PLAINTIFF'S EXHIBIT
AIA-76

Additional copies of this booklet are available.

AIA North America

ASBESTOS INFORMATION ASSOCIATION
1660 L Street, N.W.,


Published by AsbestosClaims.Law
asbestosclaims.law/library/20977/1

# Contents


| | |
|---|---|
| Introduction | Page 1 |
| Products And Operations | Page 2 |
| Summary of OSHA Asbestos Standard | Page 3 |
| General Recommendations | Page 5 |
| Specific Recommendations | Page 7 |
| Personal Hygiene | Page 8 |
| OSHA Asbestos Standard | Appendix A |
| USPHS/NIOSH Membrane Filter Method For Evaluating Airborne Asbestos Fibers | Appendix B |
| Vacuum Cleaning Stations | Appendix C |



*Asbestos Information Association trial exhibit AIA-76: Asbestos Information Association/North America, Recommen...*

ACL Doc 20977 · Page 2 of 8

Published by AsbestosClaims.Law

**asbestosclaims.law/library/20977/2**

# Introduction

The Occupational Safety and Health Act was signed into law on December 29, 1970 and became effective on April 28, 1971. The Act has the stated objective of assuring every American worker a safe and healthy workplace.

On December 7, 1971 the Secretary of Labor issued an emergency-temporary standard for exposure to asbestos dust. As required by the Act, a permanent standard for asbestos exposure was promulgated six months later, on June 7, 1972. The present OSHA Asbestos Standard, discussed in this booklet, became effective July 7, 1972. Thorough understanding of the standard is important to management of any company utilizing asbestos in its manufacturing or processing operations.

The work practices on the following pages have been prepared by the Standards and Technical Committee of the Asbestos Information Association/North America. They are intended as general guidance for safe and clean workplace conditions in keeping with the spirit and intent of the OSHA Standard for Occupational Exposure to Asbestos Dust.

These practices have been developed through careful study and consultation and are recommended as good procedure. It is recognized that manufacturing conditions vary. Implementation of the practices contained herein cannot be considered as a guarantee of OSHA compliance. Where there may be a question of compliance, OSHA personnel should be consulted.

A proposed revision to the OSHA Asbestos Standard was published in the *Federal Register* on October 9, 1975. This work practice booklet will be revised, as necessary, to reflect any approved changes to the standard.



Asbestos Information Association trial exhibit AIA-76: Asbestos Information Association/North America, Recommen...
ACL Doc 20977 · Page 3 of 8
Published by AsbestosClaims.Law
asbestosclaims.law/library/20977/3

# Products and Operations

The types of asbestos friction material products covered by these work practice recommendations are:

- Clutch facings
- Brake lining segments
- Brake blocks
- Disc Brake pads
- Brake band materials
- Automotive transmission discs

Operations to which these work practices may apply are:

- Clutch assembly and rebuilding operations
- Brake assembly or relining operations
- Automatic transmission assembly and rebuilding operations

# Summary of OSHA Asbestos Standard

## General Comments

OSHA published a "Standard for Exposure to Asbestos Dust" in the *Federal Register*, Vol. 37, No. 110, dated June 7, 1972. The standard was recodified from 1910.93a to 1910.1001 in the *Federal Register*, Vol. 40, No. 103, dated May 28, 1975. The standard is reproduced as Appendix A. The standard applies to any manufacturing, fabricating or handling process or operation utilizing asbestos fiber or materials containing asbestos fiber.

The standard is divided into eight major sections:

**1. 1910.1001 (b)—Permissible Exposure Limits**
Sets maximum allowable asbestos fiber concentration in the workplace air.

**2. 1910.1001 (c)—Methods of Compliance**
Recommends procedures to meet permissible exposure limits.

**3. 1910.1001 (d)—Personal Protective Equipment**
Specifies types of personal protective equipment and defines circumstances under which they are required.

**4. 1910.1001 (e)—Method of Measurement**
**1910.1001 (f)—Monitoring**
Specifies monitoring procedures to determine if work places meet permissible exposure limits.

