

Asbestos, Mold & Lead Abatement

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Introduction

As a heritage property owner, a tenant or an employee in a heritage building, it is important to be aware of the potential health hazards and related safety precautions associated with asbestos, mold and lead as outlined in this Practical Guide.

Asbestos

What is asbestos?

Asbestos products have been widely used in building products due to their durability and resistance to fire. Asbestos is a generic term applied to a wide range of fibrous minerals found naturally in rock formations worldwide. Commercial asbestos fibers can be attributed to either the serpentine (chrysotile) or amphibole mineralogical groups. Both possess different structural and chemical traits. Chrysotile asbestos is most commonly found in manufactured asbestos products, although its use has dramatically declined since the 1980s. Amphibole asbestos, no longer mined, contains more iron and can remain longer in the lungs.



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Why is asbestos dangerous?

Asbestos is harmful when its fibers can be inhaled. The extent of damage and exposure depend on the:

- amount of fibers in the air
- exposure length and occurrence
- size of fibers inhaled
- amount of time since first exposure
- type of asbestos fiber

According to Health Canada, the health risks associated with asbestos are not determined by the amount of asbestos in a product. There is no significant health risks associated with asbestos when its fibers stay intact and enclosed within a product.

When inhaled in significant quantity, asbestos fibers can be responsible for the following health conditions:

- asbestosis (scarring of the lungs)
- mesothelioma (rare cancer in the lining of the chest or abdominal cavity)
- cancer (lung, larynx, and ovarian)
- some evidence suggesting ties to cancer of the pharynx and stomach

Are you at risk of asbestos exposure?

Natural levels of asbestos fibers in water and air are extremely low. If asbestos products in your home are undisturbed, fiber levels will typically be the same indoors as they are outdoors. Asbestos fibers become a health hazard when the product containing them is cut, damaged, or deteriorated. Often times, it is best not to remove intact asbestos products. It is however important to identify which products and surfaces in your home may contain asbestos fibers, to alleviate damages, help prevent deterioration, and ensure proper abatement.

Common residential sources of asbestos

A professional can help you to identify and analyze which products in your home contain asbestos. The U.S. Consumer Product Safety Commission identifies the following as potential products containing asbestos:

- Insulation
- Textured paint and patching compounds
- Paper, millboard and cement sheets used around wood-burning stoves
- Vinyl and vinyl-sheet flooring and adhesives
- Hot-water and steam-pipe taping and insulation



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Asbestos abatement

Homeowners are encouraged to seek expert advice before removing materials that may contain asbestos. If you must handle a small area of damaged products containing asbestos, refrain from cutting or damaging the material further and follow the “Work Principles for Lead and Asbestos Abatement” discussed on page 6.

Mold

What is mold?

Molds belong to a group of microorganisms called fungi, along with mushrooms and yeast. Fungi are quick to grow and reproduce. Although molds do provide helpful functions, such as penicillin and use in the production of certain foods and beverages, it is problematic when found in the interior of dwellings.

Mold can be identified by the following symptoms, as identified by The Canada Mortgage and Housing Corporation (CMHC):

- Discolouration on surfaces (i.e. walls, ceilings, and furnishings)
- Stains on carpets
- Mold on drapes and rear of furniture
- Stains on personal items close to affected areas (i.e. storage boxes and clothing)
- Musty smells
- Rotting wood

Health Canada attributes the major causes of mold growth to:

- Condensation of moisture on surfaces due to excessive humidity, lack of ventilation, or low temperature
- Water leakage (i.e. broken pipe)
- Exterior water infiltration (i.e. leaking roof or cracked basement foundation)
- Past flood

Why is mold problematic?

Mold in your home can cause physical damages to the property, such as:

- unsightly stains



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- damage to physical property (i.e. disintegration of paper products, damage to fabrics, paints, wood, drywall, ceiling tiles, and eventual structural damage)
- allergies
- illness

Health problems are caused due to spores and chemicals released by the fungi. Effects can range from being insignificant to causing allergies and illnesses, depending on the type of mold, exposure degree and length, and health of residents or occupants. Researchers have identified more than 270 types of mold living in Canadian homes. Infants, pregnant women, the elderly, and individuals with a weakened immune system or respiratory disease have a higher risk associated with exposure to mold. Consult your family physician if you believe that you or one of your family members are at risk.

