

Diseases, Disorders and Injuries

Vermiculite Insulation Containing Asbestos

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What is vermiculite?

Vermiculite is a silver-gold to gray-brown mineral that is flat and shiny (flakes) in its natural state. It's composition and the presence of trace minerals or other contaminants depends on where it is located. When vermiculite ore is heated to around 1000 degrees C, it pops (or puffs up) which creates pockets of air. This expanded form is light weight, fire resistant, chemical resistant, and odourless. 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 cause health issues. Based on available information, there is no evidence that dust from asbestos free vermiculite will cause any serious health effects. Nevertheless, as with any dust, workers should take precautions and avoid long, high-level exposures.

Most suppliers and Quebec's provincial Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST) have classified asbestos-free vermiculite as a product that is not regulated under WHMIS 2015.

However, if the vermiculite insulation contained asbestos fibres, these asbestos fibres are related to health issues if inhaled.

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. The Libby Mine closed in 1990. Other mine sites did not have this contamination issue.

These variations means that not all vermiculite sold in Canada before 1990 contains asbestos fibres. However, if you believe that your home may contain vermiculite insulation, it is recommended to have the insulation tested before doing any work as it may contain asbestos.

Note that as long as the vermiculite-based insulation remains undisturbed behind intact walls or in attic spaces and does not become airborne, it should not be a concern. Have testing done by a competent person (e.g., an occupational hygienist or consultant who specializes in asbestos abatement) and send the samples to an accredited laboratory before any work (renovations, remodelling, etc.) is done to the workplace building or home.

Vermiculite is still mined and sold for uses such as insulation, packaging, agriculture, etc. These materials are tested for the absence of asbestos before use.

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.

People are more likely to experience asbestos-related disorders if they:

- are exposed to high concentrations of asbestos,
- are exposed for longer periods of time, and/or
- are exposed to asbestos more frequently.

See the OSH Answers on [Asbestos – Health Effects](#) for more details.

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.

It is not always necessary to remove the asbestos from the workplace or home. Removal depends on:

- Where the asbestos is located, and
- If there is a potential for it to become airborne.

Hire a competent professional (e.g., occupational hygienist or consultant who specializes in asbestos abatement) to do a risk assessment.

Unprotected persons or workers who renovate, disturb vermiculite during maintenance, disturb the vermiculite during an inspection, or demolish older buildings are at risk of inhaling asbestos fibres from airborne asbestos contaminated vermiculite, especially if the house was built before 1990. Those persons with the highest risk of breathing asbestos fibres are:

- Demolition and renovation contractors
- Carpenters, plumbers, and electricians
- Building owners, home inspectors, insurance adjusters, and real estate agents

The following precautions will help 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, remodel, or demolish in a way that will disturb the insulation, hire a professional to take samples of the insulation and have it tested in a laboratory.
- If the results are positive, hire a qualified asbestos removal professional who is trained and certified to handle asbestos. Do NOT handle vermiculite that contains asbestos without the appropriate training.
- Never handle or remove the insulation yourself if you suspect asbestos. If you are a worker and are unsure, share your concerns with your supervisor, employer, or health and safety committee.
- 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.

If the results of the sample test are negative and there is no asbestos concern, and removal may proceed without special precautions for asbestos.

If at a workplace, and you are unsure about the work being done, report your concerns to your supervisor, health and safety committee or representative, or employer.

Please see the following OSH Answers documents for more information:

- [Asbestos – Control Strategies for Workplaces](#)
- [Asbestos – In the Home](#)
- [Asbestos \(chemical profile\)](#)
- [Selecting and Hiring an OH&S Consultant](#)

Where can I get more information?

For more information consult the Government of Canada web page on [Asbestos](#) or see the OSH Answers documents on [Asbestos](#).

Most provincial and territorial governments have regulated asbestos removal. Please contact the [department responsible for health and safety](#) in your area for more information.

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