral proceedings, dispose of procedural requests, objections, and similar matters, regulate the conduct of those present at the hearing by appropriate means, and shall exclude to the extent practicable irrelevant, immaterial, and unduly repetitious data or arguments. The hearing examiner shall have discretion to keep the record of the hearing open for a reasonable, stated time to receive written recommendations, and additional data, views, and arguments from any person who has participated in the oral proceedings. Upon completion of the oral proceedings, the transcript thereof, together with written submissions on the proposed rules, exhibits filed during the hearing, and any posthearing data, views, arguments, and recommendations shall be certified by the hearing examiner to the Assistant Secretary of Labor for Occupational Safety and Health for his decision. The Assistant Secretary may adopt the proposals with or without changes, or determine not to issue a rule.

Under the authority of section 6(b) (1) and section 7(b) of the Act, the Assistant Secretary of Labor for Occupational Safety and Health will request the recommendations of an advisory committee with regard to the proposed rules. The committee will be provided with copies of these proposals, together with all pertinent factual information which is, or may become, available to the Assistant Secretary, including any information submitted by the National Institute for Occupational Safety and Health. The advisory committee will be asked to submit to the Assistant Secretary written recommendations regarding these proposed rules within 45 days after the publication of this notice. The recommendations will be available for public inspection and copying. No other advisory committee will be consulted with regard to these proposed rules.

Part 1910 of Title 29 of the Code of Federal Regulations is proposed to be amended as follows:

§ 1910.93 [Amended]

1. Table G-3 in § 1910.93 (36 F.R. 15104, August 13, 1971) is proposed to be amended by deleting the following:

Asbestos—12 fibers per milliliter greater than 5 microns in length or * * * 2 Mppcf.
Tremolite * * * 5 Mppcf. 20 mg/M³
%SiO₂

If so amended, Table G-3 would read as follows:

TABLE G-3—MINERAL DUSTS

Substance	Mppcf	Mg/M ³
Silica:		
Crystalline:		
Quartz (respirable).....	250	10mg/M ³
	%SiO ₂ +4	%SiO ₂ +2
Quartz (total dust).....		30mg/M ³
	%SiO ₂ +2	%SiO ₂ +2

Crystalline: Use 1/4 the value calculated from the count or mass formulae for quartz.
Tremolite: Use 1/4 the value calculated from the formulae for quartz.

Substance	Mppcf	Mg/M ³
Amorphous, including natural diatomaceous earth.....	20	80mg/M ³
		%SiO ₂
Silicates (less than 1% crystalline silica):		
Mica.....	20	
Serpentine.....	20	
Talc.....	20	
Portland cement.....	60	
Graphite (natural).....	15	
Coal dust (respirable fraction less than 6% SiO ₂).....		2.4mg/M ³ or 10mg/M ³
For more than 6% SiO ₂		%SiO ₂ +2
Inert or Nuisance Dust:		
Respirable fraction.....	15	5mg/M ³
Total dust.....	40	15mg/M ³

Note: Conversion factors—
MppcfX33.3 = million particles per cubic meter
= particles per c.c.

† Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

‡ The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.

§ As determined by the membrane filter method at 430 X phase contrast magnification.

¶ Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	50
2.5	75
3.5	50
5.0	25
10	0

The measurements under this note refer to the use of an AEC instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of 2.4 Mg/M³ in the table for coal dust is 4.6 Mg/M³.

2. A new § 1910.93a is proposed to be added to Part 1910, reading as follows:
§ 1910.93a Asbestos dust.

(a) **8-hour time-weighted average.** The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 5 fibers longer than 5 microns per milliliter, as determined by the membrane filter method at 400–450 X (magnification) (4 millimeter objective) phase contrast illumination. Concentrations above 5 fibers per milliliter, but not to exceed 10 fibers per milliliter, may be permitted up to a total of 15 minutes in an hour, but for not more than 5 hours in an 8-hour day.

