Vermiculite Insulation Containing Asbestos

What is vermiculite?

Vermiculite is a silver-gold to gray-brown mineral that is flat and shiny in its natural state. When heated to around 1000 degrees C, it pops (or puffs up) which creates pockets of air. This expanded form, and the fact that vermiculite does not burn, made the material suitable for use as insulation.

Is all vermiculite a health concern?

Vermiculite itself has not been shown to be a health problem. However, some vermiculite insulation contained asbestos fibres, which can cause problems if inhaled. As long as this kind of vermiculite-based insulation remains undisturbed behind intact walls or in attic spaces and does not become airborne, it should not be a concern.

Of concern is Zonolite® Attic Insulation; this insulation was sold in Canada under the name of Zonolite® and was extracted from the Libby Mine in Montana, USA. This mine had a natural deposit of asbestos which resulted in the vermiculite being contaminated with asbestos.

Vermiculite produced by the Libby Mine has not been on the market in Canada for more than 10 years. Not all vermiculite sold in Canada before 1990 contains asbestos fibres. However, if you believe that your home may contain vermiculite insulation, it is reasonable to assume that it may be contaminated with asbestos.

What are the health risks of vermiculite containing asbestos?

Asbestos can cause health problems when inhaled into the lungs. Breathing in very small, airborne asbestos fibres has been associated with diseases such as asbestosis, mesothelioma and lung cancer.

- **Asbestosis –** Asbestosis is a lung disease that occurs when asbestos fibres are inhaled. It is a chronic disease with slow onset that usually requires several years of exposure. The development and progression of asbestosis varies from individual to individual. It is often slow with little changes over five, ten or more years. Many cases do not advance after diagnosis. It may, however, be quicker in some individuals than in others due to different conditions of past dust exposure. Asbestosis is characterized by pulmonary fibrosis (the formation of scar-like tissue). Shortness of breath is the most common symptom. In most cases, the first and often the only physical sign is “crackles” – sounds that can be heard through a stethoscope. Also known as “rales”, they are usually detected near the end of a full inspiration. Chest x-rays will show small

irregular opacities (spots in x-ray film that are opaque or where x-rays could not “see” through the tissue). These are commonly found in the middle and lower lungs. Lung function tests can help to determine how serious the condition is.

- **Mesothelioma –** Mesothelioma is a cancer of the pleural and peritoneal cells (lining of the lung and abdominal cavity). The site of this tumor might be the lung (pleural) or the abdomen (peritoneal). Patients with pleural mesothelioma experience chest and shoulder pain and dry cough is frequent. As the cancer progresses and the tumor grows bigger, weight loss, weakness, and fever may also occur. The time between the initial exposure to asbestos and clinical signs of the disease (latency) is difficult to define because for mesothelioma the range is quite wide and the disease is rarely seen less than 10 years from the time of the first exposure and it may occur even after 40 years.
- **Lung Cancer –** Asbestos can cause lung cancer. Lung cancer takes many years to develop, but changes in the lung can begin almost as soon as a person is exposed to asbestos. Lung cancer usually does not cause symptoms in the early stages. When symptoms occur the cancer is often advanced. Symptoms of lung cancer include chronic cough, weight loss, shortness of breath, fever, and chest pain. These symptoms are also common with other lung disorders, therefore to confirm the diagnosis it is necessary to carry out laboratory tests including chest x-ray.

How can we minimize the risk?

The best way to minimize asbestos exposure from vermiculite is to NOT remove or disturb the insulation. Moving the vermiculite will cause fibres to become airborne. The following precautions will prevent releasing asbestos fibres into the air:

- Do not use the attic for storage.
- Nobody should go into the attic.
- If you plan to renovate, hire a professional who is trained and certified to handle asbestos.
- Never remove the insulation yourself.
- Seal all cracks and holes in the ceilings to prevent insulation from sifting through.
- Caulk around light fixtures and the access to the attic to prevent insulation from falling.
- It is possible for some insulation to fall inside the walls. Caulk window and door frames, along baseboards and around electrical outlets.