

# Asbestos Safety

Texas Department of Insurance  
Division of Workers' Compensation  
Safety Education and Training Programs

HS93-003E (11-06)

## Goal

This program provides information on asbestos exposure hazards.

## Objective

Employees will gain knowledge and demonstrate safe work practices when handling asbestos containing material (ACM).

## Regulations/Standards

The Environmental Protection Agency (EPA) regulates the use and disposal of toxic substances in air, water, and on land. (See 40 CFR 763.) The EPA regulates emissions from asbestos mills and various manufacturing and fabricating operations based on the National Emissions Standard for Hazardous Air Pollutants (40 CFR 61 Subparts A & M).

The Occupational Safety and Health Administration (OSHA) sets limits for worker exposure to hazardous substances and materials.

Prevention of asbestos contamination in foods, drugs, and cosmetics is the responsibility of the Food and Drug Administration (FDA).

The use of asbestos in any consumer product including dry-wall patching compounds, ceramic logs, and clothing is regulated by the Consumer Product Safety Commission (CPSC). The CPSC is also considering a ban on all nonessential product uses that can result in the release of asbestos fibers.

Asbestos mining and milling operations are regulated by the Mine Safety and Health Administration (MSHA). MSHA procedures cover asbestos containment once it is mined, and its processing into workable fibers for construction and industry.

## Background

Most new products do not contain asbestos as an ingredient. However, enough ACM still remains to pose a potential health hazard. In the past, asbestos has been used in over 3,000 commercial products ranging from pipe insulation to clothing for fire fighters. Commercial products have the potential to release asbestos fibers into the environment if mishandled or misused. The following are at risk for potential exposure:

- mechanics working on older automotive clutch and brake systems;
- plumbers working on asbestos insulated pipe;

- construction and demolition personnel working on building materials containing asbestos; and
- maintenance personnel working on fireproofing insulation, pipe insulation, spray-on acoustic insulation, textured wall plaster, ceiling plaster, and vinyl floor tile, all of which may contain asbestos.

Once ACM has been identified, OSHA strictly regulates the handling, the use of personal protective equipment, the use of monitoring devices, and hazardous area postings.

## Identification

Asbestos is a naturally occurring mineral, composed of fibrous mineral silicates. It is fireproof and almost chemically inert. These properties make it a valuable component in fireproofing insulation and as an inert, non-reactive ingredient in many industrial processes.

Microscopic examination is required to determine the presence of asbestos in a material. ACM is often found in several materials:

- use of material—pipe insulation, fireproofing insulation, fibrous cement components, and acoustical plasters;
- age of material—if it was installed between 1920 and the late 1980's; and
- appearance of material—pipe insulation, fireproofing insulation that is a light tan, grey-white or blue tinted off-white.

The only way to confirm the presence of asbestos is in a licensed and certified laboratory. Always treat the suspected material as asbestos until proven otherwise.

## Health Concerns

Asbestos is most dangerous when the micro fibers are disturbed by sawing, drilling, nailing, cutting, bumping or tearing the asbestos-containing material. When disturbed, the fibers can travel throughout an entire building in air ducts, under doors, and down hallways and stairs. Asbestos fibers continue to float in the air for days following a disturbance.

Inhaled microscopic fibers penetrate deeply into the lungs where they remain lodged. The fibers will not dissolve and cannot be expelled by normal physiological reaction. There are no physical warning signs such as sneezing, coughing, or itching from the inhalation of asbestos. The fibers are very durable and will remain in the body.





It is generally agreed that the asbestos fibers change the basic cell chemistry that may result in asbestosis or cancer. The diseases caused by exposure may not surface for twenty to forty years.

Asbestosis is a chronic disease of the lungs that makes breathing progressively more difficult and can result in death. Mesothelioma is an incurable cancer found in the chest and abdominal membranes.