**5. 1910.1001 (g)—Caution Signs and Labels**
States when caution signs and labels are required, and wording to be used.

**6. 1910.1001 (h)—Housekeeping**
Specifies results to be obtained from housekeeping and methods of waste disposal.

**7. 1910.1001 (i)—Recordkeeping**
Specifies type and duration of monitoring recordkeeping. States requirements for employee notification of monitoring results if exposure is in excess of permissible exposure limits and of corrective action being taken.

**8. 1910.1001 (j)—Medical Examinations**
Details requirements for medical examinations and duration of medical recordkeeping.

## Specific Comments

**1. Exposure Limits (1910.1001 (b))**
It is the employer's responsibility to assure that exposure of employees to airborne concentrations of asbestos fibers does not exceed the limits prescribed by the standard.

**The OSHA standard maximum permissible exposure limits of asbestos fiber in the workplace air are:**

**a. Eight-hour time-weighted average:**
**(1) At present: 5 fibers, longer than 5 micrometers, per cubic centimeter.**
**(2) Effective July 1, 1976: 2 fibers, longer than 5 micrometers, per cubic centimeter.**

**b. Ceiling concentration:**
**(1) At present: 10 fibers, longer than 5 micrometers, per cubic centimeter.**
**(2) Effective July 1, 1976: No change.**

**2. Methods of Compliance (1910.1001 (c))**

- *Engineering Methods*

Engineering controls such as isolation, enclosure, exhaust ventilation and dust collection shall be used to meet the prescribed permissible exposure limits.

All hand operated and power operated tools which may produce airborne asbestos fibers in excess of permissible exposure limits shall be provided with local exhaust systems.

Published by AsbestosClaims.Law
asbestosclaims.law/library/20977/4
Asbestos Information Association trial exhibit AIA-76: Asbestos Information Association/North America, Recommen...
ACL Doc 20977 · Page 4 of 8

• *Wet Methods*

When practicable, asbestos products shall be handled in a wet state sufficient to prevent the emission of dust to the atmosphere. This procedure is not required where the usefulness of the product might be diminished by wetting. The applicability of wet methods is limited. In most situations, engineering controls provide more efficient procedure.

**3. Personal Protective Equipment and Clothing (1910.1001 (d))**

• *Respiratory Protection*

Respiratory protection is required whenever the airborne concentrations of asbestos fiber exceed either the permissible time weighted average level or permissible ceiling concentration. The type of respirator to be used is determined by the fiber concentration in the workplace.

a. Fiber concentrations up to, but not exceeding, 10 times the allowable limit: Air purifying respirator — reusable or single use.
b. Fiber concentrations up to, but not exceeding, 100 times the allowable limit: Powered air purifying respirator.
c. Fiber concentrations exceeding 100 times the allowable limit: Type "C" supplied air respirator.

• *Protective Clothing*

Whenever airborne fiber concentrations exceed the prescribed ceiling level, the employer shall provide and require the use of special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings. When the employer provides and requires the use of special clothing, he shall also provide for the laundering or disposal of the special clothing.

Whenever airborne fiber concentrations exceed either the permissible time-weighted average concentration or permissible ceiling concentration, the employer shall provide change rooms for his employees. Change rooms shall be equipped with two employee so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

**4. Measurement and Monitoring (1910.1001 (e) (f))**

The standard requires that all workplaces where asbestos fiber may be released shall be monitored to determine exposure levels. After initial determination of airborne concentrations, monitoring shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure. Monitoring must be repeated at no less than six-month intervals where exposure to asbestos dust may reasonably be foreseen to exceed permissible exposure limits.

All monitoring shall be done by the membrane filter method. Appendix B provides a description of this procedure.

Affected employees or their representatives shall be given a reasonable opportunity to observe any required monitoring and shall have access to the monitoring records.

Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the prescribed limits shall be notified in writing of the exposure as soon as practicable but not later than five days of the finding.

