



Asbestos: Exposure and Health Hazards FACTSHEET



Asbestos in Buildings – How Does Exposure Occur?

Asbestos products in perfect, intact condition do not necessarily give off any fibers in to the air. To be hazardous, the fibers must become airborne so that people breathe them. The problem is that even intact asbestos always has the potential to be hazardous. Fibers may sooner or later be given off via the following mechanisms:

1. DETERIORATION

Although asbestos fibers themselves are indestructible, the insulation products that contain them tend to crumble and flake with age, releasing the fibers. Exposure can occur due to “fallout” from the deteriorating material. A good example of this is the finding of asbestos clumps above a dropped ceiling.

2. DAMAGE

Asbestos materials may be damaged by water leaks or vandalism. This can cause release of fibers.

3. RENOVATION

Asbestos materials may be disturbed by renovation activities such as installation of new ventilation, phone lines, walls, computers, sprinklers, or a wide variety of jobs. It is still relatively rare to see renovation workers trained in asbestos precautions. This is the single biggest asbestos exposure problem for most buildings.

4. RESUSPENSION

Once asbestos fibers are released by one of the three methods mentioned above, they tend to cause repeated exposure episodes. This is because the fibers eventually settle out of the air onto surfaces, and custodial activities such as dry sweeping and vacuuming can redistribute the fibers into the air. Foot traffic from building occupants can also cause resuspension exposures.

Health Hazards from Exposure

Asbestos enters the body by inhalation of airborne fibers (Asbestos does not penetrate the skin). Once inhaled, asbestos fibers can travel deep into the lungs. Because asbestos fibers are so durable, the body can not break them down. This leads to several serious occupational diseases.

I. SHORT-TERM EFFECTS

Asbestos does not cause any short term effects. You can be in a cloud of asbestos and it will not cause any irritation, odor, headache or other symptoms. Thus, asbestos has no warning properties.

II. LONG-TERM EFFECTS

All of the health effects of asbestos are long term. Scientists call the 20 or so year gap between exposure and disease manifestation the “**latent period**”. Specific diseases are described below:

- **ASBESTOSIS** Asbestosis is not a form of cancer. It is a dust disease more like black lung or silicosis, where the asbestos fibers cause a scarring reaction in the lung tissue. This scarring obstructs the flow of oxygen from lungs to the blood, so that the body becomes starved for oxygen. In earlier days, asbestosis killed workers outright. Now, it tends to cause disability, leading to increased risk of death due to bronchitis, pneumonia, or heart disease. Asbestosis is usually associated with considerable exposures, although it has been found in school custodians and spouses of asbestos workers.
- **LUNG CANCER** This type of cancer is related to asbestos. No “safe level” is known, although higher exposures are clearly linked with higher cancer rates. There is a critical link between smoking and asbestos exposure. A non-smoking asbestos worker has a lung cancer risk five times higher than normal. A smoking asbestos worker has a risk 50-90 times higher than normal.
- **MESOTHELIOMA** This type of cancer attacks the membrane lining between the chest wall and lungs. This type of cancer was unknown prior to the use of asbestos. Virtually no other substance causes this disease. The disease is always fatal, and affected individuals rarely live more than a year or two after initial diagnosis.
- **GASTROINTESTINAL CANCER** Asbestos has been linked with cancers of the digestive tract – from mouth and throat to esophagus, stomach, small and large bowel and rectum. It has been theorized that the digestive system is exposed when certain fibers are carried in mucous to the back of the throat and swallowed.
- **KIDNEY CANCER** Several studies have associated asbestos with this disease.

In sum, asbestos has been proven to cause several very serious diseases. While no safe level is known, exposure should be reduced to the lowest levels possible.

Information provided by Workers’ Institute for Safety and Health

Upon request, PEF Occupational Safety & Health will provide other factsheets, standards, regulations, and other resources. Contact us at healthandsafety@pef.org or 518-785-1900, ext. 254 or 1-800-342-4306, ext. 254.

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