When working with asbestos exposure rates above the permissible exposure limit, OSHA requires employers to provide medical exams to establish a baseline. This data is used to compare results from subsequent required annual exams. A doctor who specializes in occupational diseases must give each exam. The exam includes three parts:

- a work history obtained by questionnaire which examines any background of lung disease, damage to lungs through smoking, and/or previous work habits that may have contributed to lung damage;
- a general physical exam which concentrates on the lungs, heart, and stomach to determine whether the employee can work with asbestos; and
- a breathing test – Pulmonary Function Test (PFT) – determines if damage to the lungs currently exists and is the first indication of damage to healthy lungs.

## Asbestos Removal

The EPA is encouraging states to adopt licensing regulations and training programs for asbestos abatement. A revised licensing program has been in effect in Texas since 1992. This program includes standardized training courses on technical knowledge of asbestos, abatement practices, and abatement monitoring. Regular retraining is required.

Special precautions should be taken when working with asbestos:

- do not disturb any material that may contain asbestos unless absolutely necessary;
- treat any suspicious material as if it contains asbestos;
- if removal of friable materials is essential, do so before demolition or renovation;
- enclose the work area with plastic sheeting and duct tape;
- always wear a National Institute for Occupational Safety and Health (NIOSH) approved respirator and protective clothing which includes coveralls, gloves, hats, boots, and a mask;



- airborne asbestos fibers can be prevented by moistening the material with a hand sprayer;
- combining a low-sudsing detergent with the water improves fiber saturation and makes cleanup easier and safer;
- remove the material in complete pieces if possible, as smaller pieces are more likely to release asbestos fibers;
- thoroughly clean the area with wet mops, sponges, or rags after removal;
- repeat the procedure; and
- do not vacuum as the fibers can pass through normal vacuum cleaning filters.

## Disposal and Transportation

Disposal of asbestos products must be in accordance with EPA regulations. The materials must be placed in plastic bags and enclosed in sturdy, leakproof containers. The containers must be properly labeled. The personal protective equipment and cleaning supplies should also be properly disposed of immediately after use.

A custody form passes from the ACM originator to the transporter and finally to the person receiving the wastes at the disposal site.

EPA transportation regulations state that there should be no visible emissions of the asbestos wastes. EPA recommends vehicles transporting ACM to have enclosed compartments or canvas covers.

The landfill operator must be notified of any load containing asbestos wastes and must inspect the load to ensure the wastes are in leakproof containers and properly labeled. He is also responsible for notifying EPA of any suspected fiber releases during disposal. The landfill site must have a designated area and trench for disposing of asbestos wastes. EPA regulations state that there must be no visible dust emissions from the site during disposal. Once deposited in a designated area, at least six inches of non-asbestos material must be placed over the waste within 24 hours of disposal.

When closing an asbestos waste site, a 30 inch cover of non-asbestos material must be placed on top of the existing six inch cover. Erosion prevention measures, like proper grading and vegetation, must also be added.

## Review

1. What qualities make asbestos preferable to use?
  - A. Fireproof
  - B. Color
  - C. Almost chemically inert
  - D. Both A & C
2. When is asbestos especially dangerous?
  - A. When mixed in a solution
  - B. When it is airborne
  - C. When it is locked inside of a solid

- D. None of the above
3. What are the adverse health effects of asbestos?
- A. Asbestosis
  - B. Mesothelioma
  - C. Other cancers
  - D. All of the above
4. What personal protective equipment should be worn when working with asbestos?
- A. NIOSH approved respirator and protective clothing
  - B. No personal protective equipment is needed
  - C. Surgical mask and coveralls
  - D. Safety glasses, hard hat, and steel toe shoes

## Review Answers

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ANS: 1.D; 2.B; 3.D; 4.A

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## Resources

The Texas Department of Insurance, Division of Workers' Compensation (TDI/DWC) Resource Center offers a workers' health and safety video tape library. Call (512) 804-4620 for more information or visit our web site at [www.tdi.state.tx.us](http://www.tdi.state.tx.us).

Disclaimer: Information contained in this training program is considered accurate at time of publication.