Mold prevention

- Ensure that areas of high humidity are well ventilated and dry materials before storing to avoid condensation.
- Purchase a hygrometer at your hardware or electronic store to measure your residence's relative humidity.
- De-clutter your personal belongings and furnishings to allow for better air movement.
- Clean often. It is preferable to vacuum with a HEPA filter.
- If mold is detected, clean the area and try to determine and eliminate the source of moisture. Mold will reappear if the condition is not altered.
- Painting over mold will only temporarily mask the situation, as it does not stop it from growing.

Mold clean-up

If attempting to clean small mold problems, CMHC recommends that you wear the following minimum protective gear:

- Safety glasses or goggles
- Disposable dust mask (3M 8210 or equivalent)
- Household rubber gloves

To clean moldy drywall, first clean the surface with a damp rag using a little detergent or baking soda. The drywall should not get wet. If cleaning does not remove the stain, the drywall might need to be discarded.

To clean mold on washable surfaces, first vacuum the affected area, preferably with a HEPA vacuum cleaner. Secondly, scrub the area with an unscented detergent before sponging with a wet rag. Once again, vacuum the area and surroundings.



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The working area should not be accessible to any infants or individuals with heightened risk during cleaning.

Lead

Why is lead dangerous?

Lead is a cumulative poison and a primarily recognized brain poison, or neurotoxin. Lead can inhibit the production of hemoglobin and the processes necessary for metabolizing vitamin D and calcium. Long-term exposure to lead can lead to high blood pressure and peripheral vascular disease. Exposure to lead can inhibit the development of the brain and nervous system, resulting in learning and behavioural difficulties. It is therefore extremely important to protect children and pregnant women from lead exposure. There is no safe amount of lead intake, although risks associated with exposure decrease with decreasing amounts of lead.

Are you at risk of lead exposure?

You and your family may be at risk if any of the following apply:

- You live in a home built before 1960
- Your home's plumbing was installed before 1990
- You live near an industry (i.e. lead-battery recycling factory) or large vehicular artery (i.e. highways)

Common residential sources of lead

- Paint/paint dust
- Water
- Soil

Lead-based paint

If your home was built before 1960, it most likely contains one or more layers of lead-based paint. It is best to test your paint if you suspect it might be lead-based. [The Standards Council of Canada](#) and [The Canadian Association for Laboratory Accreditation](#) are the two organizations in Canada responsible for certifying laboratories for lead-based paint testing. Any laboratory will help you with preparations and safety precautions prior to sending paint samples for analysis. Do-it-yourself lead test kits can also be purchased at local hardware stores.



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Where lead paint is intact and will not be within reach of children, it may be safest not to remove it. The area can be repainted or covered with wallpaper, wallboard or paneling for extra precaution against lead dust. Care should be taken to evaluate high-friction areas such as windows, doors, flooring and stairs, for wear and lead dust.

Removal of Lead Based Paint

As with all paints, lead paint will eventually chalk, peel, flake, or erode, at which time it should be removed following strict safety precautions and guidelines.

Before removing or altering any feature of your home, assess its historical and architectural significance. This can also help you identify which features should be preserved, replaced in kind, or can be removed. Consider hiring a professional to limit the safety risks associated with the removal of lead-based paint. There is, however, no legal requirement for contractors in Canada to take courses on lead-based paint abatement. As training is not widely available, you can also consider hiring a contractor who is familiar with asbestos removal as the work ethics and principles are the same.

If conducting the work yourself, do not use any removal methods that will create lead dust, flakes or fumes, such as sanders, heat guns or blowlamps. Although they may also contain harmful substances, chemical paint strippers, in the form of a paste applicable by brush, are preferred. Please read the warnings and instructions provided by the manufacturer before use. Refer to the Region of Waterloo's [Practical Guide: Paint & Colour](#) for more information on paint removal methods.

Work principles for lead and asbestos abatement

The following work principles for lead and asbestos abatement have been compiled from a number of sources referenced at the end of this guide.

Prior to work:

- Remove all furnishings (i.e. carpets, curtains, furniture, toys, books, etc.) from the work area. Use plastic sheeting to completely cover and seal anything that cannot be removed.
- To prevent the spread of dust and fumes to other sections of the home, isolate the work area by covering all doorways and vents with plastic sheeting and tape. Cover the floor or any wall-to-wall carpet with a plastic sheet, attached to the baseboards with heavy duty adhesive tape.
- Before starting the work, make sure the room is properly ventilated.



