

# ASBESTOS

**Asbestos** is a naturally occurring mineral, which is mined in certain regions of the world. It is removed from the ground in a rock form, processed via crushing, and introduced into the final product for which it will be used. During the processing phase, the rock form breaks down into fibers. Historically, asbestos was blended with other raw materials to manufacture such items as thermal insulation (i.e., pipe insulation, boiler and vessel jackets), fire proofing, brake and clutch linings, ceiling tiles, floor tiles, and roofing materials to name a few.

Asbestos was used because of its many attractive features, such as heat/fire resistance and durability. 100% asbestos was seldom ever used in products; rather, was one component of a mixture, which when blended, provided the best composition to meet the needs of the final product. Therefore, when we refer to a material as “asbestos”, what we really mean is that the material is an asbestos-containing material (ACM). By definition, a material (mixture) is considered asbestos-containing if it contains greater than 1% asbestos.

## How Is Asbestos Identified?

Beside documentation from the material manufacturer (i.e., via MSDS or other written certification), the only way to definitely identify whether or not a material contains asbestos is through laboratory testing. Visually looking at material suspect of containing asbestos can easily result in erroneous conclusions. OSHA has included within the asbestos standards that all thermal insulation and floor tile installed prior to 1981 must be presumed asbestos-containing material (PACM) unless the building owner can demonstrate otherwise (via sampling or clear documentation). Therefore, there may be cases at your facility where material is presumed to contain asbestos, and will be treated as such unless testing determines otherwise.

## Who Is Potentially Exposed?

Anyone working around ACM which has been damaged can potentially be exposed; however, those individuals at greater risk of exposure are those directly involved with disturbing ACM. Historically, these individuals have worked as insulators/pipe fitters, shipping yard employees, asbestos miners, mechanics involved with brake and/or clutch activities, and asbestos abatement contractors. The nature of these jobs frequently calls for handling/disturbing ACM. For several years now there have been special handling procedures in place for activities which result in disturbance of ACM.

## What Are The Hazards Associated With Asbestos?

When bonded together and/or encapsulated by a jacket or other protective coating, asbestos fibers pose little hazard. But in the process of disturbing ACM (via cutting, scraping, etc.), tiny fibers may be released into the air, which in turn may be inhaled into the lungs. The major health effects associated with asbestos exposure include:

- ◇ **Asbestos**, which is a scarring of the lung tissue, making it difficult for oxygen to leave the lungs and enter the blood stream.

- ◇ **Mesothelioma**, which is a rare form of cancer of the membrane lining the lungs, caused by fibers penetrating the lungs and entering this lining.
- ◇ **Lung Cancer**. When combined with cigarette smoking, an asbestos-exposed individual faces as much as 90 times the risk of developing lung cancer as non-smokers.

Typically, these diseases do not appear for 20-years or more following initial exposure, and have mostly been identified with excessive exposures (above OSHA exposure limits). Permissible exposure limits (PELs) have been established by OSHA to prevent asbestos-related disease.

### **What Is Being Done To Control Exposure?**

The condition of thermal system insulation is maintained via metal or cloth jacketing which protects the insulation from damage due to direct contact, and helps hold the insulation in place. When ACM is “encapsulated” by such protective materials, asbestos fibers will not be released to become airborne. In the event that ACM is disturbed (i.e., the protective jacketing is punctured, and ACM is disturbed), then the company takes steps to have the material either repaired or removed. In most the company locations, all repair or removal is carried out by a licensed asbestos abatement contractor. Where company employees do carry out minimal asbestos activities (e.g., brake and clutch repair and emergency response to ACM release or need to access a pipe fitting), special OSHA and EPA procedures shall be implemented and employees shall have received specific training in such procedures.

Over the years, the company has replaced ACM with asbestos-free materials during projects involving major removal of thermal insulation.

### **What Can You Do To Control Exposure?**

Unless you have received special training in asbestos abatement, do not disturb material identified as ACM or PACM.

If you notice material identified as ACM or PACM that has been damaged, bring it to your Supervisor’s attention. Meanwhile, do not disturb any debris which may have come from the damage, or if possible, barrier the area so that others will not disturb debris.

If you have received training in minor asbestos activities (i.e., brake repair, emergency removal of small quantities of insulation), be sure to follow proper procedures, which were part of your formal training. Deviating from them could result in a release of fibers, potentially exposing your self and others.