



Vermiculite Insulation and Asbestos



Published June 2007

CREA

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BACKGROUND

Vermiculite is a mica-like mineral mined around the world and used in a variety of commercial and consumer products because it is fire-resistant and has good insulation qualities. In the production process, thin sheets mined from the ground are popped by heat like popcorn. The resulting insulation is a loose-fill or pourable product that consists of small cubes about half a centimetre across, with reflective surfaces that look a bit like mica.



Concerns have recently emerged that some of the vermiculite insulation installed in some Canadian homes may contain asbestos. The concern involves insulation produced from vermiculite ore from the Libby Mine in Montana from the 1920s until 1990. It was sold as Zonolite® Attic

Insulation and possibly other brands in Canada during that time. Vermiculite from the Libby Mine may contain asbestos. The Libby Mine supplied the majority of the North American market in vermiculite insulation. Products made from vermiculite ore produced by the Libby Mine were not widely used after the mid-1980s and have not been on the market in Canada for more than 10 years.

Asbestos poses health risks only when fibres are present in the air that people breathe. If asbestos fibres are enclosed, isolated or tightly bound in a product - for example in asbestos siding or asbestos floor tiles - Health Canada says there are no significant health risks. Although the overall percentages of asbestos in Zonolite® may be very low, the airborne percentages of fibres can increase if the material is disturbed. When inhaled in significant quantities, asbestos fibres can cause asbestosis, which is a scarring of the lungs that makes breathing difficult. It may also cause lung cancer or mesothelioma, which is a rare cancer of the lining of the chest or abdominal cavity.

Vermiculite was one of four types of loose fill insulation approved for installation under the Canadian Home Insulation Program (CHIP) that provided grants to homeowners who improved home energy efficiency. CHIP was operated by the federal government between 1977 and 1984.



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HEALTH CANADA'S ADVISORY ABOUT VERMICULITE INSULATION

Health Canada has warned that attic insulation in some homes may contain a form of asbestos that is a known cancer-causing agent. The insulation specifically identified in the advisory is vermiculite produced from the Libby Mine in Montana from the 1920s until 1990, and sold in Canada as Zonolite® Attic Insulation. It may have been sold under other labels as well.

The product was used in Canada from the 1920s until production stopped in 1990. No breakdown of the geographic use or installation is available. Zonolite® vermiculite insulation produced from that mine in Montana may contain tremolite or other forms of amphibole asbestos. When inhaled, these asbestos fibres can lodge in the lungs, which, over time may result in lung diseases such as asbestosis, lung cancer, or mesothelioma.



Not all vermiculite produced before 1990 contains asbestos fibres. It is estimated that vermiculite insulation was installed in about three per cent of the existing Canadian low-rise housing stock - or about 250,000 houses. These include single and multi-family homes in residential neighborhoods, native housing and homes on Canadian military bases. It is not known, however, how many of these homes were specifically insulated with Zonolite®.

According to Health Canada, there is currently no evidence of a risk to human health if this insulation is sealed behind wallboards and floorboards, isolated in an attic, or otherwise kept from exposure to the interior environment. If the insulation contains asbestos and it is disturbed, it could release fibres into the air. This means the risks are more serious and worsen with increased exposure.

If a building has older vermiculite-based insulation, homeowners should take precautions. If the vermiculite insulation is contained, isolated and left undisturbed, it poses little health risk. Residents and those visiting buildings with the insulation are advised to make sure children don't play in the attic, and should not use the attic as storage space if it will disturb the insulation. Residents should not disturb the insulation or attempt to remove it themselves. In addition, a professional inspection should be done before homeowners start major renovations.

MINIMIZING THE RISK

The best way to minimize the risk of asbestos exposure is to avoid disturbing vermiculite insulation in any way. If this type of insulation is contained and not exposed to the home interior, it poses very little risk. If you or your client is concerned, a professional home inspector can identify if vermiculite is present. There is no simple test you can do to identify whether vermiculite does or does not contain asbestos. A complete lab analysis is required to confirm the presence of asbestos fibres; however, such an analysis may be unable to detect small quantities of asbestos in vermiculite.

If there is the confirmed presence of vermiculite insulation in the attic, Health Canada recommends homeowners take these precautionary steps.

- Do not allow children to play in an attic with open areas of vermiculite-based insulation and make sure anyone working in the attic knows about the possible presence of asbestos.
- Do not use the attic for storage if retrieving the items from storage may disturb the insulation.
- If the homeowner must go into the attic, walk on boards in order to minimize disturbance of the insulation and use an appropriate respirator mask.

According to Health Canada, common dust masks are not effective against asbestos fibres and it is recommended that provincial occupational health authorities be contacted for advice on masks.

There is currently no evidence of risk to health if vermiculite insulation is sealed behind wallboard or under floorboards, isolated in the attic, or otherwise kept away from the home interior. If the home has vermiculite insulation and the owner decides to do renovations or have it removed, a trained and qualified asbestos removal professional should be hired to handle the task. They are often listed in the phone book under "asbestos abatement/removal." Homeowners should NEVER attempt to remove the insulation on their own.

Normally, air moves from the living space into the attic, reducing the possible movement of asbestos to the indoors. Homeowners can seal all cracks and holes in the ceilings of the rooms below the insulation by caulking around light fixtures and the attic hatch. This will help prevent insulation from sifting through. If vermiculite insulation is in the walls, the homeowner can apply caulking around window and door frames, along baseboards and around electrical outlets to seal potential leak points as a precautionary step.



WHAT'S THE DIFFERENCE BETWEEN ZONOLITE® AND UFFI?

REALTORS® were obliged to tell buyers about the presence of UFFI because of a CMHC disclosure form related to mortgage insurance, which requested a disclosure from the seller as to whether they were aware if there had ever been UFFI in the house. CMHC no longer requires a UFFI declaration, and no such declaration is required for the presence of vermiculite insulation.

The Government of Canada banned UFFI because of a suspected health risk. In addition, concerns with product quality and poor installation practices contributed to the decision to ban UFFI. The federal government also operated a program to help owners remove UFFI from their homes.

Vermiculite insulation containing asbestos is not a banned substance, and the health risk occurs only if it is disturbed or not handled properly. According to the federal government, there are no concerns about vermiculite causing damage to a house. It is estimated that between 200,000 to 300,000 homes had vermiculite insulation installed, but there is no estimate as to how many of those homes were insulated with Zonolite®.



*Images of UFFI above courtesy of Carson Dunlop.
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VERMICULITE INSULATION



Photo: Protech

UFFI