**5. Caution Signs and Labels (1910.1001 (g))**

Caution signs shall be displayed at each workplace where asbestos fiber concentrations exceed permissible exposure limits. Caution labels shall be applied to all materials and products which during any reasonably foreseeable use might release concentrations of asbestos fibers in excess of permissible exposure limits.

Signs and labels are described in detail in Appendix A.

**6. Housekeeping (1910.1001 (h))**

All external surfaces, machinery and equipment shall be maintained free of asbestos fiber accumulations that might, if dispersed, create asbestos fiber concentrations above

For recommendations on housekeeping procedures, see "Housekeeping" section under General Recommendations.

**7. Recordkeeping (1910.1001 (i))**

Every employer shall maintain records of personal and environmental monitoring required by the standard. Records shall be maintained for a period of at least three years.

**8. Medical Examinations (1910.1001 (j))**

Preplacement, annual, and termination medical examinations must be provided or made available by the employer for any employee ". . . engaged in occupations exposed to airborne concentrations of asbestos fibers." These medical records must be kept for 20 years and are available to the employee's physician.

# General Recommendations

## Exhaust and Dust Collection Systems

The OSHA Asbestos Standard requires that exhaust and dust collection systems be designed and maintained in accordance with American National Standard, "Fundamentals Governing the Design and Operation of Local Exhaust Systems," ANSI Z9.2-1971. This publication is available from:

American National Standards Institute
1430 Broadway
New York, N.Y. 10018

The National Emissions Standards for Hazardous Air Pollutants (NESHAPS), as published by the Environmental Protection Agency in the *Federal Register*, Vol. 38, No. 66, dated April 6, 1973, and amended October 14, 1975, state that **there must be no visible emissions to the outside air from asbestos mills or from buildings in which commercial asbestos is used in the manufacture of:**

**textile materials**
**cement products**
**fireproofing and insulating materials**
**friction products**
**paper, millboard and felt**
**floor tile**
**plastics and rubber materials**
**chlorine**
**shotgun shells**
**asphalt concrete**
**paints, coatings, caulks, adhesive and sealants**

Visible emissions are defined as emissions which contain asbestos and which are visually detectable without the aid of instruments. Rather than meet the no-visible-emission requirement, air cleaning procedures using a fabric filter collector may be employed. When the use of fabric filters creates a fire or explosion hazard, use of a high energy wet collector may be authorized by EPA.

For small and intermittent production and fabrication operations, major dust collection systems of the high volume, low velocity type design described in the references above may not be necessary. Instead, systems of the low volume, high velocity type utilizing as their exhaust air source a high efficiency vacuum cleaner could be suitable. For design information on these systems, attention is invited to the AIA/NA booklet, "Recommended Work Practices on Shop and Field Fabrication of Asbestos Sheet Products." This booklet is available on request to AIA/NA.

All exhaust and dust collection systems should be inspected periodically for proper

Asbestos Information Association trial exhibit AIA-76: Asbestos Information Association/North America, Recommen...
ACL Doc 20977 · Page 5 of 8
Published by AsbestosClaims.Law
asbestosclaims.law/library/20977/5

functioning. For continuous operations, it is recommended that the system operation and the interior of the baghouse be checked daily. A scheduled maintenance program that includes bag replacement should be prepared and followed.

Wherever possible, operations involving asbestos-containing materials should be isolated from other work areas by partitions, curtains or other means. If central exhaust systems are utilized, the work areas should be maintained under a slight negative pressure.

### Housekeeping

Housekeeping is an essential part of any manufacturing operation. It is even more essential in an asbestos-using plant because airborne dust created by lack of good housekeeping has the potential for harm to employees.

The OSHA Asbestos Standard stipulates that **"all external surfaces in any place of employment shall be maintained free of accumulations of asbestos fiber if, with their dispersion, there would be excessive concentration."**

Surface cleaning should be accomplished by a vacuum process. Portable vacuum cleaning units should be equipped with internal filtration and disposable dust bags. Single or multi-hose stationary vacuum cleaning systems designed for use with asbestos-containing dusts are available. Vacuum cleaning stations can be added to existing dust collection systems as shown in Appendix C.

