ASBESTOS TRAINING ACKNOWLEDGEMENT

This is to acknowledge that I have received my copy of Asbestos in the Workplace. I further acknowledge that I have read and will comply with the contents presented.

Printed Name: _____

Signature: _____

Date: _____

What is Asbestos?

Asbestos is a naturally occurring fibrous mineral. Because it is fire-resistant, resists many chemicals, and is a good insulator, asbestos was added to a variety of building materials, including some acoustical materials, vinyl floor tiles, ceiling tiles, decorative spray coatings, thermal system insulation, and roofing materials. When left in tact and undisturbed, these materials do not pose a health risk to building occupants. Also used in toasters and automotive brake shoes.

In its natural state, asbestos occurs throughout much of the planet. It is found in two-thirds of the rocks in the earth's crust. Asbestos is commonly found throughout the United States in water supplies and in outside and indoor air. Asbestos fibers are released by erosion and carried by the wind. Depending on where you live, you are most likely inhaling between 10,000 and 15,000 fibers a day.

What is Asbestos used for and in?

The mineral's fire retardant qualities are among its most valuable characteristics. This led to its wide use in ships, buildings and theater curtains, where protection against fire was essential. In addition to its fire retardant properties, it has other qualities that make it useful, including a fibrous nature, heat stability, thermal and electrical resistance, flexibility, high tensile strength and stability in acids or alkalis. Thousands of lives have been saved by the use of asbestos. Because of its unique properties, asbestos is currently used in hundreds of products including vehicle brakes, roof shingles, building panels, water and sewer pipes, roof coatings, floor tiles, electrical insulating materials, specialized thermal insulation, elevator brakes, and protective aprons and gloves.

Health Effects due to Asbestos Exposure

Numerous studies of workplace exposures in occupational environments have linked asbestos with three diseases: asbestosis, a fibrotic lung condition; lung, cancer; and mesothelioma, a rare cancer of the surface linings of lung or abdominal tissues.

The studies have also found that the lung cancer risk from asbestos exposure is closely related to individual smoking habits, with very few lung cancer cases found among non-smokers.

The most common way for asbestos fibers to enter the body is through breathing. In fact, asbestos-containing material is not generally considered to be harmful unless it is releasing dust or fibers into the air where they can be inhaled or ingested. Many of the fibers will become trapped in the mucous membranes of the nose and throat where they can then be removed, but some may pass deep into the lungs, or, if - swallowed, into the digestive tract. Once they are trapped in the body, the fibers can cause health problems.

Asbestos is most hazardous when it is friable. The term "friable" means that the asbestos is easily crumbled by hand, releasing fibers into the air. Sprayed on asbestos insulation is highly friable. Asbestos floor tile is not.

Risk assessment models used to estimate the incidence of cancer from low exposures to hazardous substances predict very low levels. For example, the lifetime risk of cancer associated with non-occupational exposures to asbestos was found to be 1,000 to 10,000 times less than the risk due to tobacco alone.

Health Effects

Because it is so hard to destroy asbestos fibers, the body cannot break them down or remove them once they are lodged in lung or body tissues. They remain in place where they can cause disease. There are three primary diseases associated with asbestos exposure:

Asbestosis **Lung Cancer** **Mesothelioma**

Asbestosis:
Asbestosis is a serious, chronic, non-cancerous respiratory disease. Inhaled asbestos fibers aggravate lung tissues, which cause them to scar. Symptoms of asbestosis include shortness of breath and a dry crackling sound in the lungs while-inhaling. In its advanced stages, the disease may cause cardiac failure. There is no effective treatment for asbestosis; the disease is usually disabling or fatal. The risk of asbestosis is minimal for those who do not work with asbestos. The disease is rarely caused by neighborhood or family exposure. Those who renovate, or demolish buildings that contain asbestos may be- at significant risk, depending on the nature of the exposure and precautions taken.

Lung Cancer:
Lung cancer causes the largest number of deaths related to asbestos exposure. The incidence of lung cancer in people who are directly involved in the mining, milling, manufacturing and use of asbestos and its products is much higher than in the general population. The most common symptoms of lung cancer are coughing and a change in breathing. Other symptoms include shortness of breath, persistent chest pains, hoarseness, and anemia. People who have been exposed to asbestos and are also exposed to some other carcinogen -- such as cigarette smoke -- have a significantly greater risk of developing lung cancer than people who have only been exposed to asbestos. One study found that asbestos workers who smoke are about 90 times more likely to develop lung cancer than people who neither smoke nor have been exposed to asbestos.

Mesothelioma:
Mesothelioma is a rare form of cancer which. most often occurs in the thin membrane lining of the lungs, chest, abdomen, and (rarely) heart. About 200 cases are diagnosed each year in the United States. Virtually all cases of mesothelioma are linked with asbestos exposure. Approximately 2 percent of all miners and textile workers who work with asbestos, and 10 percent of all workers who were involved in the manufacture of asbestos-containing gas masks, contract mesothelioma.

