



# ASBESTOS

## WHAT IS ASBESTOS?

It is the name for a group of minerals that occur naturally as bundles of long, silky fibers. ASBESTOS HAS BEEN WIDELY USED in industry and construction. Asbestos fibers are woven or bonded together to create products that are:

- Strong
- Flexible
- Resistant to both heat and chemicals

IT IS IMPORTANT TO KNOW HOW TO WORK WITH ASBESTOS SAFELY because asbestos fibers can create health hazard if they're allowed to break apart and become airborne.

## A BRIEF HISTORY OF ASBESTOS

ASBESTOS WAS FIRST USED IN THE LATE 19<sup>TH</sup> CENTURY. In North America, mining and commercial use of asbestos began in the 1880s. Much of the asbestos used was mined in Canada. USE OF ASBESTOS INCREASED DURING WORLD WAR II. In the 20<sup>th</sup> century, asbestos became a key ingredient in the following:

- CONSTRUCTION MATERIALS--roofing, siding, wallboard, textured paint, floor tiles, insulation
- TEXTILES--fireproof clothing
- SHIPBUILDING MATERIALS--insulation for boilers and steam pipes
- AUTOMOTIVE PARTS--brake shoes and clutch pads

TODAY, ASBESTOS USE IS LARGELY BANNED. By the 1960s, asbestos was known to be a health hazard. Other materials are now replacing asbestos for all but a few specialized uses "FRIABILITY" is the ability of a product to release fibers into the air when crumbled by simple hand pressure. If a product is "friable," tiny fibers can readily break away into fine dust. These fibers can easily be inhaled or swallowed. When tightly bound into a finished product, however, the material is considered "nonfriable." The asbestos fibers can't be released unless the product is sawed, drilled or otherwise damaged.

## **SOME ASBESTOS-RELATED DISEASES**

These diseases may not appear until 20 or more years after exposure. ASBESTOSIS occurs when fibers accumulate in the lungs. These fibers cause permanent scarring, shortness of breath and increased susceptibility to dangerous lung infections. MESOTHELIOMA is cancer of the membrane lining of the chest or abdominal cavity. It occurs almost exclusively among asbestos workers. LUNG CANCER is a serious threat to workers who have been heavily exposed to asbestos. OTHER CANCERS associated with asbestos exposure occur in the digestive system: the esophagus, stomach, colon and rectum. Fortunately, taking certain precautions can prevent potential health problems.

SMOKING INCREASES THE RISK OF CANCER. LUNG CANCER OCCURS MUCH MORE OFTEN among asbestos worker who smoke, especially when compared to:

- Non-smoking co-workers
- Non-smoking general public

SMOKING ALSO LEADS TO:

- CHRONIC BRONCHITIS--which causes coughing and shortness of breath
- EMPHYSEMA--which causes extreme difficulty in breathing
- LUNG INFECTIONS--including colds, pneumonia and flu

**SMOKING IS PROHIBITED** in work areas where there is a risk of exposure to asbestos hazards.

If you smoke, ask your employer about programs to help you quit. And, if work with asbestos. SAFETY STANDARDS SET BY OSHA protect workers in industry and construction. HIGHLIGHTS OF THESE STANDARDS INCLUDE THE FOLLOWING:

■ PERMISSIBLE EXPOSURE LIMITS (PELS) THAT INCLUDE:

- TIME-WEIGHTED AVERAGE (TWA)--This limits concentration of airborne asbestos fibers to 0.1 fiber per cubic centimeter of air over an 8-hours day.
- EXCURSION LIMIT (EL)--Employees must not be exposed to airborne asbestos fibers of 1.0 fiber per cubic centimeter (or higher) over a 30 – minute period
- ENGINEERING CONTROLS--These include ventilation, exhaust and vacuum systems equipped with HEPA (high–efficiency particulate air) filters that collect dust. They're used to reduce airborne concentrations and exposure to asbestos fibers.