Loose material should never be dry swept. Water or other dust suppressants should be applied in those circumstances where brooms are used.

### Information and Training

Employees assigned to a work area where exposure to airborne concentrations of asbestos fibers may exceed the maximum permissible limits should be fully informed with asbestos dust. It is important that both new employees and employees with tenure have information concerning the safe use of asbestos brought to their attention at periodic intervals. Each employee should be informed of:

a. Operations which could result in exposure to excessive asbestos fibers;
b. Engineering controls and workplace practices for employee protection;
c. Purpose and proper use of respiratory equipment;
d. Medical examination requirements; and
e. Provisions of the OSHA asbestos standard.

A copy of the OSHA Asbestos Standard should be available to employees. The AIA/NA pamphlet, "What Every Employee Should Know About Asbestos and Health," is recommended for distribution to employees. The pamphlet is available at minimal cost from the Association. Posters may be effectively used to inform. A series of asbestos health hint posters designed for this purpose are also available from AIA/NA.

A record of employee training should be kept. The record may appropriately include for each employee, name, social security number and job title, along with the date and description of training including materials distributed.

### Waste Disposal

Generators of asbestos wastes resulting from manufacturing, fabrication, demolition, renovation and spraying operations are responsible for ensuring that the waste is disposed of in a properly operated disposal site as described in the NESHAPS amendment dated October 14, 1975. The OSHA Asbestos Standard requires that asbestos waste, which when handled or transported could generate airborne fibers in excess of the permissible exposure limits, be disposed of in sealed bags or closed containers impermeable to asbestos fibers.

No visible emissions to the outside air may result from collection, processing, packaging, transporting or deposition of any asbestos-containing waste material. Alternatively, wastes may be mixed with water and sealed in a labeled, leak-tight container and deposited at a disposal site or they may be formed into non-friable forms and deposited at a disposal site.

## Specific Recommendations

Normally, friction materials should be obtained from the manufacturer in finished form; cut, machined and/or drilled to fit particular requirements. This procedure avoids additional fabricating operations.

Fabricating equipment such as grinders, lathes, drill presses working on large capacity operations should be equipped with high volume, low velocity exhaust and dust collection systems. See General Recommendations on page 8.

Intermittent, short duration machining operations might be equipped with high velocity, low volume exhaust and dust collection systems.

All dust control systems which discharge exhaust air to atmosphere must be equipped with fabric filter collection devices (U.S. Environmental Protection Agency "National Emission Standards for Hazardous Air Pollutants—Asbestos", *Federal Register*, Vol. 38, No. 66, dated April 6, 1973).

If dust control by means of exhaust ventilation is not feasible or practicable, wet machining utilizing fluid cutting lubricants might be a suitable alternate.

Dust and chips generated by the machining operations should be removed regularly, preferably by vacuum methods, and disposed in accordance with "Housekeeping" paragraph in the General Recommendations.

After fabricating and before shipping, all excess dust and chips should be removed from the surfaces of friction material to prevent dust contamination of the fabricator's workplace and his customer's workplace.

Asbestos Information Association trial exhibit AIA-76: Asbestos Information Association/North America, Recommen...
ACL Doc 20977 · Page 6 of 8
Published by AsbestosClaims.Law
asbestosclaims.law/library/20977/6

# Personal Hygiene

In the preparation of asbestos-containing products, unless good procedures are followed, dust conditions can result. Employees must be aware that inhalation of asbestos dust may be a serious risk to health. Every effort should be made to eliminate dust conditions and avoid exposure to dust.