(b) **Methods of compliance—(1) Engineering methods.** Engineering methods, such as, but not limited to, enclosure, vacuum sweeping, and local exhaust ventilation, shall be used to meet the exposure limits prescribed in paragraph (a) of this section. Where such engineering methods are not feasible, or do not reduce the concentrations below the limits prescribed in paragraph (a) of this section, respiratory protective devices shall be provided and used in accordance with subparagraph (2) of this paragraph.

(2) **Other methods.** (i) When the limits of exposure to asbestos dust prescribed in paragraph (a) of this section are exceeded, and engineering controls required by subparagraph (1) of this

paragraph are not feasible or do not reduce the concentration of asbestos dust below the limits prescribed in paragraph (a) of this section, the employer shall require the use of respiratory protective devices. The selection of respiratory protective devices shall be limited to those specified in paragraph (c) of this section.

(ii) The employer shall require that each employee test his respiratory protective device before each use in order to insure a proper fit according to the manufacturer's instructions. The employer shall further provide for effective training or supervision of employees in the testing of respiratory protective devices for fit before their use.

(c) **Allowable respirators.** (1) When the 8-hour time-weighted average concentration of asbestos dust is projected to exceed 5 fibers longer than 5 microns per milliliter, but not to exceed 25 such fibers, and when a concentration over a period of 15 minutes exceeds 10 fibers longer than 5 microns per milliliter, but does not exceed 50 such fibers, a reusable or single use filter type respirator, operating with negative pressure during the inhalation phase of breathing, approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 14 (Bureau of Mines Schedule 21B), shall be used.

(2) When the 8-hour time-weighted average concentration of asbestos dust is projected to exceed 25 fibers longer than 5 microns per milliliter but not to exceed 250 such fibers, and when a concentration over a period of 15 minutes exceeds 50 fibers longer than 5 microns per milliliter but does not exceed 500 such fibers, a powered filter positive pressure respirator approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 14 (Bureau of Mines Schedule 21B) shall be used.

(3) When the 8-hour time-weighted average concentration of asbestos dust is projected to exceed 250 fibers longer than 5 microns per milliliter a type "C" positive pressure supplied-air respirator approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 12 (Bureau of Mines Schedule 19B) shall be used.

(4) The employer shall establish a respirator program in accordance with the requirements of American National Standard Practice for Respiratory Protection Z88.2—1969.

(5) The respirators provided each employee shall be properly inspected, cleaned, repaired, and stored.

(d) **Particular operations and products.** (1) When an employer has employees who are exposed to asbestos dust resulting from the operations or the use of tools described in the remaining subparagraphs of this paragraph (d), the employer shall comply with the requirements of this paragraph. The requirements of this paragraph shall apply at all times, and, in addition, the requirements of paragraph (b) of this section may also apply, according to the terms thereof.

(2) All hand- or power-operated tools which produce asbestos dust such as, but not limited to, saws, scorers, abrasive

wheels, and drills, shall be provided with local exhaust ventilation and dust collectors in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems; ANSI Z9.2-1971.

(3) Employees exposed to the spraying of asbestos, to the demolition of pipes, structures, or equipment covered or insulated with asbestos, or to the demolition of insulating strippings, shall be provided with respiratory protective devices in accordance with paragraph (c) (3) of this section.

(4) Asbestos cement, mortar, coatings, grout, and plaster shall be mixed in closed bags or other closed containers.

(5) Asbestos waste and scrap shall be collected and disposed of in sealed bags or other closed containers.

(6) Accumulation of asbestos dust shall be removed, as soon as practicable, and only by vacuum cleaners.

(e) **Warning signs.**—(1) **Posting.** Warning signs shall be provided and displayed at each location where asbestos dust hazards are present. Signs shall be posted at least 50 feet in each direction from the location where the hazard is present, and at intervals of not more than 100 feet along each edge of the area where the hazard is present.