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- Always wear protective clothing (i.e. goggles, gloves, overalls, hat, shoe covers) and a good quality breathing mask.
- Never eat, drink or smoke while removing paint, and keep anything that might cause a spark or static electricity out of the work area.
- Keep misting the work area with water, as it will help contain dust.
- Take breaks outdoors often. It is recommended you do not work for more than 10 minutes at a time when removing lead paint. Leave the work area right away if you have trouble breathing, get a headache, or feel dizzy or sick.

Cleaning after work:

- Clean the work area thoroughly at the end of each day. Put paint scrapings, chips and any other product waste in a sealed container marked Hazardous Waste. Then wipe down the work area with a clean damp cloth, and throw the cloth away.
- Clean all horizontal surfaces (i.e. sills, moldings, ledges, etc.), cracks, corners, floorboards, and carpets with a vacuum (preferably a HEPA vacuum).
- Damp wipe and mop all surfaces. Squeeze the dirty water from mops and rags into an empty bucket, keeping the rinsing water separate. Change the rinsing water bucket often.
- Remove footwear and work clothes upon exiting the work area. Wash work clothes separately from family laundry or throw clothes away. Double-rinse the machine before the family laundry is complete.
- Contact [Region of Waterloo Waste Management](#) for instructions on hazardous household waste disposal.
- After removing lead paint, a lead-dust swab should be conducted before access to the room is reinstated.

Water

Since lead concentration in natural water supplies is very low, lead content in your home's water supply is most likely due to the use of lead pipes in your home, welded lead plumbing used for repairs, or lead service connections joining your home to the jurisdiction's water supply. Your home may have leaded pipes or leaded solder if it was built prior to 1990, and may have leaded services if built prior to 1960. It is recommended that you test the lead levels in your drinking water by contacting the [Canadian Association for Laboratory Accreditation](#), who have partnered with the [Standards Council of Canada](#), since home tests may result in false findings. The appropriate amount of lead measured for your tap's drinking water, allowed to run until cold, should be no more than 10 parts per billion, as per the requirements on the [Guidelines for Canadian Drinking Water Quality](#). If you are dependent on a well with a submersible pump of a leaded-brass variety, also test your drinking water for lead concentration.



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Soil

Lead does not decompose quickly in soil. Its presence is often linked to deteriorated exterior lead based paint, the historic use of leaded gasoline, and local industrial sources. Urban areas will often have higher concentrations of lead in the soil, compared to rural areas. Good precautionary steps are to encourage children to take their shoes off before entering the home, and washing their hands often during and after playing outside. If you are planting an urban garden, have your soil tested, and if necessary install new soil and build containers or beds atop the contaminated areas. It is always a good idea to have your soil tested for lead levels by The Canadian Association for Laboratory Accreditation.

Note: For information on radon gas testing and reduction, please see the Practical Guide: Foundations.

Summary

It is important that you are aware of the health hazards and safety precautions attributed to asbestos, mold, and/or lead in your residence and surrounding area. The Canadian Mortgage and Housing Corporation and Health Canada provide great tips and instructions on how to identify materials and stay safe, as well as instructions on how to test the affected area. The Canadian Association for Laboratory Accreditation and The Standards Council of Canada are the two organizations in Canada responsible for certifying laboratories for lead and asbestos testing. The latter resources will enable you to recognize, analyze, and abate the dangers lurking in your heritage home.

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Alternate formats of this document are available upon request. Please contact Lindsay Benjamin at LBenjamin@regionofwaterloo.ca, 519-575-4757 ext. 3210, TTY 519-575-4608 to request an alternate format.

Disclaimer

This practical guide contains useful information on restoring and preserving heritage buildings, but it is intended as a general resource only. Content from third parties with specific expertise has been heavily relied upon and their original works have been acknowledged in the list of references included at the end of this document. The Region of Waterloo has taken all reasonable steps to ensure the accuracy of the information in this publication. However, it is recommended that building owners consult with trained specialists, such as contractors, builders, plumbers, heating and air professionals and electricians, before undertaking any renovations, repairs or construction on their properties. The Region does not assume responsibility for any loss or damage resulting from adherence to the information in this practical guide.