Good personal hygiene practices are important in every working situation. When working with asbestos, workers are urged to observe the following personal hygiene practices for their own health protection, their families, and those with whom they work:

- **Do not smoke**
- **Wash before eating**
- **Shower after work**
- **Respirators and special clothing are provided for worker protection under certain excessive dust level conditions. These items of personal protective equipment deserve the highest respect of the worker and should be worn properly, when required.**
- **Change to work clothes upon arrival at work and change from work clothes at conclusion of work. Use change rooms for this purpose.**
- **If work clothing is taken home, carry in a bag impermeable to asbestos fibers and wash separately from other clothing. Never shake dusty clothing. Use a washing machine.**

# Appendix A

**RULES AND REGULATIONS**

## Title 29—LABOR

**Chapter XVII—Occupational Safety and Health Administration, Department of Labor**

**PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS**

**Standard for Exposure to Asbestos Dust**

On December 7, 1971, an emergency temporary standard concerning exposure to asbestos fibers was published in the FEDERAL REGISTER (36 F.R. 23207). In accordance with section 6(c)(3) of the Williams-Steiger Occupational Safety and Health Act of 1970, a notice of proposed rulemaking regarding a permanent standard for exposure to asbestos fibers was published in the FEDERAL REGISTER on January 12, 1972 (37 F.R. 466). The notice invited interested persons to submit both orally and in writing, data, views, and arguments concerning the proposal.

On or about January 24, 1972, the Advisory Committee on Asbestos Dust was established and requested to make written recommendations with regard to the proposed standard on asbestos. On or about February 1, 1972, the Department of Health, Education, and Welfare transmitted to the Secretary of Labor a criteria document containing Recommendations for an Occupational Exposure Standard for Asbestos by the National Institute for Occupational Safety and Health (NIOSH). Public notice was given of the receipt of the recommendations and their availability for inspection and copying. On or about February 25, 1972, the Advisory Committee on Asbestos Dust submitted its written recommendations to the Assistant Secretary of Labor for Occupational Safety and Health.

Note: Federal Register, Vol. 40, No. 103, May 28, 1975, p. 23072, announced that the OSHA standard for Exposure to Asbestos Dust was recodified from 1910.93a to 1910.1001.

Pursuant to the notice of rule making, a hearing was held on March 14 through 17, 1972, for the purpose of receiving oral data, views, and arguments concerning the proposed standard. On or about March 31, 1972, the presiding hearing examiner certified to the Assistant Secretary of Labor for Occupational Safety and Health the record of the proceeding. The record includes prehearing written comments, a transcript of the oral presentations made at the hearing, and numerous exhibits received during the course of the hearing or within the period allowed after the close of the hearing.

The proposed standard dealt with (1) permissible concentrations of asbestos fibers; (2) methods of compliance; (3) warning signs; (4) monitoring; (5) medical examinations; and (6) recordkeeping. Each of these major proposals elicited comments, arguments, objections, and counterproposals. They all have been examined and considered.

1. *Acceptable concentrations of asbestos dust.* The proposed standard would limit occupational exposure to 8-hour time-weighted average (TWA) airborne concentrations of asbestos dust not exceeding five fibers longer than five micrometers per milliliter. Concentrations above five fibers but not to exceed 10 fibers (ceiling concentration) would be permitted up to 15 minutes in an hour, but for not more than 5 hours in any one 8-hour day.

NIOSH in effect has recommended that the five-fiber TWA and 10-fiber peak concentrations be permitted only for 2 years; thereafter, TWA concentrations should be not more than 2 fibers per cubic centimeter ($cm.^3$) of air, and peak concentrations should not exceed 10 fibers/$cm.^3$, with no time restriction. Numerous objections and counterproposals have been made, with regard to both the limits of asbestos fiber concentrations and the time periods to comply with them. Some, for example, have recommended return to a 12-fiber standard of an earlier day; i.e., a level adopted under the Walsh-Healey Public Contracts Act in 1969. Others have recommended a two-fiber standard to become effective in 6 months, then a one-fiber standard for 2 years, and finally a zero-fiber standard after 3 years. These recommendations give a fair indication of the wide spread of the counterproposals.

Asbestos Information Association trial exhibit AIA-76: Asbestos Information Association/North America, Recommen...
ACL Doc 20977 · Page 7 of 8
Published by AsbestosClaims.Law
asbestosclaims.law/library/20977/7

| COPY FORM | INITIALS | DATE |
|---|---|---|
| | | |

| BOX NUMBER | SEGMENT NO. | REQUESTING PARTY |
|---|---|---|
| | | |

NOTES

04-01172