ASBESTOS SAFETY AWARENESS

GOALS

Provide OSHA required training to JOI's custodial personnel with an overview of asbestos and its associated hazards. It is important for employees who work in building maintenance to know where asbestos is likely to be found and how to avoid exposure.

LEARNING OBJECTIVES

- Define what is asbestos
- Describe where asbestos is found
- Know when asbestos is dangerous
- How to avoid asbestos exposure

WHAT IS ASBESTOS?

The word "asbestos" comes from the Greek meaning "**inextinguishable**". Asbestos is a naturally occurring mineral that has been used for centuries. The term asbestos refers to six fibrous minerals that occur naturally in the environment. *Chrysotile* is the most common, but it is not unusual to encounter *Amosite* or *Crocidolite* as well. In the past, asbestos was added to a variety of products to strengthen them and to provide heat insulation and fire resistance.

ASBESTOS FIBER FACTS

- All types of asbestos tend to break into very tiny fibers.
- These individual fibers are so small they must be identified using a microscope.
- Some fibers may be up to 700 times smaller than a human hair.
- Because asbestos fibers are so small, once released into the air, they may stay suspended for hours or even days.
- Asbestos fibers are also virtually **indestructible**. They are resistant to chemicals and heat.
- Asbestos fibers do not evaporate into air or dissolve in water, and they are not broken down over time.
- Asbestos is probably the best insulator known to man. Because asbestos has so many useful properties, it has been used in over 3,000 different products.
- Usually asbestos is mixed with other materials to form products. Floor tiles, for example, may contain only a small percentage of asbestos. Depending on what the product is, the amount of asbestos in asbestos containing materials (**ACM**) may vary from less than 1% to 100%.

WHERE IS ASBESTOS FOUND?

Asbestos may be found in many different products and locations. Examples of ACMs include:

- Wall and ceiling insulation
- Siding shingles on old residential buildings
- Putties, caulks, & cements (such as in chemical carrying cement pipes)
- Sprayed-on fire proofing & insulation in buildings
- Joint compound in older pipes & boilers insulation
- Wall & ceiling texture in older buildings & homes
- Floor tiles
- Ceiling tiles
- Roofing shingles
- Buildings & homes
- Brake linings & clutch pads
- Old fume hoods & lab benches

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WHEN IS ASBESTOS DANGEROUS?

The most common way for asbestos fibers to enter the body is through breathing. **Asbestos containing material is <u>not</u> 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. For example, sprayed on asbestos insulation would be considered friable, while an asbestos floor tile would not. Asbestos-containing ceiling tiles, floor tiles, undamaged laboratory cabinet tops, shingles, fire doors, siding shingles, etc. **will not release asbestos fibers** unless they are disturbed or damaged in some way. If an asbestos ceiling tile is drilled or broken, for example, it may release fibers into the air. If the tile is left alone and not disturbed, it will not.

Damage and deterioration will increase the friability of asbestos-containing materials. Water damage, continual vibration, aging, and physical impact such as drilling, grinding, buffing, cutting, sawing, or striking can break the materials down making fiber release more likely.

HEALTH EFFECTS OF ASBESTOS EXPOSURE

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

Asbestosis - 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. Those who renovate/demolish buildings that contain asbestos may be at significant risk, depending on the nature of the exposure and precautions taken.

Lung Cancer - causes the largest number of deaths related to asbestos exposure. Most common symptoms are coughing, 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 those who don't smoke & have not been exposed to asbestos.

Mesothelioma - a rare form of cancer that 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.

Other Cancers - Evidence suggests that cancers in the esophagus, larynx, oral cavity, stomach, colon and kidney may be caused by ingesting asbestos.

DETERMINING FACTORS

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 efforts are being made to prevent school children from being exposed.

HOW TO AVOID ASBESTOS EXPOSURE

In order to avoid being exposed to asbestos, you must be aware of the locations it is likely to be found. **If you do not know whether something is asbestos or not, assume that it is** until it is verified otherwise. **Do not disturb it.** Remember, you can't tell if floor or ceiling tiles contain asbestos just by looking at them.

JOI personnel are not certified to remove asbestos. However, our employees must understand how to protect themselves in the event that asbestos fibers become airborne and potentially inhaled. It is essential that the proper PPE be worn—for example, a proper mask that covers your nose and mouth, gloves, shoe covers, etc.

Housekeeping

Housekeepers and custodians should never sand or dry buff asbestos containing floor tiles, and only wet stripping methods may be used during stripping operations. Broken and fallen ceiling tiles should be left in place until identified. Only after they have been identified as safe may they be removed. Asbestos tiles will be removed by asbestos abatement workers. Broken and damaged asbestos floor tiles must also be removed by asbestos abatement workers. Report any suspect broken tiles.

If you discover some sprayed-on asbestos insulation has been knocked off of a ceiling or wall, this would need to be cleaned up immediately by asbestos abatement workers. **Do not attempt to clean up potential asbestos material yourself!** Disturb the material as little as possible. Also, report damaged pipe insulation, ceiling tile, floor tile, fallen clumps of sprayed-on insulation, etc. Take measures to prevent others from disturbing the spill.

By knowing where asbestos is likely to be located and then taking measures not to disturb it, you will protect yourself and others from exposure to this hazardous substance. **BE AWARE – BE SAFE!**

ASBESTOS SAFETY AWARENESS

TEST YOUR KNOWLEDGE

1. **OSHA requires that asbestos safety awareness training is provided on an annual basis to custodial and maintenance personnel who may work in areas that may have asbestos-containing material.**

   True False

2. **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.**

   True False

3. **Asbestos, when disturbed, tends to break into tiny fibers that can stay suspended in the air for only a few minutes.**

   True False

4. **Asbestos is most hazardous when it is friable. Friable means that the particles of asbestos can catch on fire.**

   True False

5. **There are 3 primary diseases associated with asbestos exposure—asbestosis, lung cancer and mesothelioma.**

   True False

6. **You can always tell if something contains asbestos, making it easy to stay away from it.**

   True False

7. **If you are a smoker and are exposed to asbestos, you are more likely to develop lung cancer than someone who doesn't smoke and has not been exposed.**

   True False

8. **If you find some sprayed-on asbestos insulation has fallen off of a ceiling or wall, you should clean it up immediately.**

   True False

9. **JOI employees are certified asbestos abatement personnel.**

   True False

Name:_____

Date:_____