■ SAFE WORK PRACTICES INCLUDING:

- Wetting down material (wet fibers are less likely to float in the air)
- Good housekeeping and hygiene practices
- Prohibiting use of cutting or abrasive tools that release fibers in an uncontrolled manner

■ REGULATED AREAS

Hazardous areas must be marked with warning signs. When feasible, the work area is enclosed.

■ CONTAINER LABELS

Asbestos containers, including waste bins, must be labeled. The OSHA standards also cover RESPIRATORS AND PROTECTIVE CLOTHING

■ RESPIRATORS must be:

- NIOSH approved for asbestos
- FITTED properly to ensure maximum protection

THIS PROTECTION MUST BE USED WHEN:

- CONCENTRATION exceeds the TWA or EL
- CONTROLS (engineering and work practices) are being installed or implemented
- MAINTENANCE and repair work are being done
- EMERGENCIES occur
- ENGINEERING or work controls are not enough to reduce exposure
  
- THE TYPE OF RESPIRATOR depends on the measured levels of airborne fibers
- AIR-PURIFYING types may be used at lower levels
- SUPPLIED-AIR types must be used at higher levels

■ EMPLOYEE TRAINING must cover:

- SELECTION
- FIT
- USE CLEANING
- MAINTENANCE
- INSPECTION

■ PROTECTIVE CLOTHING, which provides whole-body protection, includes:

- COVERALLS
- GLOVES
- GOGGLES or face shield
- HEAD COVERING
- FOOT COVERING

THIS PROTECTION MUST BE USED WHEN :

- AIRBORNE ASBESTOS is present
- CONTACT CONTAMINATION may be likely

THE FOLLOWING PROCEDURES SHOULD BE DONE:

- REMOVE PROTECTIVE CLOTHING AND EQUIPMENT SAFELY at the
- end of our shift.
- REMOVE all clothing except your respirator in the designated area.
- DISCARD disposable protective clothing properly
- STORE other contaminated articles where they belong
- SHOWER and dry yourself thoroughly
- REMOVE your respirator and clean it as directed
- DRY and store your respirator properly

PROPER PROCEDURES WILL HELP PROTECT YOU AND YOUR FAMILY.

**MEDICAL SURVEILLANCE AND EDUCATION** offer workers further protection.

#### ■ MEDICAL EXAMS

Employees who are exposed to asbestos fibers will receive medical exams:

- Before they are placed in their jobs and
- Annually

Exams are given by licensed physicians and they are free to employees.

#### ■ EDUCATION

Anyone exposed at or above the TWA or EL will be placed in the education program and receive annual training. Topics covered include:

- Recognizing Asbestos
- Health Hazards
- Relationship Between Asbestos and Smoking
- Importance of Protective Controls
- Proper use and understanding of respirators

## **SOME ADDITIONAL REQUIREMENTS for the construction industry**

CONSTRUCTION WORKERS exposed to asbestos in remodeling, renovation, demolition, and new construction are protected by OSHA, too. Rules and regulations protect workers (in any industry) involved in:

- Removal or encapsulation of asbestos
- Salvage Operations
- Emergency Clean-Up Projects
- Transportation, Storage and Disposal

COMMUNICATION OF POTENTIAL HAZARDS at construction sites is vital. Workers from all the various trades involved in a project must be notified of the potential hazards they face and advised in ways to protect themselves. Affected employees must also be notified of the results of air monitoring as soon as possible.

### **SAFETY IS EVERYONE'S BUSINESS**

#### ■ EMPLOYEES MUST:

- KNOW and respect asbestos hazards
- WEAR personal protective equipment—respirators and special clothing—when necessary
- FOLLOW recommended procedures to protect themselves, their co-workers and their families
- CONSIDER their health and safety at all times

#### ■ EMPLOYERS MUST:

- ADVISE and educate employees
- PROVIDE protective equipment and instructions for safe use
- MONITOR air in the work environment
- KEEP records of personnel and environmental monitoring
- PROVIDE for employees' medical examinations

**EMPLOYERS TAKE ALL THE necessary precautions to PROTECT their employees.**