(2) **Sign specifications.** The warning signs shall conform to the requirements for 20" x 14" vertical format signs specified in § 1910.145(d) (2), and to this paragraph. The signs shall display the following legend in the white panel, with letter sizes and styles of a visibility at least equal to that specified in the notation in the following column to the right:

Legend:	Notation
Asbestos	1" Sans Serif Gothic or Block.
Dust Hazard	½" Sans Serif Gothic or Block.
Follow these.....	¼" Gothic.
Safety and Health Rules.	¼" Sans Serif Gothic or Block.
1. Avoid breathing dust.	¼" Gothic.
2. Wear your respirator.	¼" Gothic.
3. Do not remain in area unless your work requires it.	¼" Gothic.
Asbestos dust may cause asbestosis, a severe lung disease, and is implicated in the development of certain cancers. Control of exposure to asbestos dust helps protect against these hazards.	14 point Gothic.

(3) **Spacing.** Spacing between lines shall be at least equal to the height of the upper of any two lines, except that the spacing between "Following these" and "Safety and Health Rules" shall be at least ¾".

(f) **Monitoring.**—(1) **Personal.** Employees engaged in the particular operations or using the particular tools specified in paragraph (d) of this section, or exposed to concentrations of asbestos

dust in excess of the limits specified in paragraph (c) (3) of this section shall be monitored in accordance with this paragraph.

(i) **Method.** Dust samples shall be collected from within the normal breathing zone of the employees in their normal working posture. Employees wearing respiratory protective devices shall have the sample taken from a point located on the exterior of the respirator facepiece.

(ii) **Procedure.** The sampling procedure shall be such as to permit the determinations required by paragraph (a) of this section.

(iii) **Sampling duration.** The sampling duration shall be for a period of not less than 15 consecutive minutes.

(iv) **Sampling frequency.** Sampling periods shall be of such number and pattern as to represent accurately the exposure of the employees over their working period.

(2) **Environmental.** Environmental monitoring shall be conducted in all areas in which employees are exposed to concentrations of asbestos dust in excess of the limits specified in paragraph (a) of this section.

(i) **Method.** Asbestos dust samples shall be collected from areas which are representative of the concentration of airborne asbestos dust which may reach the breathing zone of exposed employees.

(ii) **Procedure.** Sampling procedure shall be such as to permit the determinations required by paragraph (a) of this section.

(iii) **Sampling duration.** Sampling duration shall be for a period of not less than 15 consecutive minutes.

(iv) **Sampling frequency.** Sampling periods shall be of such number and pattern as to represent accurately the exposure of the employees over their working period.

(g) **Medical examinations.** The employer shall provide, or make available at his cost, appropriate medical examinations on a periodic basis to any employee who is exposed to asbestos dust in excess of the limits specified in paragraph (a) of this section.

(h) **Records.** (1) Every employer shall maintain records of the personal and environmental monitoring, and of the medical examinations, required by paragraphs (f) and (g) of this section. Such records shall be maintained for at least 20 years.

(2) The records of monitoring shall be made available for inspection and copying to the Secretary of Labor and to his designated representatives.

(3) The records of medical examinations shall be made available only to the Secretary of Labor, to the Secretary of Health, Education and Welfare, to designated representatives of either of them, and, at the request of the employee or former employee examined, to his physician.

3. A new § 1910.19 is proposed to be added to Subpart B, reading as follows:
§ 1910.19 Asbestos dust.

Section 1910.93a shall apply to the exposure of every employee to asbestos dust

in every employment and place of employment covered by § 1910.12, 1910.13, 1910.14, 1910.15, or 1910.16 of this Subpart B, in lieu of any different standard on exposure to asbestos dust which would otherwise be applicable by virtue of any of those sections.

(Sec. 6, 84 Stat. 1593; 29 U.S.C. 855, 29 CFR 1910.4; Secretary of Labor's Order No. 12-71, 36 F.R. 8754)

Signed at Washington, D.C., this 6th day of January 1972.

G. C. GUENTHER,
Assistant Secretary of Labor.
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