Determining Factors of Developing Illness

Three things seem to determine your likelihood of developing one of these asbestos related diseases:

1. The amount and duration of exposure - the more you are exposed to asbestos and the more fibers that enter your body, the more likely you are to develop asbestos related problems. While there is no "safe level" of asbestos exposure, people who are exposed more frequently over a long period of time are more at risk.
2. Whether or not you smoke - if you smoke and you have been exposed to asbestos, you are far more likely to develop lung cancer than someone who does not-smoke and who has not been exposed to asbestos. If you work with asbestos or have been exposed to it, the first thing you* should do to reduce your chances of developing cancer is to stop smoking.
3. Age - cases of mesothelioma have occurred in the children of asbestos workers whose only exposures were from the dust brought home on the clothing of family members who worked with asbestos. The younger people are when they inhale asbestos, the more likely they are to develop mesothelioma. This is why enormous efforts are being made to prevent school children from being exposed.

Terminology

Asbestos Containing Material (ACM) - Any material containing more than 1% asbestos.

Asbestos Authorized Person - Any person authorized by the employer to be present in regulated areas that may contain asbestos.

Excursion Limit- For asbestos, the employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of one fiber per cubic centimeter of air, averaged over a sampling period of 30 minutes.

Friable Asbestos - Asbestos-containing material that when dry, can be crumbed to dust under hand pressure.

HEPA Filter (High Efficiency Particulate Air Filter) - a filter capable of trapping and retaining at least 99.97% of 0.3 micrometer diameter mono-disperse particles.

Permissible Exposure Limit (PEL) - The maximum exposure limit permitted by OSHA. The PEL for asbestos is 0.1 fibers per cubic centimeter. That would be approximately 2,000,000 fibers inhaled during a normal eight-hour workday. This level was established with the intent of preventing workers from contracting asbestosis.

Presumed Asbestos Containing Material (PACM) - Thermal system insulation and surfacing material found in buildings constructed in 1980 or prior.

Regulated Area - An area established by the employer to mark where airborne concentrations of asbestos have the possibility of exceeding the permissible exposure limits (PEL).

WHERE ASBESTOS WORKPLACE HAZARDS MY BE FOUND

The first step in protecting ourselves from Asbestos is to determine where you might encounter it. Common locations where Asbestos may be found (especially in buildings built prior to 1980) in the work place.

- Ductwork Insulation
- Acoustic Ceiling Material
- Drop Ceiling Tiles
- Asphalt Roofing Materials
- Pipe Lagging
- Taping Compounds
- Sprayed on Fire-proofing Insulation
- 9” X 9” Vinyl Asbestos Floor Tile
- Textured Paints and Plasters

COMMON LOCATIONS OF ASBESTOS IN HOMES

Again, because of the many benefits of Asbestos in building products, Asbestos is common in building materials found in our homes (especially homes built prior to 1980).

- Roofing felt
- Vinyl Asbestos Tile
- Block Insulation
- Pipe Lagging and Elbow Mud
- Taping Compounds and Asbestos Plaster
- Linoleum Backing
- Acoustic Ceiling Material
- Insulation in Fuse Boxes and Old Wire Insulation

RESPIRATORY PROTECTION

Respiratory protection is very important for both those who work directly with asbestos and for those who work in areas where airborne asbestos is present. (The use of a respirator is prohibited without proper training, fit testing and physical.) Note to remember: If there are no airborne asbestos fibers present, the use of respiratory protection is not required or needed. There are several types of Respiratory Protection available. The most common is the half or full-face mask with a HEPA (High Efficiency Particulate Air) filter cartridge. The color of the HEPA filter is Red to • Purple (depending on manufacturer). If it is not a HEPA filter, you are not protecting yourself from Asbestos. The other acceptable protection is the Supplied Air Respirator - SCBA's, Self Contained Breathing Apparatus. This form of protection utilizes provided pure air for protection.

PERSONAL HYGIENE

Ingestion of asbestos is the only other means of exposure, and the one means that is most easily avoided. It's simple, if your work involves being in areas where there is Asbestos, the basic personal hygiene steps will prevent you form ingesting Asbestos.

- Wash hands and face prior to eating at break time or lunch.
- Wash hands and face prior to smoking or chewing.
- Wash hands before applying makeup.

People are regularly exposed to asbestos.

The U.S. Environmental Protection Agency, _in broad samples of
local water supplies, detected naturally occurring asbestos in nearly three-fourths of all U.S. water systems. More than 15 percent had greater than one million fibers per liter (or more than 250,000 fibers per eight-ounce glass).
The `U.S. Department of Health, Education and Welfare reported
that in 20 U.S. cities, airborne asbestos concentrations ranged up to 0.007 fibers per cubic centimeter (fibers/cc) and averaged 0.0006 fibers/cc. Very recently, the National Academy of Sciences concluded that the average outside air concentration throughout the United States is 0.0004 fibers/cc.

What these rather complex figures mean simply is that people are exposed daily to asbestos without developing asbestos-related diseases.

Asbestos exposure is unavoidable, given its widespread natural occurrence in air and water. Asbestos fibers have been found in ' lungs and other tissues of the general population. Analyses of normal healthy adult lung tissues from persons who have not been exposed in the workplace have found that average lungs contain millions of asbestos fibers.

These findings indicate how pervasive asbestos is in our environment. Eliminating all exposure to, asbestos is impossible.

The National Academy of Sciences, and the *International Agency for Research on Cancer*, have concluded that low-level exposures do not pose significant public health risk.